

# Newark Undergraduate Catalog 1998–2000

*College of Nursing*  
*Newark College of Arts and Sciences*  
*University College–Newark*  
*School of Management*

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# Academic Calendars

# About This Catalog

Dates are subject to change.

## 1998–1999

### September

1	Tuesday	Fall term begins.
7	Monday	Labor Day holiday.

### November

24	Tuesday	Thursday classes meet.
25	Wednesday	Friday classes meet.
26	Thursday	Thanksgiving recess begins.
29	Sunday	Thanksgiving recess ends.

### December

10	Thursday	Monday classes meet.
11	Friday	Reading period begins.
15	Tuesday	Fall exams begin.
22	Tuesday	Fall exams end.
23	Wednesday	Winter recess begins.

### January

18	Monday	Winter recess ends.
19	Tuesday	Spring term begins.

### March

14	Sunday	Spring recess begins.
21	Sunday	Spring recess ends.

### April

30	Friday	Monday classes meet.
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### May

3	Monday	Regular classes end.
4	Tuesday	Reading period.
5	Wednesday	Spring exams begin.
12	Wednesday	Spring exams end.
19	Wednesday	Commencement.*

### June

1	Tuesday	Summer Session begins.
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### August

18	Wednesday	Summer Session ends.
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## 1999–2000

### September

1	Wednesday	Fall term begins.
6	Monday	Labor Day holiday.

### November

24	Wednesday	Friday classes meet.
25	Thursday	Thanksgiving recess begins.
28	Sunday	Thanksgiving recess ends.

### December

10	Friday	Reading period.
13	Monday	Regular classes end.
14	Tuesday	Reading period.
15	Wednesday	Fall exams begin.
22	Wednesday	Fall exams end.
23	Thursday	Winter recess begins.

### January

17	Monday	Winter recess ends.
18	Tuesday	Spring term begins.

### March

12	Sunday	Spring recess begins.
19	Sunday	Spring recess ends.

### May

1	Monday	Regular classes end.
2	Tuesday	Reading period.
3	Wednesday	Reading period.
4	Thursday	Spring exams begin.
11	Thursday	Spring exams end.
23	Tuesday	Commencement.*
30	Tuesday	Summer Session begins.

### August

16	Wednesday	Summer Session ends.
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\* Commencement exercises in Newark are held after the university-wide ceremonies. Please consult the Office of the Dean for the date and time of convocation for your school.

The *Newark Undergraduate Catalog* provides information about all undergraduate education at Rutgers' campus at Newark. It describes the program and degree requirements, course offerings, and admission requirements for several faculties at each of four schools: Newark College of Arts and Sciences, University College–Newark, School of Management, and College of Nursing. This catalog also provides information about undergraduate tuition, housing and dining services, registration and grading procedures, and other topics of general interest to students enrolled at any of the four schools.

## College of Nursing

The College of Nursing provides professional education leading to the Bachelor of Science degree, with programs being offered on both the Newark and New Brunswick campuses.

The programs and courses of the school are offered by the Faculty of Nursing. The College of Nursing section of this catalog describes the specific goals, requirements, and course and program offerings of both the faculty and the school.

## Newark College of Arts and Sciences

Newark College of Arts and Sciences is a four-year liberal arts school offering broad and rigorous exposure to the humanities, social sciences, and sciences. A number of degree programs are also available in applied and interdisciplinary fields of study. The school awards both Bachelor of Arts and Bachelor of Science degrees.

The programs and courses of the school are offered by the Faculty of Arts and Sciences. The Liberal Arts Colleges section of this catalog describes the specific aims, requirements, and course and program offerings of both the faculty and Newark College of Arts and Sciences.

## University College–Newark

University College–Newark is a liberal arts school for adult students who have work and family obligations during the day and who wish to attend classes in the evening or on Saturday. The school awards both Bachelor of Arts and Bachelor of Science degrees.

The programs and courses of the school are offered by the Faculty of Arts and Sciences. The Liberal Arts Colleges section of this catalog describes the specific aims, requirements, and course and program offerings of both the faculty and University College–Newark.

## School of Management

The School of Management is a professional, upper-division, undergraduate college offering extensive exposure to a variety of business- and management-related fields of study. The school jointly offers Bachelor of Science degrees with Newark College of Arts and Sciences and University College–Newark.

The programs and courses of the school are offered by the Faculty of Management. The School of Management section of this catalog describes the specific aims, requirements, and course and program offerings of both the faculty and the school.

# About the University

Rutgers, The State University of New Jersey, with more than 48,000 students on campuses in Camden, Newark, and New Brunswick, is one of the major state university systems in the nation. The university comprises twenty-nine degree-granting divisions: twelve undergraduate colleges, eleven graduate schools, and six schools offering both undergraduate and graduate degrees. Five are located in Camden, eight in Newark, and sixteen in New Brunswick.

Rutgers has a unique history as a colonial college, a land-grant institution, and a state university. Chartered in 1766 as Queen's College, the eighth institution of higher learning to be founded in the colonies before the Revolution, the school opened its doors in New Brunswick in 1771 with one instructor, one sophomore, and a handful of first-year students. During this early period the college developed as a classical liberal arts institution. In 1825, the name of the college was changed to Rutgers to honor a former trustee and revolutionary war veteran, Colonel Henry Rutgers.

Rutgers College became the land-grant college of New Jersey in 1864, resulting in the establishment of the Rutgers Scientific School with departments of agriculture, engineering, and chemistry. Further expansion in the sciences came with the founding of the New Jersey Agricultural Experiment Station in 1880, the College of Engineering in 1914, and the College of Agriculture (now Cook College) in 1921. The precursors to several other Rutgers divisions were also founded during this period: the College of Pharmacy in 1892, the New Jersey College for Women (now Douglass College) in 1918, and the School of Education (now a graduate school) in 1924.

Rutgers College assumed university status in 1924, and legislative acts in 1945 and 1956 designated all its divisions as The State University of New Jersey. During these years the university expanded significantly with the founding of an evening division, University College, in 1934, and the addition of the University of Newark in 1946 and the College of South Jersey at Camden in 1950.

Since the 1950s, Rutgers has continued to expand, especially in the area of graduate education. The Graduate School-New Brunswick, Graduate School-Newark, and Graduate School-Camden serve their respective campuses. In addition, several professional schools have been established in such fields as management, social work, criminal justice, applied and professional psychology, the fine and performing arts, and communication, information, and library science. A number of these schools offer undergraduate programs as well. Livingston College was founded in 1969 to provide a diverse community of students with the opportunity to pursue undergraduate degrees in the liberal arts and professions.

Today, Rutgers continues to grow, both in its facilities and in the variety and depth of its educational and research programs. The university's goals for the future include the continued provision of the highest quality undergraduate and graduate education along with increased support for outstanding research to meet the needs of society and fulfill Rutgers' role as The State University of New Jersey.

# Undergraduate Education in Newark

The Newark campus of Rutgers, The State University of New Jersey, offers students the advantages of a personalized education at a moderately sized campus, combined with the superior classroom, library, and laboratory facilities of a major research university. Near the heart of the state's largest city, within the nation's liveliest metropolitan area, Rutgers-Newark upholds the dual mission of access with academic excellence.

Rutgers-Newark's richest resource is its faculty of 500 distinguished scholars and educators and the scholarly research that enriches the classroom for students. Since teaching is a value that pervades the Rutgers-Newark campus, the university recruits faculty members for both their scholarly abilities and for their commitment to teaching. Rutgers' Newark campus was selected by *U.S. News & World Report* as among "America's Best Colleges."

## Newark College of Arts and Sciences and University College-Newark

There are two undergraduate liberal arts colleges on Rutgers' Newark campus: Newark College of Arts and Sciences (NCAS), with a student enrollment of about 3,700, and University College-Newark (UC-N), which enrolls about 2,000 students. Together, they offer majors in over thirty fields of study.

Newark College of Arts and Sciences serves the more traditional college student who attends classes during the day, while University College-Newark is primarily an evening and weekend college for adult students who work during the day and who attend college part-time. Instruction at the two colleges is provided by the Faculty of Arts and Sciences. Both NCAS and UC-N offer the best of the undergraduate liberal arts tradition and provide excellence in preprofessional studies in such areas as medicine, law, business, and other disciplines. With a moderate-sized student population, NCAS is able to offer students the benefits of small classes and the opportunity to work with faculty members on an individual basis.

## College of Nursing

The College of Nursing educates women and men for entry into the profession of nursing at the baccalaureate degree level. The college also provides education for the registered nurse and second degree student seeking a baccalaureate degree in nursing. The nursing program is offered on both the Newark and New Brunswick campuses, with a curriculum that includes liberal arts, sciences, and the humanities, and the nursing major, which focuses on health, acute and chronic care, and leadership and management skills within the profession. The curriculum is designed to promote intellectual curiosity, human compassion, and dedication to nursing practice. Students' clinical experiences are supervised by faculty and integrated with course work.

As the largest provider of professional nurses in the state of New Jersey, Rutgers has a distinguished record of education since 1942.

## School of Management

The School of Management (SOM) is an upper-division, undergraduate school that offers programs in accounting, finance, management, and marketing. All programs are accredited by the American Assembly of Collegiate Schools of Business. Its faculty also provides management education at the Graduate School of Management. Students benefit from the depth and breadth of knowledge held by faculty responsible for business education from the bachelor's degree to the doctoral level. Graduates gain an in-depth understanding of their area of concentration within the management curriculum; acquire knowledge of uses and applications of computers; learn to work in team settings to analyze and address complex management problems; think critically and bring innovative approaches to problem solving; and gain an appreciation for international aspects of business. Coupled with their professional education, students also receive a solid grounding in the liberal arts.

Corporate offices of more than 200 of the nation's largest companies lie within a 50-mile radius of the Rutgers–Newark campus, offering a stimulating and dynamic environment for interaction between the campus and the corporate community.

## Excellence and Access

Rutgers–Newark's undergraduate programs provide students with the knowledge and skills to participate fully in the economic, scientific, cultural, and political life of the state, the nation, and an evolving and increasingly interdependent world.

Rutgers–Newark, with more than seventy countries represented among the nationalities of its student population, serves as a role model for high-quality urban university centers that wish to pursue the dual goals of excellence and access. The campus takes pride in its leadership role in educating a racially and ethnically diverse group of students to become literate and productive citizens, prepared for future opportunities and challenges.

## The Campus and the City

The 40-acre Rutgers–Newark campus is a modern complex with a student population of more than 9,500 and is located in the center of an educational, medical, and cultural district known as University Heights. Newark, the business, financial, and legal center of New Jersey, is also a college town. Rutgers and its academic neighbors, the New Jersey Institute of Technology, the University of Medicine and Dentistry of New Jersey, Essex County College, and Seton Hall Law School, provide a wide range of higher education opportunities to a student population of 25,000.

In addition to the Newark College of Arts and Sciences, University College–Newark, the College of Nursing, and the School of Management, there are four other colleges on the campus: the Graduate School–Newark, the School of Law–Newark, the School of Criminal Justice, and the Graduate School of Management. Rutgers–Newark also is home to the Center for Molecular and Behavioral Neuroscience, within the Aidekman Research Center, where an international faculty conducts intensive research on such brain disorders as Alzheimer's and Parkinson's diseases, stroke, dyslexia, and schizophrenia.

On campus, an array of theater performances, lectures, concerts, films, and exhibits provide an active cultural environment. A wide range of athletic and recreational facilities are available in the Golden Dome Athletic Center, including a swimming pool, racquetball courts, two gymnasiums, and workout rooms equipped with aerobic and Nautilus machines and free weights.

The campus is wholly computer-linked through a fiber-optic cable. Student residence-hall rooms are wired to accept personal computers and are able to connect to the vast array of offerings on the Internet. The technologically state-of-the-art John Cotton Dana Library has a computerized card catalog that includes the over three million holdings in the Rutgers library system. A growing collection of CD-ROMs and computer workstations are also available at Dana Library. A recently completed addition to the library significantly increases shelf space and provides additional study and meeting areas that are especially appreciated by commuting students. The Institute of Jazz Studies, renowned by music scholars around the world for its unmatched collection of jazz archives, is now housed in the Dana Library.

Rutgers–Newark enjoys a close interinstitutional relationship with the adjacent New Jersey Institute of Technology. The schools' congruent academic calendars and complementary curriculum offerings have led to some 1,000 students cross-registering for courses. This consortial relationship increases the variety and depth of courses available to Rutgers–Newark liberal arts courses.

Newark's cultural community includes such well-visited institutions as the Newark Public Library, the Newark Museum, Newark Symphony Hall, home of the New Jersey Symphony Orchestra and the New Jersey Opera, and the world class New Jersey Performing Arts Center complex, just a few blocks from the campus. The city's central business district has been transformed by new glass, brick, and steel office buildings, and relandscaped parks. Newark recently won its second All-American City Award. Newark has a superb public transportation system and is readily accessible by car, bus, or train. Nearby Newark International Airport is among the nation's fastest-growing airports.

# College of Nursing

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# About the College of Nursing

The primary purposes of the College of Nursing are to provide baccalaureate education for those entering the profession of nursing and for those registered nurses wishing to obtain a baccalaureate degree, to provide graduate education at the master's and doctoral levels, to generate research and scholarly activities in the field of nursing and health care, to contribute to the improvement of the delivery of health and nursing services to the public, and to foster and enhance the image of nursing within the university and, more broadly, by active participation in projects and activities aimed at improving the health of all citizens.

## HISTORY

Rutgers, The State University of New Jersey, has been involved in the education of nurses since the early 1940s when the Newark and Camden campuses offered courses in public health nursing. The nursing program at the Newark campus, located in Ackerson Hall, was established in 1952 with funds allocated by Governor Alfred E. Driscoll of New Jersey.

In 1955, the School of Nursing received accreditation by the National League for Nursing. On March 6, 1956, the School of Nursing became the College of Nursing. Ella V. Stonsby, first director of the School of Nursing, was appointed the first dean of the college.

Supported by a grant from the National Institute of Mental Health, a program of graduate study at the master's level in psychiatric nursing was established in 1955; in 1974, master's programs in community health nursing, parent/child nursing, and medical/surgical nursing were added. A doctor of philosophy program in nursing was approved by the New Jersey Board of Higher Education in 1989.

## ACCREDITATION

The undergraduate and graduate programs in nursing are accredited by the National League for Nursing. The college is approved by the New Jersey State Board of Nursing and is a member of the Council of Baccalaureate and Higher Degree Programs of the National League for Nursing. Rutgers, The State University of New Jersey, is accredited by the Commission on Colleges and Universities of the Middle States Association of Colleges and Secondary Schools. Periodic external reviews of graduate programs are conducted to ensure their continued excellence.

## NEW BRUNSWICK PROGRAM

The College of Nursing also has a baccalaureate program for nursing on the New Brunswick campus. The program admits undergraduate students for the fall term only. All students are governed by the admissions criteria, administrative procedures, academic regulations, and student services under the direction of the dean of the College of Nursing in Newark. The College of Nursing in New Brunswick is located at 1 Richardson Street on the College Avenue campus.

## EDUCATIONAL OPPORTUNITY FUND

The Educational Opportunity Fund Program (EOF) targets low-income state residents who excel in their academic environment but may not have the standardized scores to compete with regular admissions. The program provides the student with financial assistance to defray the cost of education, academic assistance to compete in the classroom, and counseling assistance to develop leadership and multicultural awareness skills. The financial assistance is provided in the form of a grant and may range from \$800 to \$1,000 per year. Academic assistance is provided to complement the rigorous nursing curriculum. Academic support consists of individual tutoring; concurrent special courses in the sciences, math, and nursing theory; special seminars in writing and test taking; a presophomore chemistry skills course; an NCLEX-RN review; and the sponsoring of membership in honor clubs and societies. Counseling assistance is provided in the form of individual, group, and family counseling, first-year student seminars, and oversight of student organizations and clubs. The program is available to students coming directly out of high school and to transfer students.

For information, please contact:

Director of EOF Program  
College of Nursing  
Rutgers, The State University of New Jersey  
Newark, NJ 07102  
973/353-5326

## SIGMA THETA TAU

The Alpha Tau Chapter of Sigma Theta Tau, the international honor society of nursing, was established at the College of Nursing in 1968. Seniors who attain high scholastic standing, demonstrate leadership qualities, and show promise of continuing professional achievement are selected annually for membership by chapter members.

## RESERVE OFFICER TRAINING CORPS

The Air Force has a continuing need for nurses in a variety of specialties. It offers college scholarships for nursing students with an undergraduate grade-point average of at least 2.65 or for high school seniors with a minimum SAT score of 1100. Scholarships include tuition, fees, books, and a \$150 per month stipend. Students may enroll in two-, three-, or four-year programs. Normally, students attend summer

field training at the end of the sophomore year. Air Force ROTC also offers an accelerated one-year program for nursing majors.

An army officers training program is offered through the Department of Military Education (Army) on the Rutgers campus at New Brunswick. Army ROTC is open to qualified Rutgers students of all academic majors. Completion of the program results in the award of an army commission as lieutenant in either the regular army, army reserves, or army national guard. Tangible aspects of participation include scholarship opportunities, pay during the advanced phase of the program (300- and 400-level courses), improved potential in seeking civilian employment, and access to military careers.

# Admission to the College of Nursing

Rutgers–Newark encourages the admission of students who are seeking an education of the highest possible quality. The College of Nursing receives applications from a wide variety of potential students. Qualified students are admitted to the college without regard to race, color, creed, national origin, sex, disability, handicap, sexual orientation, or age.

Individual inquiries about the college and its programs are welcomed. Tours of the campus and personal interviews may be arranged by contacting the admissions office.

## HOW TO APPLY

The Rutgers–Newark admissions office is located in Blumenthal Hall and is open Monday, Thursday, and Friday from 8:30 A.M. to 4:30 P.M., and Wednesday from 8:30 A.M. to 6:30 P.M. The mailing address is 249 University Avenue, Newark, NJ 07102-1896. The telephone number is 973/353-5205.

Applications for the College of Nursing may be obtained from the admissions office by either visiting the office or by requesting an application by phone or mail. They are also available in New Jersey high school guidance offices and county college transfer counselor offices. Application and catalog information may be downloaded from the Rutgers web site ([www.rutgers.edu](http://www.rutgers.edu)) or the College of Nursing web site (<http://nursing.rutgers.edu/nursing/>). Students also may apply online.

## WHEN TO APPLY

Applicants should refer to the undergraduate application packet for specific information about the fall application deadline. However, it is in the applicant's best interest to file the application as early in the school year as possible, to allow the university adequate time to process the application and give maximum consideration to all credentials. The College of Nursing does not offer admission for the spring term.

## CREDENTIALS

1. Entrance Examination: candidates for admission are required to submit scores on the Scholastic Assessment Tests (SAT) of the College Board or on the American College Testing Program test (ACT). The test should be taken by December, since results of later tests normally arrive too late for consideration.

**SAT:** Applications for the SAT are available in high schools or on request from College Board, P.O. Box 592, Princeton, NJ 08541. Students should request that their scores be sent to the College of Nursing, code number 2765.

**ACT:** Applications for the ACT are available in high schools or on request from the American College Testing Program, P.O. Box 168, Iowa City, IA 52243. Students should request that their scores be sent to the College of Nursing, code number 2592.

Candidates are *NOT* required to take the SAT or ACT if: (1) 12 or more college-level credits have been satisfactorily completed at an accredited institution of higher education; or (2) the candidate has been out of school two or more years.

2. Official high school transcript and/or GED diploma and scores.
3. Official transcripts of work from all colleges attended.
4. Official record of hospital diploma school (registered nurses only).

### High School Entrance Units

The high school transcript must show that the candidate will graduate (or has already graduated) and will have completed a minimum of sixteen academic courses in grades nine through twelve. Courses taken in the eighth grade may be used to meet requirements in mathematics and foreign language, but are not counted among the sixteen academic courses. Required courses for College of Nursing candidates include four years of English, three years of college preparatory mathematics (Algebra I and II, geometry), one year of chemistry, and one year of biology, and seven other approved academic courses. (A fourth year of college preparatory mathematics is highly recommended.)

### Transfer Students

A student who has or will have earned 12 college-level credits or more at an accredited institution of higher education by the expected date of entrance is considered a transfer student.

The transfer applicant must submit transcripts from all previous schools, including other divisions of Rutgers, whether or not he or she wishes to ask for credit for work completed. Students currently enrolled in other institutions should submit transcripts of their work through the fall term or winter quarter along with a listing of the courses planned for the spring term or quarter. If the latter information is not provided on the transcript, the student should list it on the appropriate section of the application form. All transcripts should include the titles, numbers, and grades of courses completed and should be mailed directly to the admissions office from the institution concerned. Transcripts submitted directly from the applicant will not be accepted.

In addition to the college record, a transfer applicant must submit: (1) the application form and (2) the secondary school record.

The priority filing date for transfer students is March 1. Credit for work done at another institution is determined after applicants have been admitted to the college and have indicated that they plan to attend. Credit is generally granted for equivalent courses taken at an accredited institution of higher learning provided the student earned

grades of *C* or better. Students wishing to transfer from another Rutgers college should consult the admissions office on the policy for transfers within Rutgers.

### Registered Nurses

The College of Nursing offers a bridge program designed to accelerate the attainment of the baccalaureate and/or master's degree. Two options offer prospective students a seamless approach that will enable graduates of nursing associate degree and diploma programs and non-nursing baccalaureates to move through higher-education levels with greater ease. Registered nurses have two options for pursuing advanced degrees at the College of Nursing:

- R.N./B.S. in Nursing
- R.N./M.S. in Nursing

Both options are offered on the Newark and New Brunswick campuses. Graduate courses are offered on the Newark and Camden campuses.

R.N./B.S. program applicants must have graduated from an accredited associate degree or diploma program in nursing. A cumulative grade-point average of 3.0 or higher and licensure as a registered nurse in the state of New Jersey are required.

Students seeking admission to the R.N./M.S. in nursing program also are required to take the Graduate Record Examination, submit three reference letters, and interview with the B.S./M.S. in nursing program faculty adviser and faculty in the appropriate graduate specialty track. Credentials should be submitted as outlined in the section related to transfer students.

## OTHER ADMISSION OPTIONS

### Admission by Examination

Applicants whose preparatory courses do not meet the formal requirement of 16 specified units, but who show promise, may qualify for admission by examination. Those with a GED, and prospective candidates who have not completed high school or who have a diploma from a nonaccredited high school, may apply for admission by examination. Such candidates must take three Achievement Tests of the College Board, as well as the SAT or ACT required of all candidates. The achievement tests required are English, mathematics, and a science (either biology or chemistry).

### Educational Opportunity Fund Program

The Educational Opportunity Fund Program (EOF) is designed to ensure access to low-income state residents who are capable and motivated but who may not be prepared for the rigors of college study. Students who are admitted to this program possess the academic potential to succeed in college, but generally require academic support in addition to that which is provided in the classroom. To assist these students, the state of New Jersey provides financial, academic, counseling, and diagnostic testing services. For further information, contact the admissions office or the Educational Opportunity Fund program director for the college (973/353-5326).



## International Students

In addition to the regular application, international students must submit the Supplementary Form for International Students (available from the admissions office) and the documentation requested on that form indicating present or proposed visa status. Official records (original or certified copies) of all previous secondary and postsecondary education, as well as official English translations of these records, are required.

International students must submit the SAT or ACT score; those students whose primary language is not English must submit an official score from the Test of English as a Foreign Language (TOEFL). For further information on these tests, write or call the Educational Testing Service, Princeton, NJ 08541, U.S.A.; telephone 609/921-9000.

## Nonmatriculated Students

Individuals who are not matriculated in the College of Nursing may enroll in selected courses. However, admission to these courses is on a space-available basis. In addition, taking courses as a nonmatriculated student is no guarantee of future admission to the College of Nursing.

Those individuals interested in attending the College of Nursing as nonmatriculating students should contact the Office for Student Life and Services, Ackerson Hall, Room 110.

## ACADEMIC CREDIT

### Advanced Placement

High school seniors who have taken advanced courses may take the College Board Advanced Placement Examinations administered by the College Board. Advanced placement and/or degree credit are awarded for scores of 4 or 5.

To waive the English composition requirement, any student may request permission to take a proficiency examination. Although the requirement may be waived, no credit is granted.

The New Jersey College Basic Skills Placement Test (NJCBSPT) is designed to help the admitted student of New Jersey public and/or participating private colleges by assessing his or her individual skills in language and mathematics. The NJCBSPT results provide information to determine whether special help is needed to ensure the success of the student in college-level work. There is no fee. First-year students will be scheduled for the NJCBSPT after admission to the college.

### College Level Examination Program

The college participates in the College Level Examination Program (CLEP) which is administered by the College Entrance Examination Board. Candidates for admission who have been out of school five years or more and who have not attended college may receive degree credit based on the CLEP General Examination. Students may earn a maximum of 24 credits for the General Examination, providing they score at or above the fiftieth percentile. Candidates for admission will be granted degree credit for CLEP Subject Examinations approved by the college, providing they achieve a score at or above the fiftieth percentile. For further information, contact the College Entrance Examination Board, Princeton, NJ 08541; telephone 609/921-9000.

## Advanced Placement for Registered Nurses

### R.N./B.S. Program

Depending on the number of credits earned, transferred, waived, or challenged, the registered nurse applicant may take three to four terms to complete the baccalaureate degree in nursing.

The following course requirements may be earned at Rutgers, The State University of New Jersey, or transferred from another college, waived, or challenged:

#### Lower Division Courses

21&62:120:235	Microbiology	3
21&62:120:241-242	Anatomy and Physiology I,II	8
21&62:160:108	Organic Biochemistry	3
21&62:160:113	General Chemistry Laboratory	1
21&62:160:115	General Chemistry	3
21&62:350:101-102	English Composition	6
21&62:920:201	Introduction to Sociology	3
	descriptive/inferential statistics *	3
	general electives	9
	history/political science/economics electives	6
	humanities elective	3
	literature elective	3
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#### Nursing Courses (Lower and Upper Division)

The following courses may be met by nursing courses transferred from an accredited NLN associate degree in nursing program. Graduates from diploma programs may challenge the following courses:

25:520:255	Nutrition	3
25:705:202	Cultural Dimensions of Humans and Their Environment	3
25:705:223	Trends in Health Care Delivery	3
25:705:229	Life Span: A Holistic Approach	3
25:705:233	Human Interactive Processes	3
25:705:304	Nursing Process II	4
25:705:345,346	Nursing Intervention I,II	12
25:705:375,376	Humans and Their Environment I,II	8
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#### Required Courses for R.N./B.S. Program

Following are courses all students must take in the R.N./B.S. program:

25:705:303	Nursing Process I	4
25:705:390	Research Process in Nursing	3
25:705:436	Nursing Intervention IV	6
25:705:437,438	Humans and Their Environment III,IV	8
25:705:439	Nursing Process III	4
25:705:440	Nursing Intervention in the Community	3
25:705:490	Nursing Informatics	3
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### R.N./M.S. Program

Depending on the number of credits earned, transferred, waived, or challenged, the registered nurse applicant may take five terms to complete the baccalaureate and master's degrees in nursing.

The following course requirements may be earned at Rutgers, The State University of New Jersey, or transferred from another college, waived, or challenged:

\* A number of courses satisfy this requirement. Consult your adviser.

*Lower Division Courses*

21&62:120:235	Microbiology	3
21&62:120:241-242	Anatomy and Physiology I,II	8
21&62:160:108	Organic Biochemistry	3
21&62:160:113	General Chemistry Laboratory	1
21&62:160:115	General Chemistry	3
21&62:350:101-102	English Composition	6
21&62:920:201	Introduction to Sociology	3
	descriptive/inferential statistics *	3
	general electives	9
	history/political science/economics electives	6
	humanities elective	3
	literature elective	3
		<u>51</u>

*Nursing Courses (Lower and Upper Division)*

The following courses may be met by nursing courses transferred from an accredited NLN associate degree in nursing program. Graduates from diploma programs may challenge the following courses:

25:520:255	Nutrition	3
25:705:202	Cultural Dimensions of Humans and Their Environment	3
25:705:223	Trends in Health Care Delivery	3
25:705:229	Life Span: A Holistic Approach	3
25:705:233	Human Interactive Processes	3
25:705:304	Nursing Process II	4
25:705:345,346	Nursing Intervention I,II	12
25:705:375,376	Humans and Their Environment I,II	8
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*Required Courses for R.N./M.S. Program*

Following are courses all students must take in the R.N./M.S. program:

25:705:303	Nursing Process I	4
25:705:390	Research Process in Nursing	3
25:705:436	Nursing Intervention IV	6
25:705:437,438	Humans and Their Environment III,IV	8
25:705:439	Nursing Process III	4
25:705:440	Nursing Intervention in the Community	3
25:705:490	Nursing Informatics	3
26:705:510	Theory Development †	3
26:705:512	Nursing Research Methods †	3
		<u>37</u>

*Masters Curriculum Sequences of Courses*

26:120:547	Advanced Pathophysiology	3
26:705:506	The Contemporary Role of the Advanced Practice Nurse	3
26:705:520	Advanced Health Assessment	3
26:705:504	Human Diversity and Social Issues I	3
26:705:540	Dimensions of Primary Health Care	3
26:705:538	Pharmacodynamics for Primary Health Care	3
26:705:570	Information Systems Management theory I,II ‡	3
	practicum I,II ‡	6
	elective	6
		<u>36</u>

The graduate program is designed to prepare nurses in the areas of adult and aged in primary care, adult and aged in acute care, advanced practice in pediatric nursing, advanced practice in childbearing families, community health nursing, psychiatric/mental health nursing, and family nurse practitioner.

**Advanced Placement for Students Earning a Second Degree**

Students who have earned a baccalaureate degree from an accredited institution of higher education are generally granted credit for equivalent courses in which a grade of C or better has been earned.

Depending on the number of credits earned, transferred, waived, or challenged, the second degree applicant may take three to four terms to complete the baccalaureate degree in nursing.

The following course requirements may be earned at Rutgers, The State University of New Jersey, or transferred from another college, waived, or challenged. Second degree students are required to have all sciences, nutrition, and statistics; however, other electives can be used to meet the nonscience electives.

*Lower Division Courses*

21&62:120:235	Microbiology	3
21&62:120:241-242	Anatomy and Physiology I,II	8
21&62:160:108	Organic Biochemistry	3
21&62:160:113	General Chemistry Laboratory	1
21&62:160:115	General Chemistry	3
21&62:920:201	Introduction to Sociology	3
	descriptive/inferential statistics *	3
	general electives	9
	electives	18
		<u>51</u>

*Nursing Courses (Lower Division)*

The following courses may be challenged or transferred from another college:

25:520:255	Nutrition	3
25:705:202	Cultural Dimensions of Humans and Their Environment	3
25:705:223	Trends in Health Care Delivery	3
25:705:229	Life Span: A Holistic Approach	3
25:705:233	Human Interactive Processes	3
		<u>15</u>

*Nursing Courses (Upper Division)*

The following courses are required of all students:

25:705:303,304	Nursing Process I,II,III and 439	12
25:705:345,346	Nursing Intervention I,II,III,IV	24
25:705:375,376	Humans and Their Environment I,II,III,IV	16
25:705:390	Research Process in Nursing	3
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Advanced placement examinations may only be taken once. Failure on any advanced placement examination requires the student to take the regular course offering. Criteria for successful completion of examinations are based on College of Nursing grading policy and standardized test passing levels.

An administrative fee is charged for each advanced placement examination.

Please note that passing credit for nursing theory courses must be earned prior to or concurrent with nursing intervention courses. Advanced placement is not available for these courses.

\* A number of courses satisfy this requirement. Consult your adviser.  
 † Graduate courses to be taken concurrently with baccalaureate courses.  
 ‡ Course code varies according to the specialty chosen.

## **NOTIFICATION OF ACTION**

The university will acknowledge by mail receipt of the application and application fee. While the admissions office will make every effort to notify applicants concerning the completeness of the application, it is the applicant's responsibility to make certain that all required credentials are submitted and all deadlines are observed.

The College of Nursing has a policy that allows candidates to be notified soon after they have been accepted.

# **Student Life and Services**

Descriptions of programs and services available to all Newark undergraduate students are found in the General Information section toward the back of this catalog. The programs and services described in this chapter are specifically for College of Nursing students.

## **LEARNING RESOURCE CENTERS/ COMPUTER LABORATORIES**

Learning Resource Centers/Computer Laboratories in the College of Nursing provide essential support for both the instructional and clinical components of the curriculum. One center is located on the lower level of Ackerson Hall and the others, in New Brunswick, are at 17 Bartlett Street and 1 Richardson Street. The centers contain audiotapes, videotapes, and films, as well as audiovisual, computer, and other instructional equipment. The classroom laboratories have simulated hospital units that contain beds, wall oxygen, aspirators, sphygmomanometers, and other equipment essential for the development of clinical skills. Space is provided for individual and group learning. The computer laboratories provide many fully equipped computer workstations and a broad collection of software.

## **EOF LEARNING CENTER**

The College of Nursing Educational Opportunity Fund Program Learning Center is located on the second floor of Conklin Hall. Although the center is designed primarily to meet the needs of the college's EOF population, the center is capable of serving all College of Nursing students who are underprepared in the basic skills of writing, math, science, reading, and test taking. Academic support also is available to students who are enrolled in upper-division nursing courses. An important dimension of the services available is the professional services of a developmental specialist, nurse psychotherapist, peer counselors, peer tutors, a professional counselor, and a computer laboratory aide. Moreover, the center offers specialized support courses to students enrolled in General Chemistry, Organic Biochemistry, Anatomy and Physiology I and II, Humans and Their Environment II, and College Algebra. Individual and group tutorial services also are offered free of charge. Students also may receive assistance in setting up study groups, time management, task management, and review sessions. Additionally, a full-service computer laboratory is available for student use.

## CLINICAL PRACTICE AGENCIES

Undergraduate nursing students, under the supervision of the College of Nursing faculty, care for selected clients in a variety of community, hospital, and clinic settings. A representative sample of the more than fifty cooperating institutions and agencies includes: The University Hospital—University of Medicine and Dentistry of New Jersey; Saint Michael's Medical Center; Visiting Nurse Association of Central New Jersey; Visiting Nurse Association of Essex Valley; John F. Kennedy Memorial Hospital; Beth Israel Medical Center; Daughters of Miriam; St. Peter's Medical Center; Tri-Hospital Home Care; Raritan Bay Medical Center; Visiting Nurse and Health Services (Elizabeth); and Robert Wood Johnson University Hospital.

Students must do some portion of their clinical practice in both the Newark and New Brunswick health care agencies.

## RUTGERS NURSING STUDENTS ASSOCIATION

Students have the opportunity to join the Rutgers chapter of the New Jersey Nursing Students Association. The association brings together all nursing students in the state to address issues, trends, and changes in professional nursing.

## STUDENT GOVERNMENT

Student government is an integral part of the college environment. The College of Nursing Student Senate serves as a liaison between the administration and the student body. Students participate in self-government at regularly scheduled meetings of the Senate. Students also are members of faculty and administrative committees that deal with policy and procedural operations of the college and the university at Newark.

## COLLEGE OF NURSING ALUMNI ASSOCIATION

The College of Nursing Alumni Association, founded in 1957, serves the interests of more than 2,500 graduates. The association sponsors various awards and scholarships; cooperates with the Career Development Center in career advising; collaborates with the Office of Admissions in student recruitment; holds a Spring Brunch for the senior class every year; and provides active assistance to the Rutgers University Foundation in its annual fund-raising drive.

Through the various activities and programs, friendships made in college can be strengthened or renewed within a context of continuing involvement in the life of the college.

# Academic Policies and Procedures

Policies and procedures that apply to all Newark undergraduate students are found in the General Information section of this catalog. The policies and procedures described in this chapter apply specifically to College of Nursing students and take precedence.

## ACADEMIC ADVISING

Each student is assigned a faculty adviser who guides and advises the student as the student progresses through the curriculum. Students must meet with their advisers to review course selections before October registration for spring classes, and March registration for fall classes.

## GRADES AND RECORDS

Grades represent the quality of the student's performance, measured against standards of knowledge, skill, and understanding, as evaluated by the instructor. Grades are reported to the university registrar at the end of each term by the following symbols:

Grade	Definition	Numerical Equivalent
A	Outstanding	4.0
B+		3.5
B	Good	3.0
C+		2.5
C	Satisfactory	2.0
D	Poor	1.0
F	Failing	0.0

The College of Nursing employs the grading system that is currently in force within the university. The faculty has approved the use of the following grade conversions:

A	=	89.5–100
B+	=	84.5–89.49
B	=	79.5–84.49
C+	=	74.5–79.49
C	=	69.5–74.49
D	=	59.5–69.49
F	=	0–59.49

## Other Grade Symbols

**P/NC (Pass/No Credit).** A nonnumerical grade of *Pass* (equivalent to grades of A, B+, B, C+, and C) or *No Credit* (equivalent to grades of D and F) is assigned to any student who has registered for his or her course on that basis, when such registration is in accord with the regulations of the student's college and the faculty offering the course.



**TB+, TB, TC+, TC, TD, TF, TNC, TU—Term's Work Incomplete.** To be used at the discretion of the instructor when the student has failed to complete a portion of required course work. The grade following the *T* symbol represents the grade the instructor would assign if the outstanding work were to remain incomplete.

The student may improve his or her grade by completing the work of the term within the time allowed by the instructor; however, this time cannot extend beyond September 15 for October degree candidates. In other cases, the time limits are: (1) the last day of classes of the spring term for fall term grades, and (2) October 15 for spring and summer grades. If the work is not completed, the *T* is dropped, and the grade remains. In no case can the grade be lowered. If the course in which the *T* grade is received is a prerequisite, the *T* grade must be removed before the student may advance to the next course, unless the grade is *TB* or *TC*.

**X—Examination Not Taken.** Assigned only when the instructor believes a student might have passed the course had the final examination been taken. The student must arrange with the instructor to take a deferred examination. If the student fails to take a deferred examination within two weeks of the close of the term or the time specified by the instructor in cases of extreme hardship, the *X* becomes an *F*. (A *TX* will become a *TF* at the end of such deferred examination period.)

**TX—Term's Work Incomplete and Examination Not Taken.** To be used when the circumstances are such that both the *T* and *X* are applicable.

**RD, RF—Reexamination.** May be used only when the instructor considers the examination grade to be so inconsistent with the student's previous work that the instructor cannot assign a grade better than *D*. The symbol *R* entitles the student to a reexamination in the course to try to improve the grade. The student must arrange to take the reexamination within two weeks of the end of the term. If reexamination is not taken within the time specified, the *R* is dropped from the student's record, and the numerical grade remains unchanged.

**DF—Disciplinary Failure.** This symbol to be assigned only by the Associate Dean for Student Life and Services when a student pleads guilty to a sanction in a case in which the charge is academic dishonesty (cheating or plagiarism). The *DF* remains on the transcript as a permanent grade and has the numerical value of zero for the purpose of computing the student's grade-point average. The student may repeat the course for the purpose of earning degree credit and/or fulfilling a requirement. However, in contrast to an academic failure (grade of *F*), which, when successfully repeated, is no longer computed in the grade-point average, the *DF* continues to be computed as zero along with the second grade earned upon repeating the course.

**W—Withdrawal.** Assigned in the following cases: (1) when a student officially drops a course between the end of the change-of-registration period and the end of approximately the tenth week of instruction, and (2) when a student withdraws from the college prior to the end of the tenth week, if he or she submits a properly completed withdrawal form, obtained from the Office of Student Life and Services, Ackerson Hall 110, Newark, or at 1 Richardson Street, New Brunswick. A College of Nursing undergraduate student may withdraw from the same required College of Nursing course or required natural science course only once.

## Credit Prefixes

**E.** No credit toward the degree is earned for the course, although the student is responsible for all course work and must take the final examination. A grade is assigned but is not computed in the student's average.

**F.** The course was failed, hence no credit is allowed, but the grade of *F* is computed in the student's average.

**G.** Identifies an undergraduate course for which graduate credit has been approved. The course does not count toward the undergraduate degree nor is it included in the undergraduate average. Graduate students taking undergraduate courses should contact the Office of the Graduate School, Room 401, Hill Hall.

**R.** Indicates that the student is repeating a course to try to improve his or her grade and average. Upon completion of the repeated course, the student has the option of selecting the grade that will remain in his or her average, although the original *D* or *F* remains on the transcript. The repeat option will cancel only one grade (the lowest) in the calculation of the cumulative grade-point average. All other grades for the course will be included in the average, although degree credit will be awarded just once.

**N.** Indicates that a course was not taken for credit, and the grade assigned will be *S* or *U*.

## Term Grade Reports

At the end of each term, a grade report listing the grade earned in each course is mailed to the student's home address. If a student does not receive a term grade report or questions its accuracy, he or she should first contact the Office of the Registrar.

## Warning Notices

Prior to the end of the seventh week of the term, faculty are required to report to the registrar the name of each student making unsatisfactory progress, to date, in any nursing course. Warning notices are then mailed to such students, who are advised to consult with the course leader or a faculty member designated by the course leader. In addition, the student's faculty adviser is notified by the College of Nursing Office of Student Life and Services. If the student is warned in more than one subject, the student must meet with his or her faculty adviser.

Warning notices should be taken seriously. They may be issued for a variety of reasons, including poor attendance, failure to submit assignments on time, inadequate preparation for the level of course work expected, or an inability to demonstrate a reasonable grasp of the subject matter.

A warning is not a final determination of grade. With proper advice and sufficient effort, students receiving such a notice may be able to improve their performance to an acceptable level. On the other hand, failure to receive a warning notice does not imply that a passing grade will be awarded at the end of the term.

## Student Complaints about Grades

Student complaints concerning the grading practices of individual instructors should be handled in the following manner:

1. In the first instance, the student should go to the faculty member as soon as dissatisfaction is encountered. This step allows the student to determine whether an error



has been made in assigning the grade. Alternatively, it provides the faculty member an opportunity to explain the basis for which the grade was given.

2. If the matter is not resolved, the student should go to the course leader within two weeks of receiving the unsatisfactory grade.
3. If the student remains dissatisfied with the handling of the complaint, and wishes to pursue it, he or she must, within two weeks of the above meeting, address a letter of complaint to the chairperson of the Student Life Committee. This letter should outline in detail the nature of the complaint, the surrounding circumstances, and action requested of the committee. Scholastic materials and supporting papers also should be submitted at this time. The committee at this point reevaluates all components of the grade in question.
4. The Student Life Committee chairperson validates that each previous step has been completed in accordance with this policy and arranges a student life committee meeting within two weeks of receipt of the letter of complaint. The following people attend that meeting: the student/complainant, the faculty member, and the course leader.
5. Within seventy-two hours of the meeting to hear the grade complaint, the Student Life Committee will make recommendations on its disposition, in writing, to the faculty member and the associate dean for academic affairs. The basis of the recommendations shall be included.
6. The faculty member will review the Student Life Committee recommendations and forward his or her response, in writing, within forty-eight hours to the associate dean for academic affairs.
7. Within one week, the associate dean for academic affairs will make the final decision regarding the grade complaint and notify, in writing, each of the following parties: student/complainant, faculty member, course leader, faculty adviser, and, when appropriate, the chairperson of the Scholastic Standing Committee.

## SCHOLASTIC STANDING

It is the responsibility of each student to become familiar with the academic regulations of the college, particularly with regard to scholastic standing requirements.

### Cumulative Grade-Point Average

A student's scholastic standing, which is the basis for decisions regarding continuance in college, graduation, probation, and dismissal, is based on the student's cumulative grade-point average (GPA). The cumulative grade-point average is determined by the weighted average of all grades earned in the university that are applicable to the degree program in which the student is matriculated.

The cumulative grade-point average is computed by multiplying the grade received in each course taken for credit (and to be included in the average) by the number of credits the course is worth to obtain the grade points earned in that course. The grade points earned in all such courses are then added together and the sum divided by the total credits of those courses.

Grade (Numerical Equivalent) x Credits = Grade Points

$$\frac{\text{Total Grade Points}}{\text{Total Credits}} = \text{Cumulative Grade-Point Average}$$

**Adjusted Cumulative Grade-Point Average.** First-year students' first-term grades may be omitted from the cumulative grade-point average. This average is known as the adjusted cumulative grade-point average. A student who elects to have these grades omitted should complete a form for this purpose available in the Office of Student Life and Services, Ackerson Hall 110, Newark, or at 1 Richardson Street, New Brunswick. This must be done by the end of the second term of the first year.

### Dean's List

At the end of each term, the dean's office compiles an honor list of students whose scholastic average for the term was 3.5 or better. Only students taking 12 or more credits are considered for the Dean's List.

### Satisfactory Grades

Progression through the curriculum is based on satisfactory completion of required nursing courses and prerequisite courses. Satisfactory achievement is interpreted by Rutgers, The State University of New Jersey, as a grade of *C* (2.0) or better. A grade of *D* or *F* in required nursing courses or prerequisite courses will not be accepted as meeting the requirements for graduation from the College of Nursing. If a grade of *D* or *F* is received, the student may only repeat the course once to obtain a satisfactory grade.

**Completion of Prerequisite Courses.** Any course that is a prerequisite for a required nursing course must be satisfactorily completed before the first day of the term in which the required course is offered. Grades of *TD*, *TF*, *TNC*, *TU*, and *TX* are not considered satisfactory completion of a prerequisite. All first-year and sophomore-level required courses must be taken prior to enrollment in junior-level courses except for electives.

### Unsatisfactory Academic Performance

**Scholastic Review.** The Scholastic Standing Committee of the faculty reviews, monitors, and takes action on the records of students in academic difficulty each term (fall, spring, and summer). Based on the committee's findings, students may be placed on probation or dismissed from the college. Students receiving a failure in any prerequisite course for any nursing course shall not progress in the nursing curriculum until the prerequisite is completed satisfactorily.

**Academic Probation.** The following academic deficiencies shall result in academic probation:

1. One failure (*D* or *F*) in any upper-division nursing course.
2. Two grades of *D* or any combination of *D* or *F* in lower division nursing and/or supportive science courses.
3. A cumulative or term grade-point average less than:

First Year	First term	–
	Second term	1.70
Sophomore	First term	1.90
	Second term	1.95
Junior	First term	2.00
	Second term	2.00
Senior	First term	2.00
	Second term	2.00

Academic probation shall be granted for no more than two terms during a student's academic program.

Students placed on academic probation are notified by letter and are required to make an appointment to meet with their faculty adviser to develop a course of action to improve their academic standing. The faculty adviser's recommendations may include a limitation of extracurricular activities, the number of credit hours carried, and/or on the content of the student's program of study.

**Academic Dismissal.** A student must achieve a cumulative grade-point average of 2.0 or better to graduate.

The following academic deficiencies define the criteria that result in academic dismissal:

1. A cumulative or term grade-point average of less than 2.0 at the end of the second term of academic probation.
2. A second grade of *D* or *F* in the same required upper-division nursing course when repeated.
3. Two grades of *D* or *F* or a combination of these grades in any two upper-division nursing courses.
4. A second withdrawal in the same natural science and/or 705 nursing course.

No student is dismissed for academic reasons at the end of their first term.

The Scholastic Standing Committee is charged with interpreting and applying the criteria for dismissal in the cases of individual students; their decision constitutes the final authority in these matters.

A student dismissed by the Scholastic Standing Committee for academic reasons may apply for reentry to the college. An application for readmission of a student previously dismissed from the college will be considered only after one year has elapsed from the time of dismissal. To be considered for reentry, the applicant is expected to submit additional evidence of ability to do satisfactory academic work by completing 12 to 15 credits at an accredited four year institution or at another academic unit of Rutgers, The State University of New Jersey, with a minimum grade of *B* in each course.

**Appeal Procedure.** Students dismissed from the College of Nursing by the Scholastic Standing Committee may request in writing an opportunity to appeal to the committee. Requests for an appeal may be initiated based on technical error, changes in temporary grades, and/or additional information not previously available to the committee. Letters of appeal must state the reason(s) for appeal and should be accompanied by appropriate documentation. The decision of the committee is final. Students will be notified in writing within three weeks of the initiation of their request for appeal.

The appeal from academic dismissal should proceed as follows:

1. The student is to make arrangements to discuss the dismissal with his or her faculty adviser.
2. The student is to prepare a letter that details the basis for the appeal and includes evidence of the meeting held with the faculty adviser. The letter of appeal is to be sent to the Scholastic Standing Committee, c/o Administrative Assistant—Office of Student Life and Services, College of Nursing, Rutgers, The State University of New Jersey, 180 University Avenue, Newark, NJ 07102.
3. Other supportive material that may be relevant to the appeal process may be submitted with the letter.

An error of omission on the part of the College of Nursing is not sufficient grounds for readmitting a student on appeal if satisfactory progress toward the degree has not been made.

## LEAVE OF ABSENCE

Students must complete a Leave of Absence form available from the Office of Student Life and Services. The form must be submitted to the associate dean for student life and services, who will decide prior to the beginning of the term of the intended leave if the leave is granted.

## TIME-LIMIT DEGREES

The time limit for completion of degree requirements is seven years. Two additional terms, one term at a time, may be added with the permission of the Scholastic Standing Committee.

## CLASS SCHEDULES AND HOURS

Starting and closing dates for each term, scheduled holidays, and other important scheduling information can be found in the academic calendar.

### Attendance

Attendance at all regularly scheduled meetings of a course is expected. A student is permitted to make up any regular part of a course, including required exercises and final examinations, when the reasons for absences are authenticated by the dean for student life and services. The recognized grounds for absences are: illness requiring medical attention, curricular or extracurricular activities approved by the faculty, personal obligations claimed by the student and recognized as valid, recognized religious holidays, and severe inclement weather causing dangerous traveling conditions.

The president of the university or an official appointed by the president is authorized to cancel classes at the university, or any part thereof, in the event that weather conditions so dictate.

### Student Absence from College of Nursing Nonclinical Courses

Attendance at all regularly scheduled meetings of a course is expected. Faculty will keep a record of attendance for all nursing courses. Two absences from any class results in the faculty notifying the Office of Student Life and Services, and an official warning to the student.

A student is permitted to make up required exercises and examinations missed as a result of absences when the absences result from approved reasons and are authenticated by the associate dean for student life and services. After the associate dean for student life and services has evaluated the reason for absence, faculty receive a completed absence form.

The approved reasons for absences are: illness requiring medical attention; curricular or extracurricular activities approved by the faculty; death in the family; recognized religious holidays; and severe, inclement weather causing dangerous traveling conditions. Planned absence from class also is permitted at the discretion of the instructor and the associate dean for student life and services. The student should submit a written "Request for Permission to be Absent from Class or Clinical Practice" (form available from

the Office of Student Life and Services) no less than one week and preferably two or three weeks prior to the planned absence. The original copy is filed in the student's folder, a copy returned to the instructor, and the student notified of action taken by the associate dean for student life and services.

### **Student Absences from College of Nursing Clinical Courses**

Attendance at all regularly scheduled meetings of a course is expected. Absence from scheduled clinical experience must be negotiated between student and instructor. Students should meet with the individual instructor to plan for a makeup assignment as soon as possible after absence. The nature of makeup assignments is at the discretion of the instructor.

A record of absences from clinical experience is kept and a total reported on the student's evaluation at the end of the course. However, absences from clinical experience of more than two days are reported to the associate dean for student life and services immediately so that a course of action may be planned and implemented.

Students must notify the instructor and/or agency in which they are receiving clinical experience if absence from the clinical area is required.

Planned absence from class is permitted at the discretion of the instructor and the associate dean for student life and services. The student should submit a written "Request for Permission to be Absent from Class or Clinical Practice" (form available from the Office of Student Life and Services) two or three weeks prior to the planned absence. The original copy is filed in the student's folder, a copy returned to the instructor, and the student notified of action taken by the associate dean for student life and services.

### **Absence Due to Religious Observance**

It is the policy of the university to excuse without penalty students who are absent because of religious observances and to allow the makeup of work missed because of such absence. Examinations and special required out-of-class activities will ordinarily not be scheduled on those days when such students refrain from participating in secular activities. A student absent from an examination because of a required religious observance will be given an opportunity to make up the examination without penalty.

### **Examinations**

Regularly scheduled examinations generally are announced at the beginning of the term. Unannounced examinations may be given at irregular intervals at the discretion of the instructor.

Final examinations are held at the close of each term. A student who misses a final examination for a valid reason may ask the instructor for a deferred examination. If the student is denied permission to take a deferred examination, this decision can be appealed to the course leader, and finally, to the associate dean for student life and services.

Deferred examinations from the fall term must be taken within two weeks before the beginning of the spring term. Deferred examinations from the spring term must be taken within two weeks after the close of the spring term. In case of extreme hardship, the time may be extended for a strictly limited period with written permission of the associate dean for student life and services.

## **PRECLINICAL STUDENT HEALTH ASSESSMENT**

Students in the college are required to have a health assessment completed upon admission to the college and before beginning any patient care. The complete initial physical examination must include certification of all required immunizations and a tuberculin test. Thereafter, a yearly tuberculin test is required. Students are not permitted to proceed with clinical experiences until they have met these requirements. Verification of the health assessment should be submitted to the Medical Director, Hurtado Health Center, Rutgers, The State University of New Jersey, 11 Bishop Place, New Brunswick, NJ 08901-1180.

### **CPR CERTIFICATION**

Certification in cardiopulmonary resuscitation (CPR) is required prior to beginning the clinical experience. Thereafter, yearly recertification is required. A student may become CPR certified at a local hospital, rescue squad, or the American Heart Association for a nominal fee. A letter from the instructor indicating a "pass" or a current CPR card are valid proof of status.

### **STUDENT DRESS CODE**

The profession of nursing dictates that its practitioners visibly project a professional image, which requires that all members be neat and impeccable at all times. The College of Nursing students have consistently been examples of professionalism. The faculty and students wish to maintain this reputation by requiring adherence to the professional standards.

Conformance with the College of Nursing's professional dress code is the responsibility of both the faculty and the student. The faculty will be the ultimate judge of the students' compliance with the guidelines. Faculty are authorized to dismiss students from the clinical area until the offense is corrected. Repeated violations must be reported to the associate dean for student life and services and may result in withdrawal from the clinical rotation.

#### **Uniform Code**

##### ***Female***

The official uniform consists of regulation white slacks or skirt and red regulation knit shirt with the official College of Nursing logo embroidered in white on the left sleeve. The official red knit shirt with the logo cannot be substituted. Skirt hem should be below knee but no longer than midcalf. The regulation uniform jacket must have shoulder pads in place, cuffs rolled up to just above the wrists, and the logo patch on the left sleeve. The name pin is to be worn on the front left side of the jacket. When the jacket is not worn, the name pin should be on the front left side of the red shirt. White stockings (or socks if slacks are worn) must be worn.

## **Male**

The official uniform consists of regulation white slacks, and regulation red knit shirt with the College of Nursing logo embroidered in white on the left sleeve. The white uniform jacket without shoulder pads but with the College of Nursing logo patch appropriately sewn on the left sleeve may be worn. The name pin must be worn on the front left side of the jacket. When the jacket is not worn, the name pin is to be placed on the front left side of the red shirt.

## **Registered Nurses**

Registered nurse students must wear clean and professional-looking white uniforms, white uniform shoes, and white stockings. The uniform must have a Rutgers College of Nursing logo patch sewn on the left sleeve. Registered nurses are required to wear the official white uniform jacket with shoulder pads and the logo patch professionally sewn on the left sleeve.

## **Community Nursing Practice**

All students, including registered nurses, must wear navy blue slacks or skirts, plain white tailored blouses or shirts, and professional business shoes (dark in color) with neutral-colored hosiery. Only navy blue or black sweaters may be worn. Denim material is not permitted.

## **Name Pins**

The official Rutgers College of Nursing red and white identification name pin must be worn at all times.

## **Hair**

Hair must be above the collar, either short or securely fastened with a plain barrette. Hair must be neat and clean. Men must be clean-shaven or have a neatly trimmed beard and/or moustache.

## **Jewelry**

Jewelry should be minimal; i.e., a wedding or plain-band ring, small post earrings, and a watch with a second hand.

## **Shoes**

Shoes must be white of uniform type and kept cleaned and polished. Shoe laces must be clean. Sneakers or clogs are not permitted.

## **Miscellaneous**

A stethoscope, bandage scissors, and goggles are required for students. Laboratory coats are required for microbiology lab. They are strongly recommended for chemistry, anatomy, and physiology labs.

## **Uniform Code Exceptions**

In some psychiatric and pediatric settings, uniforms may not be worn. Students must abide by agency policy. Appropriate attire for these rotations include:

- professional-looking street clothes,
- no denim or sweatshirt-like materials,
- no high heel shoes.

# **COMMUNICABLE DISEASE POLICY**

The faculty believes that all professional nurses have a responsibility to provide care to any person regardless of their state of health or illness. Consequently, Rutgers' College of Nursing students may be assigned to care for patients with AIDS or other communicable diseases as a part of their learning experience.

## **Guidelines**

The purpose of these guidelines is to protect persons from communicable disease. The means to accomplish this are specified by the Centers for Disease Control (CDC).

**The Use of Universal Precautions.** Universal blood and body-fluid precautions must be used in all patient-care situations (refer to CDC guidelines).

**Accidental Needle Stick.** Students who receive an accidental needle stick must follow the clinical agency's protocol and are advised to submit to anonymous testing immediately, with follow-up, according to the policies of Student Health Services of Rutgers, The State University of New Jersey. The fee for the emergency room service is billed to the student's health insurance company. All incidents of needle stick must be reported in writing to the associate dean for student life and services.

**Students Who Test Positive for a Communicable Disease.** Students who test positive for or are exposed to a reportable communicable disease should report these findings to the associate dean for student life and services. Those students who test positive for communicable disease are encouraged to use existing support services.

**Students Who Request Assignment to a Client with a Communicable Disease.** Students whose request for an appropriate and available clinical experience caring for a patient with AIDS or other communicable disease is not met by the instructor are directed to follow the usual procedure for redress of faculty decisions.

**Other Concerns.** All other concerns that faculty, administrators, or students have should be resolved according to CDC guidelines or referred to the associate dean for student life and services.

**Exceptions.** Exceptions to this policy are granted only in situations where the health and/or confidentiality of a person is threatened or violated.

# **LIBRARY AND LEARNING RESOURCE CENTERS MATERIAL**

All library material and Learning Resource Centers/Computer Laboratories material or equipment must be returned at the end of each term. Failure to comply will prevent a student from registering or obtaining a transcript. Students must pay for all damaged or lost equipment.



# Academic Program

## PHILOSOPHY

The faculty has a set of beliefs regarding the metaparadigm concepts of the discipline: humans, the environment, health, and nursing. These beliefs, as well as those regarding the learning process, provide the underpinnings of the organizing framework for the undergraduate curriculum.

Humans are holistic beings whose totality is expressed through biological, psychological, sociocultural, economic, and spiritual dimensions. As sentient, thinking, and acting beings, humans manifest changing patterns and behaviors over the life span. Humans function in society as members of families, groups, and communities and are in constant interaction with their environment. The environment is characterized by physical, social, cultural, economic, and political dimensions that manifest changing patterns.

Health is a dynamic, evolving pattern that is an expression of the constant interaction between humans and their environment. This pattern is a unitary process manifested in varying levels of wellness and illness. As such, health is subject to the individual's perception as well as sociocultural norms, both of which are value based.

Nursing is a science and an art that is committed to promoting, maintaining, and restoring the health of humans within the context of their environment and life span. Nursing's unique perspective of humans, their environment, and health provides the foundation for the continuing development of nursing science. Nursing translates its body of knowledge into creative, therapeutic modalities of care in a variety of settings with culturally diverse populations.

Health care should be humanistic, accessible, affordable, and accountable to the changing health demands of society. Health care services require a comprehensive and coordinated interdisciplinary approach. Nurses function independently and collaboratively in a variety of roles and function with other health care providers in a wide array of human service organizations and independent practice settings.

Learning is the acquisition of knowledge, skills, values, and beliefs that result in change. Learning occurs through a process of inquiry and experience and is based on previous learning. Self-motivation, self-awareness, and open communication are intrinsic to the learning process. A conceptual approach to learning enables students to organize large amounts of data and to interpret information in meaningful ways.

Baccalaureate education in nursing provides a broad knowledge base in the science and art of nursing and builds on a liberal arts and science foundation. It provides professional socialization through interactions with clients, peers, teachers, and professional role models. Students are prepared as generalists for entry-level practice in a variety of health care settings. The graduate possesses values, a broad range of knowledge, clinical reasoning skills, and leadership abilities that provide a solid base for personal and professional growth, as well as advanced education in nursing.

## ORGANIZING FRAMEWORK

The baccalaureate curriculum is organized around themes derived from the metaparadigm concepts of humans, environment, health, and nursing and the beliefs about learning that are described in the College of Nursing philosophy.

The curriculum is divided into the lower division, comprising the first-year and sophomore levels, in which general education and nursing support courses are taken, and the upper division, comprising the junior and senior years. The lower-division general education courses help students obtain a broad foundation on which to build knowledge and skills relevant to nursing. In addition, the courses provide a framework from which the student can view the concepts of humans and environment from various disciplinary perspectives.

The upper division, comprising the junior and senior years, includes levels I, II, III, and IV, in which nursing major courses and electives are taken.

## OBJECTIVES

The baccalaureate program in nursing prepares students to:

1. Synthesize knowledge from nursing, humanities, and biobehavioral sciences as a basis for professional nursing practice.
2. Use clinical reasoning to promote, maintain, and restore optimal health of humans across the life span.
3. Communicate effectively with clients, peers, and health care providers.
4. Implement the nursing roles of care provider, manager, and member of a profession to promote quality health care.
5. Analyze research findings for application to nursing practice.
6. Demonstrate commitment to a personal and professional nursing values system.
7. Practice nursing with cultural sensitivity for diverse population groups.
8. Pursue advanced education in nursing.

## HONORS PROGRAM

The Honors Program enhances the exceptional student's opportunities for professional nursing, research, and the development of advanced practice skills and scholarship in nursing. The overall goal of the program is the development of the individual student's critical and analytical abilities.

The Honors Program is open to students who have demonstrated excellence in their studies. The associate dean for academic affairs and the adviser for the Honors Program are invited to nominate students whose academic achievement and motivation qualify them as candidates. A cumulative grade-point average of 3.8 (or top 10 percent of class) must be maintained.

Merit Scholars automatically enter the Honors Program in their first year at the college. Transfer students with excellent records at other colleges are invited to participate in the Honors Program, which is sufficiently flexible to permit well-motivated students to complete the requirements.



## MINOR PROGRAM

Students may choose, if they wish, to complete a minor in an approved subject area offered at another college within the university. Minor programs are not required for graduation. In general, a minor consists of 18 to 21 credits of course work in a discipline, but more specific requirements may be imposed by the sponsoring department or program area.

For details, students should consult the chairperson of the department in which they desire to minor and the College of Nursing Office of Student Life and Services.

## CURRICULUM

An overview of the nursing curriculum or sequence of courses follow:

### Newark

#### First Year

21&62:160:108	Organic Biochemistry	3
21&62:160:110	World of Chemistry Laboratory	1
21&62:160:113	General Chemistry Laboratory	1
21&62:160:115	General Chemistry	3
21&62:350:101-102	English Composition	6
25:705:101	Academic and Professional Development Seminar	1
25:705:223	Trends in Health Care Delivery	3
21&62:920:201	Introduction to Sociology	3
	history/political science/economics electives	6
	anthropology/cultural studies elective	3
	elective	3
	<i>Total Credits</i>	<u>33</u>

#### Second Year

21&62:120:235	Microbiology	3
21&62:120:241-242	Anatomy and Physiology I,II	8
25:520:255	Nutrition	3
25:705:202	Cultural Dimensions of Humans and Their Environment	3
25:705:229	Life Span: A Holistic Approach	3
25:705:233	Human Interactive Processes	3
	descriptive/inferential statistics*	3
	humanities elective	3
	literature elective	3
	<i>Total Credits</i>	<u>32</u>

#### Third Year

25:705:303,304	Nursing Process I,II	8
25:705:345,346	Nursing Intervention I,II	12
25:705:375,376	Humans and Their Environment I,II	8
25:705:390	Research Process in Nursing	3
	<i>Total Credits</i>	<u>31</u>

#### Fourth Year

25:705:435,436	Nursing Intervention III,IV	12
25:705:437,438	Humans and Their Environment III,IV	8
25:705:439	Nursing Process III	4
	electives	6
	<i>Total Credits</i>	<u>30</u>

*Total credits required for degree: 126*

## New Brunswick

### First Year

01:160:128	Chemistry of Life	3
01:160:161	General Chemistry	4
01:160:171	Introduction to Experimentation	1
01:355:101-102	Expository Writing I,II	6
25:705:101	Academic and Professional Development Seminar	1
25:705:223	Trends in Health Care Delivery	3
01:920:101	Introduction to Sociology	3
	anthropology/cultural studies elective	3
	humanities elective	3
	general electives	6
	<i>Total Credits</i>	<u>33</u>

### Second Year

01:119:127-128	Anatomy and Physiology: Health Sciences	8
01:119:132	Microbiology for the Health Sciences	4
25:705:202	Cultural Dimensions of Humans and Their Environment	3
25:705:229	Life Span: A Holistic Approach	3
25:705:233	Human Interactive Processes	3
11:709:275	Nutrition or 11:709:255	3
	Nutrition and Health	3
	history/political science/economics electives	6
	descriptive/inferential statistics*	3
	<i>Total Credits</i>	<u>33</u>

### Third Year

Third-year courses are identical to those listed for Newark and total 31 credits.

### Fourth Year

Fourth-year courses are identical to those listed for Newark, except one 3-credit elective must be earned in a course in literature, and total 30 credits.

*Total credits required for degree: 127*

## GRADUATE COURSES

Senior students who have an undergraduate grade-point average of at least 3.0 may choose to take graduate-level courses as electives. Students should consult their academic adviser for course selection prior to registering. Students who graduate with a 3.2 undergraduate grade-point average from Rutgers' College of Nursing may have the Graduate Record Examination requirement waived for admission into the graduate program if application to the graduate program occurs within one year after baccalaureate graduation.

\* A number of courses satisfy this requirement. Consult your adviser.

# Degree Requirements Courses

The Bachelor of Science degree in nursing is awarded by the university upon recommendation of the faculty of the College of Nursing. Recommendation depends upon fulfillment of the following requirements:

1. Completion of the prescribed curriculum within seven years (two extra terms, one term at a time, may be added by special permission of the Scholastic Standing Committee).
2. A minimum cumulative grade-point average in all courses of 2.0.
3. Completion at the university of 30 of the last 42 credits toward the degree.
4. Completion of required senior-level and 705 courses at the College of Nursing.

It is the responsibility of each student to make certain that all the graduation requirements of the college have been fully met well before each graduation date.

## GRADUATION

Degrees are conferred and diplomas issued only at the annual commencement each May. A student who completes degree requirements at another time during the academic year may request an interim certificate for use in lieu of the diploma until the next commencement exercise. Requests for interim certificates should be made to the registrar.

Diploma information cards are distributed by the staff in the Office of Student Life and Services to all degree candidates. For timely graduation, the cards must be returned to the staff for submission to the Office of the Registrar by the date specified.

Degrees are conferred in absentia only if the candidate has been excused in advance from attendance at commencement exercises. Requests to be excused should be sent to the registrar as early as possible, and candidates should indicate the address to which the diploma should be sent when it is mailed in July.

### Graduation with Honors

Students whose cumulative grade-point average is 3.5 or better for their four years of college receive one of the following honors designations on their diploma. (Only courses completed in the university may be counted in the average, and at least 60 Rutgers credits are necessary to qualify.)

- 3.85 or better = highest honors
- 3.70–3.84 = high honors
- 3.50–3.69 = honors

## COURSE INFORMATION

### Explanation of Three-Part Course Numbers

The number preceding each course title is divided into three parts. The first two digits are the administrative code (standing for a faculty or a school), the next three digits are the subject code, and the final three digits are the course code.

#### *Administrative Codes*

The following administrative codes are used for the divisions of Rutgers in this catalog. Administrative codes comprise the first two digits in all course numbers.

- 01 Faculty of Arts and Sciences–New Brunswick
- 11 Cook College–New Brunswick
- 21 Newark College of Arts and Sciences
- 22 Graduate School of Management
- 23 School of Law–Newark
- 25 College of Nursing
- 26 Graduate School–Newark
- 27 School of Criminal Justice
- 29 Faculty of Management
- 62 University College–Newark

#### *Subject Codes*

A subject code indicates the subject matter of the course. Subject codes comprise the third through fifth digits in all course numbers. The subject code for nursing is 705.

#### *Course Codes*

The last three digits distinguish one course from another and also indicate the educational level of the course. Course codes from 100 to 299 are used for introductory and intermediate courses; 300 to 499 are used for advanced undergraduate courses, some of which may be taken by graduate students toward an advanced degree. Graduate courses carrying codes from 500 to 799 are described in the graduate catalogs of the university.

Two course codes separated by a comma indicate that each term course may be taken independently of the other. Two course codes separated by a hyphen (21&62:120:241-242) indicate that satisfactory completion of the first term course is a prerequisite to the second term; the first term may be taken for credit without the second, except if a statement is added to indicate that both term courses must be completed in order to receive credit.

Credits awarded for the successful completion of each course are indicated in parentheses following the course title. The notation *N* preceding the number of credits indicates that the course may not be used to satisfy degree requirements. The notation *BA* indicates that the number of credits is determined by arrangement with the department offering the course.

## FIRST- AND SECOND-YEAR COURSES

### Newark and New Brunswick

#### 25:705:101. ACADEMIC AND PROFESSIONAL DEVELOPMENT SEMINAR (1)

*Required of first-year students.*

Provides opportunity for students to learn and adopt methods to promote their success in college, both academically and personally. Focus on development of practical knowledge and skills to assist student in meeting this goal.

#### 25:705:202. CULTURAL DIMENSIONS OF HUMANS AND THEIR ENVIRONMENT (3)

Introduces the richness and uniqueness of the patterns of diverse cultural groups; emphasis is placed on the commonalities and differences among persons of various cultural backgrounds.

#### 25:705:223. TRENDS IN HEALTH CARE DELIVERY (3)

Current methods of health care, how they evolve, and directions for the future. Health, social, and legislative issues influencing the providers and consumers of services are examined.

#### 25:705:229. LIFE SPAN: A HOLISTIC APPROACH (3)

Provides a unified approach to the study of humankind. Patterns of growth and development of individuals, starting with conception, are explored. The aging process as a continuous biopsychosocial phenomenon throughout the life span is examined.

#### 25:705:233. HUMAN INTERACTIVE PROCESSES (3)

*Pre- or corequisite: 21&62:920:201 or 01:920:101.*

Overview of general communications theory including components of communication, specific blocks, and selective aspects such as frustration, anxiety, and conflict. Theory applied in a small group situation. Emphasis on development of therapeutic communication.

#### 25:520:255. NUTRITION (3)

*Recommended: Knowledge of chemistry.*

Study of essential nutrients and their functions. Application of nutrition principles to food selection for individuals and families, for modified diets, and for public health problems.

#### 11:709:255. NUTRITION AND HEALTH (3)

An introductory nutrition course.

#### 11:709:275. HUMAN NUTRITION (3)

*Prerequisite: 01:160:128 or 161 or 01:119:101.*

A study of essential nutrients and their functions in the human body.

#### DESCRIPTIVE/INFERENTIAL STATISTICS

A number of courses are available that satisfy this requirement. Consult your adviser for the appropriate choice.

## THIRD-YEAR COURSES

#### 25:705:303. NURSING PROCESS I (4)

*Prerequisites: 01:119:127-128 or 21&62:120:241-242; 01:119:132 or 21&62:120:235; 01:160:128, 161, 171 or 21&62:160:108, 110, 113, 115; 11:709:255 or 11:709:275 or 25:520:255; 25:705:229, 233; required course in descriptive/inferential statistics. Corequisites: 25:705:345, 375, 390.*

Focuses on health assessment of well individuals and families. Clinical reasoning process used in simulated settings to assess health patterns and develop diagnoses of health assets and actual and potential health problems.

#### 25:705:304. NURSING PROCESS II (4)

*Prerequisites: 25:705:303, 345, 375, 390. Corequisites: 25:705:346, 376.*

Case studies and seminars used to develop proficiency in the use of the clinical reasoning process to restore health in individuals with acute health problems across the life span. Care provider and professional nursing roles emphasized. Relevant psychomotor skills practiced in the laboratory.

#### 25:705:345. NURSING INTERVENTION I (6)

*Prerequisites: 01:119:127-128 or 21&62:120:241-242; 01:119:132 or 21&62:120:235; 01:160:128, 161, 171 or 21&62:160:108, 110, 113, 115; 11:709:255 or 11:709:275 or 25:520:255; 25:705:229, 233; required course in descriptive/inferential statistics. Corequisites: 25:705:303, 375, 390.*

A clinical nursing course that focuses on application of the clinical reasoning process to promote the health of individuals and their families across the life span and promote and maintain health during the childbearing process. The care-provider nursing role is practiced in a variety of settings.

#### 25:705:346. NURSING INTERVENTION II (6)

*Prerequisites: 25:705:303, 345, 375, 390. Corequisites: 25:705:304, 376.*

Clinical reasoning process applied in providing care to individuals with acute health problems across the life span. Health restoration emphasized. Students are assigned to an adult acute care setting and an acute child or mental health setting.

#### 25:705:375. HUMANS AND THEIR ENVIRONMENT I (4)

*Prerequisites: 01:119:127-128 or 21&62:120:241-242; 01:119:132 or 21&62:120:235; 01:160:128, 161, 171 or 21&62:160:108, 110, 113, 115; 11:709:255 or 11:709:275 or 25:520:255; 25:705:229, 233; required course in descriptive/inferential statistics. Corequisites: 25:705:303, 345, 390.*

Theoretical course that focuses on health and wellness for individuals and families and the nurse's role in health promotion and maintenance across the life span. Concepts related to individual and family health and health promotion and maintenance during the childbearing process are explored.

#### 25:705:376. HUMANS AND THEIR ENVIRONMENT II (4)

*Prerequisites: 25:705:303, 345, 375, 390. Corequisites: 25:705:304, 346.*

Course focuses on analysis of health patterns of individuals with acute health problems. The theoretical foundation needed to support the nursing goal of health restoration for individuals across the life span is emphasized.

#### 25:705:390. RESEARCH PROCESS IN NURSING (3)

*Prerequisite: Required course in descriptive/inferential statistics.*

Introduction to research and its application to the field of nursing; includes the research process, theory development, philosophies related to the inquiry process, and research methodologies as they relate to the clinical setting. Analysis of current research in light of its relevance to clinical practice or the development of nursing theory.

## FOURTH-YEAR COURSES

#### 25:705:435. NURSING INTERVENTION III (6)

*Prerequisites: 25:705:304, 346, 376. Corequisites: 25:705:437, 439.*

Clinical reasoning process used to provide care to individuals, families, groups, and communities with chronic health problems. Health promotion, maintenance, and restoration are emphasized.

#### 25:705:436. NURSING INTERVENTION IV (6)

*Prerequisites: 25:705:435, 437, 439. Corequisite: 25:705:438.*

Clinical course that focuses on role implementation with emphasis on management and professional roles. Theoretical content from health care applied to health care organizations as clients.

#### 25:705:437. HUMANS AND THEIR ENVIRONMENT III (4)

*Prerequisites: 25:705:304, 346, 376. Corequisites: 25:705:435, 439.*

Course focuses on analysis of health patterns of humans with chronic health problems. The theoretical foundation needed to support the nursing goals of health promotion, health maintenance, and health restoration for individuals, families, groups, and communities is emphasized.

#### 25:705:438. HUMANS AND THEIR ENVIRONMENT IV (4)

*Prerequisites: 25:705:435, 437, 439. Corequisite: 25:705:436.*

Focuses on the theoretical foundations for implementing nursing's care-provider, management, and professional roles to promote, maintain, and restore the health of humans. Conceptualizing health-care organizations as clients, and nursing's role in delivering and managing care in such organizations is emphasized.

### **25:705:439. NURSING PROCESS III (4)**

*Prerequisites: 25:705:304, 346, 376. Corequisites: 25:705:435, 437.*

Case studies and seminars are used to develop proficiency in the use of the clinical reasoning process to promote, maintain, and restore health in humans with chronic health problems across the life span. Care provider, health care coordinator, and professional nursing roles are emphasized.

### **25:705:440. NURSING INTERVENTION IN THE COMMUNITY (3)**

*Prerequisites: 25:705:304, 346, 376. Corequisites: 25:705:437, 439.*

The clinical reasoning process is used to provide care to individuals, families, groups, and communities with health problems in the community. Health promotion, maintenance, and restoration are emphasized.

## **NURSING ELECTIVES**

### **25:705:400. INDEPENDENT STUDY (BA)**

*Open only to junior and senior nursing students, and others by special permission.*

Opportunity for independent study in nursing in an area of interest to be carried out under the supervision of an instructor and approval of the assistant dean for the undergraduate program. Students must arrange for a project supervisor within the College of Nursing prior to registering for the course.

### **25:705:404. HUMAN SEXUALITY (1)**

*Prerequisite: Completion of Level III courses. Scheduled for one week during the hours of 9 A.M. to 5 P.M. at the University of Medicine and Dentistry of New Jersey—Robert Wood Johnson Medical School (Piscataway).*

Presentations include factual information on the emotions, ideas, philosophy, and interpersonal relationships of human sexuality, helping students to become more aware of their own anxieties, insecurities, partialities, and prejudices and to become more sensitive to these factors in others. Half of this course is devoted to lectures and movies and the other half to small-group discussions.

### **25:705:450. NURSING TOPICS (3)**

Offers the opportunity to explore a specific area in depth. Recent topics include exploration of loss, computers in nursing, pharmacology, and health care of the aged. Theories and specialized knowledge are the foundation of the course.

### **25:705:490. NURSING INFORMATICS (3)**

Focus on the analysis and development of computer programs for nursing. Topics include computer systems, information systems, computer-based education, decision making with computers, and artificial intelligence. Development of computer literacy skills and computer applications in nursing practice.

### **25:705:495,496. HONORS PROJECT (BA,BA)**

*Open only to junior and senior nursing students with an undergraduate cumulative grade-point average of 3.8 or higher.*

Introduces research concepts, theory, and data management. Student works with one faculty member. Bridge course for those students intending to pursue graduate study in nursing.

## **NEWARK COLLEGE OF ARTS AND SCIENCES COURSES**

College of Nursing students should note that many of the required and elective courses are taken at the Newark College of Arts and Sciences, and that school's catalog section should be reviewed before selecting courses. NCAS courses *required* for nursing students follow:

### **21&62:120:235. MICROBIOLOGY (3)**

*Pre- or corequisites: 21&62:160:110 and 113 or 21&62:120:241-242.*

Fundamentals of microbiology, including the distinguishing characteristics of the various groups of microbial cells; microbial control, including physical and chemical agents and chemotherapeutic agents; applications in personal and public health and in industry; mechanisms of disease production and host resistance; prevention and control of disease.

### **21&62:120:241-242. ANATOMY AND PHYSIOLOGY I,II (4,4)**

*Lec. 2 hrs., lab. 3 hrs. Prerequisite: Open to College of Nursing students. Also open to NCAS students who have completed 21&62:120:101-102 with a grade of C or better. May not be used for credit toward the biology or zoology major.*

Examination of human body in which structure and function are integrated; the major organ systems (circulation, respiration, digestion); microscopic anatomy and biochemical aspects of physiology.

### **21&62:160:108. ORGANIC BIOCHEMISTRY (3)**

Basic organic chemistry with emphasis on the molecules and reactions encountered in biochemistry; proteins, carbohydrates, lipids, enzymes; some discussion of metabolic cycles.

### **21&62:160:110. WORLD OF CHEMISTRY LABORATORY (1)**

*Lab. 3 hrs. For laboratory science requirement.*

A basic laboratory in chemistry, which may be elected to accompany 21&62:160:102 or 108.

### **21&62:160:113. GENERAL CHEMISTRY LABORATORY (1)**

*Lab. 3 hrs. No credit given for this course without the successful completion of 21&62:160:115.*

General chemistry laboratory for science majors. Emphasis on some of the principles of quantitative and qualitative chemical analysis.

### **21&62:160:115. GENERAL CHEMISTRY (3)**

*Lec. 2 hrs., rec. 1 hr. Prerequisite: One year of high school chemistry.*

*Corequisite: 21&62:160:113. Designed for science majors. Credit will not be given for the course without the successful completion of 21&62:160:113.*

Introduction to the fundamental principles of chemistry.

### **21&62:350:101-102. ENGLISH COMPOSITION (3,3)**

*Open to students on the basis of placement test only.*

Training in acceptable reading, writing, speaking, and listening; analysis of reading in various fields; constant practice in writing and discussion; frequent conferences with the instructor.

### **21&62:920:201. INTRODUCTION TO SOCIOLOGY (3)**

Study of society: social structure, culture, and social interaction; the nature and historical developments of modern forms of social organization and social relationships.

## **NEW BRUNSWICK ARTS AND SCIENCES COURSES**

College of Nursing students in New Brunswick should note that many of the required and elective courses are taken at the various schools in New Brunswick and the *New Brunswick Undergraduate Catalog* should be reviewed before selecting courses. The following courses in New Brunswick are required for nursing students.

### **01:119:127-128. ANATOMY AND PHYSIOLOGY:**

#### **HEALTH SCIENCES (4,4)**

*Lec. 3 hrs., lab. 3 hrs. Corequisites: 01:119:109, 110. For nursing, pharmacy, and other professional students.*

The structure and function of human organ systems. Some microanatomy and biochemical aspects of physiology included.



# Administration and Faculty

## 01:119:132. MICROBIOLOGY FOR THE HEALTH SCIENCES (4)

Lec. 3 hrs., lab. 3 hrs. Not open to students who have taken 01:119:133, 134, or 390. Not for biological science majors. For nursing, pharmacy, and other professional students.

Introduction to microbes with emphasis on the nature and behavior of microorganisms, the interrelationships between microbes and the human host in health and disease, and the principles of prevention and control of infectious disease.

## 01:160:128. CHEMISTRY OF LIFE (3)

Does not make a sequence with 01:160:161.

Topics chosen from fields of organic chemistry and biochemistry including proteins, DNA, RNA, and chemical origins of life. Emphasis given to nature of chemical and biochemical discoveries and the social responsibility of scientists.

## 01:160:161. GENERAL CHEMISTRY (4)

Lec. 3 hrs., rec. 1 hr. Prerequisite for 161: 01:640:026 or equivalent. Pre- or corequisite for 162: 01:160:171. For science majors. Credit not given for both these courses and 01:160:163-164.

Introduction to chemical principles and their application. Topics include stoichiometry, states of matter, atomic and molecular structure, solutions, thermodynamics, equilibrium, oxidation-reduction, kinetics, nonmetals, metals and coordination compounds, and nuclear chemistry.

## 01:160:171. INTRODUCTION TO EXPERIMENTATION (1)

Lab. 3 hrs. Pre- or corequisites: 01:160:159, 161, or 163.

Laboratory illustrating basic chemical methods.  
Lab. deposit: \$20.

## 01:355:101. EXPOSITORY WRITING I (3)

The development of competence in reading, thinking, and writing through the analysis and composition of expository prose.

## 01:355:102. EXPOSITORY WRITING II (3)

Further development of competence in reading, thinking, and writing, with emphasis on the intellectual and practical skills required for the research paper.

## 01:920:101. INTRODUCTION TO SOCIOLOGY (3)

Introduction to the systematic study of society and social behavior.

## Administration

Norman Samuels, *Provost*; B.A., McGill; M.A., Ph.D., Duke  
Hurdis Margaret Ann Griffith, R.N., *Dean*; Professor; B.S.N., Jamestown College; M.N., Washington (Seattle); Ph.D., Maryland  
Noreen Cerino, R.N., *Associate Dean for Administration*; B.S.N., St. John's College; M.A., Ed.D., Columbia  
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# Liberal Arts Colleges

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# Admission to the Liberal Arts Colleges

Rutgers–Newark encourages the admission of students who are seeking an education of the highest possible quality. The liberal arts colleges in Newark, Newark College of Arts and Sciences and University College–Newark, receive applications from a wide variety of potential students. Qualified students are admitted to the college without regard to race, color, creed, national origin, sex, sexual orientation, disability or handicap, or age.

Individual inquiries about the colleges and their programs are welcomed. Tours of the campus and personal interviews may be arranged by contacting the admissions office.

## HOW TO APPLY

The Rutgers–Newark admissions office is located in Blumenthal Hall and is open Monday through Friday from 8:30 A.M. to 4:30 P.M., and Wednesday from 8:30 A.M. to 6:30 P.M. The mailing address is 249 University Avenue, Newark, NJ 07102-1896. The telephone number is 973/353-5205.

Applications for Newark College of Arts and Sciences and University College–Newark may be obtained from the admissions office by either visiting the office or by requesting an application by phone or mail. Applications also are available in New Jersey high school guidance offices and community college transfer counselor offices. Students also may download an application form from the undergraduate admissions web site [www.rutgers.edu/students/apply](http://www.rutgers.edu/students/apply) and/or apply online.

Students who wish to attend the School of Management must first apply and be accepted to either the Newark College of Arts and Sciences or University College–Newark. They also must fulfill a set of prerequisite courses. See the School of Management section for more information.

## WHEN TO APPLY

Applicants should refer to the undergraduate application packet for specific information about fall and spring application deadlines. However, it is in the applicant's best interest to file the application as early in the school year as possible. This allows the university adequate time to process the application and to give maximum consideration to all credentials. The undergraduate colleges continue to consider applications as long as space is available.

## CREDENTIALS

Applicants must submit official transcripts for all work taken in grades nine through twelve and in other colleges and universities. The secondary school record should include rank in class (if available) or a grade distribution, grades for all courses taken, a listing of courses in progress, and credit granted and anticipated.

A transfer applicant for the fall term must submit a transcript that includes fall term grades from the preceding year, if enrolled in college that term.

The following documents must be submitted with the application for admission:

1. official secondary school transcript or GED diploma and scores;
2. official transcripts of work completed at other colleges;
3. a list of courses in progress at a degree-granting institution; and
4. SAT I or ACT scores if candidate is applying for admission less than two years after graduation from high school.

The College Entrance Examination Board administers the Scholastic Assessment Tests I (SAT I). Applicants should request that the results be forwarded to Rutgers, The State University of New Jersey. Use College Board code 2765 or ACT code 2592 when requesting that reports be sent. Applicants should write directly to the College Entrance Examination Board, P.O. Box 592, Princeton, NJ 08541, for information and applications. This material also is available at high school guidance offices. Applicants are encouraged to take entrance examinations by December of their senior year.

For information on the ACT, contact the Office of Admissions.

Candidates are NOT required to take the SAT I or ACT if:

1. 12 or more college-level credits have been satisfactorily completed after high school at an accredited institution of higher education; or
2. The applicant has been out of school two or more years.

## High School Entrance Units

Candidates are expected to have satisfactorily completed sixteen academic units in grades nine through twelve, including four years of English, three years of college preparatory mathematics, two years of one foreign language, two years of science, and five other approved academic electives. Approved electives include social studies, natural sciences, foreign languages, and mathematics. The Faculty Admissions Committee, at its discretion, may accept other subjects. In some instances, individuals applying to University College–Newark may be permitted to meet unit requirements during the first year of college attendance.

## Transfer Students

A student who has earned 12 college-level credits or more at an accredited institution of higher education by the expected date of entrance at Rutgers, The State University of New Jersey, is considered a transfer student.

In addition to a completed application form, transfer applicants must submit their secondary school record and transcripts from all previous schools of higher education, including other divisions of Rutgers, regardless of the applicant's desire to receive credit for work completed.

Students currently enrolled in other institutions should submit transcripts of their work through the fall term or winter quarter. All transcripts should indicate the titles, numbers, and grades of courses completed and should be mailed directly to the admissions office at Rutgers, The State University of New Jersey, by the institution(s) concerned. Transcripts submitted to Rutgers by the applicant are not considered official.

International students should refer to *Other Admission Options* below, for information about completing an application for admission.

## OTHER ADMISSION OPTIONS

### Admission by Examination

Candidates whose preparatory courses do not meet the formal requirement of 16 academic units, who have not completed high school, or who have a diploma from a nonaccredited high school, may qualify for admission by examination. Such candidates must submit scores from SAT II as well as the SAT I or ACT required of all candidates. The three achievement tests must include English, mathematics, and a third subject of the student's choice.

### Educational Opportunity Fund Program

The Educational Opportunity Fund Program (EOF) is designed to meet the needs of educationally and financially disadvantaged students. Students who are admitted to this program possess the academic potential to enjoy a successful college career, but generally do not possess all the skills of traditionally admitted first-year students. To assist these students, the state of New Jersey provides financial support and the college offers specialized instruction in communications skills and basic mathematics, professional counseling and testing, and tutorial services, in consultation with the academic departments. For further information, contact the admissions office or the Educational Opportunity Fund Program director at Rutgers–Newark, 973/353-5604.

### High School Scholars Program

The High School Scholars Program offers academically superior high school students a unique opportunity to study either full- or part-time at a major university center. A fully matriculated high school scholar foregoes the senior year in high school and takes a normal first-year program. Upon successful completion of a year of study, the student may apply to the former high school for a resident diploma or to the State Board of Education for a high school equivalency diploma.

A part-time high school scholar is given released time by the high school to attend classes at the college for college credit. Normally, a part-time high school scholar takes one or two 3-credit courses each term. If the student decides to matriculate, the credits earned are applied toward a baccalaureate degree awarded by the Newark College of Arts and Sciences and, generally, are accepted as transfer credits to other colleges. The college offers more than one thousand courses in nineteen academic departments. Students accepted into the program are advised individually as to the appropriateness of particular courses. For more information, contact the admissions office at 973/353-5205.

### International Students

In addition to the regular application, international students must submit the Supplementary Form for International Students (available from the admissions office) and the documentation requested on that form indicating present or proposed visa status and financial support. Official records (original or certified copies) of all previous secondary and postsecondary education, as well as official English

translations of these records, are required. Students currently enrolled at a college or university in the United States also must submit a Foreign Student Adviser's report.

All international students must submit scores from the Scholastic Assessment Tests (SAT I) or American College Testing Program (ACT). Those students whose primary language is not English also must submit an official score from the Test of English as a Foreign Language (TOEFL) and/or placement information from the Rutgers Program in American Language Studies (PALS). For further information about these tests, write or call the Educational Testing Service, Princeton, NJ 08541, U.S.A.; telephone 609/921-9000.

To be eligible for a student visa, a student must be enrolled on a full-time basis in Newark College of Arts and Sciences. For further information, contact the admissions office or the Office of International Student Services, 973/353-1427.

### Nondegree Nonmatriculating Students

Individuals who do not wish to matriculate and work toward a degree may enroll in selected courses. However, admission is on a space-available basis and students may be admitted provided they have met one of the following criteria:

1. The applicant has completed an undergraduate degree. The goal of an applicant in this category is to complete requirements for graduate school or for professional advancement.
2. The applicant is a student in good standing at another institution that has given written permission, specifying the courses to be taken.

Nondegree students should complete a special application for nonmatriculated students. Details concerning application procedures and policies pertaining to nonmatriculated students may be obtained from the admissions office.

Rutgers, The State University of New Jersey, also encourages senior citizens to audit courses on a noncredit, space-available basis. New Jersey residents, aged sixty-two and over, may attend classes free of charge under this program. Those interested in attending should contact the Office of the Dean of Faculty, 973/353-5213.

## ACADEMIC CREDIT

### Admission with Associate Degree

Students admitted to Newark College of Arts and Sciences or University College–Newark with an associate in arts degree from an accredited New Jersey two-year college transfer program receive up to 65 credits earned for that degree toward the number of credits required for the bachelor's degree at Newark College of Arts and Sciences or University College–Newark. Students so admitted are subject to all general college requirements for the bachelor's degree outlined in this catalog and the major requirements stipulated by the faculty of the major department. Applicable courses transferred with the minimal passing grade may be used to satisfy the general college requirements. No more than 65 credits will be accepted from two-year colleges.

### Advanced Placement

High school seniors who have taken advanced courses may take the College Board Advanced Placement Examinations administered by the College Entrance Examination Board.

Advanced placement and/or degree credit are awarded for scores of 4 or 5; the colleges ask the appropriate academic department to evaluate scores of 3. No advanced placement or degree credit is given for grades of 1 and 2.

### College Level Examination Program

The colleges participate in the College Level Examination Program (CLEP), which is administered by the College Entrance Examination Board. Candidates for admission who have been out of school five years or more and who have not attended college may receive degree credit based on the CLEP General Examination before their admission to the university. Students may earn a maximum of 24 credits for the General Examination, providing they score at or above the fiftieth percentile. Candidates for admission are granted degree credit for CLEP Subject Examinations approved by the colleges, providing they achieve a score at or above the fiftieth percentile.

### Credit for Prior Learning

University College–Newark accepts up to 45 credits for prior learning. To earn such credit, a student must demonstrate college-level knowledge comparable to that required in a Rutgers course.

There are three methods whereby the student may obtain credit for prior learning.

1. College Level Examination Program (CLEP). Credit may be granted for the two types of CLEP tests—the CLEP General Examination and the CLEP Subject Examination.
2. Thomas Edison College Examination Program (TECEP) standardized tests.
3. Portfolio assessment, which is administered through Thomas Edison State College.

For more specific information about credit for prior learning and for information on fees, eligibility, and the level of achievement required, students should consult the Office of the Dean of Student Affairs, University College–Newark.

### Transfer Credits

Transfer credit for work done at another institution is evaluated after an applicant has been admitted to the college of his or her choice. Except in certain specific instances, credit is generally granted for courses taken at an accredited institution of higher learning, provided the student earns grades of C or better. It should be noted, however, that both Newark College of Arts and Sciences and University College–Newark accept a maximum of 12 credits in professional electives. Only in unusual and extraordinary cases may transfer credit be granted for credits earned in other colleges through proficiency examinations. The maximum number of credits accepted from a two-year college is the number of credits required to earn the A.A. degree, not to exceed 65 credits. Transfer students should note that, generally, credit will not be accepted for courses in military or aviation science, physical education activities, secretarial/office science, cooperative education, and developmental or remedial courses.

For accounting, finance, management, and marketing transfer students, upper-level courses in these subjects are not accepted for credit toward the major until a challenge examination, or, in certain cases, a validating course is passed with a grade of C or better. The maximum number of credits transferred may not exceed 94 credits from a four-year institution, 65 of which may be from a two-year college.

# Newark College of Arts and Sciences

## ABOUT THE COLLEGE

The Newark College of Arts and Sciences was founded in 1930 as a four-year liberal arts institution affiliated with the New Jersey Law School. Dana College—as it was first called—started life with a faculty of fifteen and fewer than three hundred students. Six years later and almost twice as large, Dana was renamed the Newark College of Arts and Sciences when it became the undergraduate division of the newly formed University of Newark. In 1946, the University of Newark and Rutgers University were merged to form the State University of New Jersey.

### Modern Urban Campus

In the late 1960s, the college moved to a new campus. Located in the downtown business district of Newark, the college is part of an active urban community that offers great cultural and career advantages. The college shares its campus with various other divisions of Rutgers, including the School of Management, the College of Nursing, Graduate School–Newark, Graduate School of Management, the School of Law–Newark, and the School of Criminal Justice. The college is also in close proximity to the University of Medicine and Dentistry of New Jersey and New Jersey Institute of Technology, with the resources of both institutions available to qualified students through an exchange registration program.

### Liberal Arts Tradition

From its inception, the Newark College of Arts and Sciences has prided itself on combining the best of the liberal arts tradition with excellence in professional and preprofessional training. As an undergraduate unit within Rutgers, the college draws upon the vast educational resources of one of the country's finest universities. At the same time, with a student body numbering about 3,700, the college is able to offer students the option of small classes in many fields of study, as well as the opportunity to work with faculty members on an individual basis. A College Honors Program, a Study Abroad Program, various internship programs, and the possibility of enrolling in graduate courses during senior year are among special advantages the college offers.

## DEGREE REQUIREMENTS

The Newark College of Arts and Sciences seeks to foster the broad intellectual and personal development of its students. The spirit of this philosophy is reflected in the liberal arts curriculum, which requires that all candidates for the baccalaureate degree complete courses in a variety of fields of learning. In addition, each student must select a field of knowledge for intensive study in order to gain some mastery of a particular discipline. This combination of broad-ranging



inquiry and concentrated investigation of a specific area of learning prepares the student for effective and intelligent participation in the modern world.

The college offers courses in liberal arts and sciences leading to either the Bachelor of Arts or the Bachelor of Science degree. The curricula of the college are as follows: liberal arts and sciences leading to the degree of Bachelor of Arts; combined liberal arts and business administration (graduate) leading to the degrees of Bachelor of Arts and Master of Business Administration; combined liberal arts and criminal justice (graduate) leading to the degrees of Bachelor of Arts and Master of Arts; combined liberal arts and engineering, leading to the degrees of Bachelor of Arts and Bachelor of Science; clinical laboratory sciences, leading to the degree of Bachelor of Science, conferred jointly by Rutgers and the School of Health Related Professions of the University of Medicine and Dentistry of New Jersey in Newark.

To be certified for graduation, candidates for the Bachelor of Arts or Bachelor of Science degrees must satisfy college requirements. Students are subject to the curriculum requirements in effect when they entered Newark College of Arts and Sciences or, in the case of absence for two or more terms, those requirements in effect when they return.

### Placement Examinations for Entering Students

Students with fewer than 12 college credits at the time of admission must take the New Jersey College Basic Skills Placement Test. If the student has completed 12 or more college credits at the time of admission, writing and mathematics placement tests must be taken. Based on the results of these tests, students are placed in the appropriate English and mathematics courses.

### General Curriculum Requirements

A student must successfully complete at least 124 academic credits to graduate from the Newark College of Arts and Sciences. Credits earned more than seven years before the date of graduation are not necessarily accepted in fulfillment of the requirements for graduation. Students must complete all requirements for graduation in order to participate in graduation ceremonies. Inquiries should be directed to the Office of the Dean of Student Affairs.

To ensure that every graduate has the opportunity to acquire a broad liberal arts education, the faculty has prescribed the following general curriculum requirements for all students, regardless of major field.

**English Composition.** Every student must successfully complete 21&62:350:101-102 English Composition or 21&62:350:121-122 Expository Writing (for transfer students) with grades of *C* or better; this one-year course must be taken as soon as the student is eligible according to established placement standards at the college. Students who do not fulfill this requirement may be compelled to carry a reduced credit load and to defer their probable date of graduation.

Students who perform exceptionally well in a placement examination may be permitted to take an honors course in English composition (21&62:350:103-104) in lieu of the regular composition sequence.

It should be understood that students are expected to write proper English in all courses. A student who consistently writes in an unsatisfactory manner, even though English composition has been passed, may be required to complete appropriate remedial work.

**Mathematics Proficiency.** All candidates for the Bachelor of Arts or Bachelor of Science degrees are required to demonstrate minimum proficiency in mathematics by satisfying one of the following criteria:

1. Successful completion, with a grade of *C* or better, of 21&62:640:111, 112, or 113 College Algebra or any more advanced course in mathematics offered by the Department of Mathematics and Computer Science.
2. Satisfactory performance on a proficiency examination administered by the Department of Mathematics and Computer Science.
3. Successful completion, with a grade of *C* or better, of a college level, first-term calculus course equivalent to 21&62:640:135 Calculus I, at another institution, or a grade of *B* or better in a precalculus course equivalent to 21&62:640:114 or 119.

Every student must successfully complete the mathematics proficiency requirement within one term after becoming eligible according to established placement standards at the college. This requirement must be completed satisfactorily before the student achieves senior standing. Students not meeting the deadline may be required to carry a reduced credit load and to defer their probable date of graduation.

**Foreign Language.** Students are expected to have completed two years of high school study of a foreign language prior to entering college. Students who have not fulfilled this expectation will be required to complete a one-year, elementary, sequential course (6 credits) in a foreign language offered by the Department of Classical and Modern Languages and Literatures. The department offers such courses in French, German, Greek, Hebrew, Italian, Latin, Russian, and Spanish.

**History and Literature.** Every student must successfully complete 6 credits in history offered by the Department of History and 6 credits in literature offered by the Department of English, the Department of Classical and Modern Languages and Literatures, or the Department of Afro-American and African Studies. The literature course may be taken in the original language or in translation. Successful completion of English composition is a prerequisite for enrolling in the history and literature courses. Students who choose a literature course in an original language must fulfill language prerequisites for that course as well. For information on specific courses that fulfill this requirement, consult the Office of Student Affairs.

**Natural Sciences.** Every student must successfully complete a one-year course with a laboratory in a natural science (8 credits), and 3 additional credits in either the natural sciences or mathematics. A mathematics course taken to fulfill this requirement must be at a higher level than the course taken to meet the mathematics proficiency requirement.

The laboratory science requirement is satisfied by taking one of the one-year introductory courses, with laboratory, offered in the natural sciences area. Students with specific career or major interests in scientific fields should seek academic guidance in choosing laboratory courses.

The following courses fulfill the laboratory science requirement:

- 21&62:120:101-102 General Biology
- 21&62:120:109 Basic Plant Science and 21&62:120:206-207 General Horticulture and Laboratory



- 21&62:160:101,102 World of Chemistry *and*  
21&62:160:109,110 World of  
Chemistry Laboratory
- 21&62:160:115-116 General Chemistry *and*  
21&62:160:113-114 General  
Chemistry Laboratory
- 21&62:460:103,104 Planet Earth and Laboratory *and*  
21&62:460:106,107 Environmental  
Geology and Environmental  
Geology Laboratory
- 21&62:750:203,204 General Physics I,II *and*  
21&62:750:205,206 Introductory  
Physics Laboratory
- 21&62:750:213,214 Elements of Physics *and*  
21&62:750:205,206 Introductory  
Physics Laboratory

For updated information about courses that fulfill this requirement, consult the Office of the Dean of Student Affairs.

**Social Sciences.** Every student must successfully complete a one-year sequential course (6 credits) in anthropology, economics, political science, psychology, or sociology.

The following courses fulfill the social sciences requirement:

- 21&62:014:111,112 Introduction to the Black Experience  
in Western Culture
- 21&62:070:203 Introduction to Physical Anthropology  
and Archaeology *and* 21&62:070:204  
Introduction to Cultural Anthropology
- 21&62:220:101 Introduction to Economics, Micro *and*  
21&62:220:102 Introduction to  
Economics, Macro
- 21&62:790:201 American National Government *and*  
21&62:790:202 America and the World
- 21&62:830:209 Principles of Psychology *and*  
21&62:830:323 Child Psychology *or*  
21&62:830:335 Social Psychology *or*  
21&62:830:371 Psychology of Personality
- 21&62:920:201,202 Sociology I *and* Sociology II

For updated information about courses that fulfill this requirement, contact the Office of the Dean of Student Affairs.

**The Fine Arts.** Every student must successfully complete one course (3 credits) that focuses on an aspect of the fine arts. The course may be a selected performance offering, or it may be one that reflects a historical/critical perspective on an area of the fine arts.

The following courses fulfill the fine arts requirement:

- 21&62:080:102 Design Fundamentals
- 21&62:080:103 3-D Design Fundamentals
- 21&62:080:121 Introduction to Drawing
- 21&62:080:251 Introduction to Painting
- 21&62:082:101 Art Appreciation: Arts Past
- 21&62:082:102 Art Appreciation: Arts Present
- 21&62:700:101 Introduction to Music
- 21&62:700:111 Fundamentals of Music I
- 21&62:700:237,238 Survey of Western Music
- 21&62:700:265 Jazz
- 21&62:950:289 Principles of Oral Interpretation
- 21&62:965:211 Living Theater—Introduction to Theater
- 21&62:965:256,257 The Art and History of the Film
- 21&62:965:271 Acting Fundamentals

For updated information about courses that fulfill this requirement, contact the Office of the Dean of Student Affairs.

**Interdisciplinary Study.** Every student must successfully complete one course (3 credits) that explicitly takes an interdisciplinary approach to its subject matter.

The following courses fulfill the interdisciplinary requirement:

- 21&62:014:305 Black Women in the United States
- 21&62:014:306 Comparative Race Relations: South  
Africa and the United States
- 21&62:014:389 Psychology and Values of the  
African-American
- 21&62:014:396 The Afro-American Community
- 21&62:050:306 The Vietnam War and America
- 21&62:120:208 Human Sexuality
- 21&62:190:310 Ancient Technology
- 21:190:325 Women in Antiquity
- 21:190:335,336 Ancient Law
- 21&62:190:361 Greek Civilization
- 21&62:190:363 Roman Civilization
- 21&62:350:254 Literature and Politics in the Third World
- 21&62:350:302 Writing with Computers
- 21&62:350:361,362 Women in Literature
- 21&62:350:377 Science Fiction, Technology, and Society
- 21&62:350:379 Computers and Literature
- 21&62:350:395 Nuclear War and Literature
- 21&62:420:260 Contemporary France
- 21&62:470:327 Germanic Mythology and Folklore
- 21&62:500:235,236 The World of the Bible
- 21&62:500:341 Jewish Civilization to the Roman Period
- 21&62:500:342 Jewish Civilization: Medieval  
and Modern
- 21&62:510:394 The Peoples and Cultures of  
Central Asia
- 21&62:730:105 Current Moral and Social Issues
- 21&62:730:112 Introduction to Ethics
- 21&62:730:201 Introduction to Logic
- 21&62:730:225 Philosophy of Science
- 21&62:730:251 Business and Professional Ethics
- 21&62:730:327 Philosophical Issues of Feminism
- 21&62:730:328 Political and Social Philosophy
- 21&62:730:350 Decision Theory and Ethics
- 21&62:750:202 Physics as a Liberal Art
- 21&62:840:204 Seminar on Religion and Culture
- 21&62:880:331,332 Topics in Science, Technology,  
and Society
- 21&62:940:341,342 Hispanic Civilization
- 21&62:940:383 Ibero-American Thought in  
English Translation
- 21&62:988:201,202 Introduction to Women's Studies
- 21:988:325 Politics of Sexuality
- CIS 350 (NJIT) Computers and Society

For updated information about specific courses that fulfill this requirement, contact the Office of the Dean of Student Affairs.

**Restricted Electives.** Every student must successfully complete 15 credits of electives outside his or her major. (Current and prospective students in the School of Management may not take courses offered by the School of Management to fulfill this requirement.)

Courses taken for graduation credit in education may be used as electives for purposes of this requirement.

With elective credits, students may choose to complete a minor in an approved subject offered at the college.

## Major Programs

In addition to fulfilling the general curriculum requirements, every degree candidate must select a special field of knowledge for intensive study. Students may declare a major beginning with the first term of their sophomore year; they must do so by the end of their sophomore year. The general advisers, the deans, and the staff members in the Career Development Center can all provide assistance to students who are undecided about an appropriate program to pursue. Specific information about the requirements for the various majors offered at the college is found in the chapter on program requirements.

As a general rule, a major consists of at least 30 credits of course work in a discipline, but specific requirements are set by each academic department. No course in which a grade of *D* or *F* has been earned may be counted toward completion of a major. Most majors require a minimum cumulative grade-point average of 2.0; some, such as accounting, finance, management, and marketing, require a minimum 2.5 cumulative grade-point average. Transfer students must complete at least one-half of the credits required for their major at the college.

Students interested in a particular major should consult with the appropriate department chairperson or program director concerning current requirements for the major, necessary prerequisites, and the acceptability of any transfer credits. Once a decision has been made to pursue a major, it is the student's responsibility to file a Declaration of Major form in the department that offers that major.

The following majors are offered at Newark College of Arts and Sciences. Requirements in each major are described in the Academic Programs and Courses chapters of this catalog. A Bachelor of Arts degree is conferred for all majors except accounting, clinical laboratory sciences, criminal justice, finance, geoscience engineering, management, marketing, and medical technology, for which a Bachelor of Science degree is awarded.

- 010 Accounting
- 014 Afro-American and African Studies
- 050 American Studies
- 060 Ancient Mediterranean Civilizations
- 070 Anthropology
- 080 Art\*
- 120 Biology\*
- 130 Botany
- 160 Chemistry\*
- 191 Clinical Laboratory Sciences
- 198 Computer Science
- 202 Criminal Justice
- 220 Economics\*
- 350 English\*
- 375 Environmental Sciences
- 390 Finance
- 420 French\*
- 460 Geology\*
- 465 Geoscience Engineering
- 470 German\*
- 510 History\*
- 548 Information Systems
- 558 Interdisciplinary
- 560 Italian\*
- 570 Journalism
- 620 Management
- 630 Marketing
- 640 Mathematics\*

- 642 Mathematics, Applied
- 700 Music\*
- 730 Philosophy
- 750 Physics\*
- 755 Physics, Applied
- 790 Political Science\*
- 830 Psychology
- 836 Puerto Rican Studies
- 861 Slavic\*
- 880 Science, Technology, and Society
- 910 Social Work
- 920 Sociology
- 940 Spanish\*
- 965 Theater Arts and Television
- 988 Women's Studies
- 990 Zoology and Physiology

## Interdisciplinary Majors

Qualified students may have the option of pursuing an interdisciplinary major, which includes specified course work in more than one academic department. A student who wishes to pursue an interdisciplinary major must develop a complete program of study in consultation with the department chairpersons involved. A written copy of that program signed by the chairpersons must be filed with the Office of Student Affairs. Unless it is subsequently amended with the written permission of the chairpersons, it constitutes the major program the student must complete for graduation.

## Double Majors

If a student elects to enroll in a double major, the requirements stipulated for each major program must be satisfied. Courses for the second major may not be used for general education requirements, other than restricted electives.

## Minor Programs

Minor programs are not required for graduation. In general, a minor consists of 18 to 21 credits of course work in a discipline, but more specific requirements may be imposed by the department or program area. Half the requirements for a minor program must be completed at the college. Students must consult the relevant chairperson or program director for full details, as well as file a declaration of intent to complete a minor in the Office of the Dean of Student Affairs.

The following minors are offered to students at Newark College of Arts and Sciences. Requirements for each minor are described in the Academic Programs and Courses chapters of this catalog.

- 010 Accounting
- 014 Afro-American and African Studies
- 050 American Studies
- 060 Ancient Mediterranean Civilizations
- 070 Anthropology
- 075 Archaeology
- 080 Art
- 098 Asian Studies
- 120 Biology
- 130 Botany
- 135 Business Administration
- 160 Chemistry
- 198 Computer Science

\* Teacher certification is available in conjunction with this major. See the education section of the catalog for further information.

202	Criminal Justice
220	Economics
350	English-Literature
420	French
460	Geology
470	German
510	History
551	International Affairs (Classical and Modern Languages and Literatures, and Political Science)
560	Italian
570	English-Journalism
600	Legal Studies (History and Political Science)
640	Mathematics
700	Music
730	Philosophy
750	Physics
755	Physics, Applied
790	Political Science
830	Psychology
836	Puerto Rican Studies
860	Slavic
880	Sciences, Technology, and Society
910	Social Work
920	Sociology
940	Spanish
965	Television
965	Theater Arts
988	Women's Studies
990	Zoology

## Courses of Study

The program of study a student follows varies considerably depending upon specific interests and abilities. The information below is of a general nature; many alternative programs are possible and should be discussed with the student's adviser or an academic dean.

Students should frequently consult with an adviser regarding the progress of work, the completion of all requirements, and plans for graduate study or professional work. Before graduation, the chairperson of the major department must certify to the faculty and the dean that the student has satisfactorily met the requirements for the major.

### First and Sophomore Years

In the first and sophomore years, the student should explore areas of major interest and should try to complete many of the general curriculum requirements. Students whose major requires additional knowledge of mathematics or science normally take appropriate courses in the field beginning in the first year.

Typical programs for the first and sophomore years might look as follows:

#### First Year

##### Fall Term

English composition (3)  
Mathematics (3)  
Laboratory science (4)  
Social science (3)  
Elective (3)

##### Spring Term

English composition (3)  
Fine Arts (3)  
Laboratory science (4)  
Social science (3)  
Elective (3)

## Sophomore Year

### Fall Term

History (3)  
Literature (3)  
Natural Science/Mathematics (3)  
Major or elective (3)  
Elective (3)

### Spring Term

History (3)  
Literature (3)  
Interdisciplinary (3)  
Major or elective (3)  
Elective (3)

## HONORS COLLEGE

The Honors College at Rutgers-Newark is a four-year undergraduate "college within a college," drawing the top students admitted to the Newark College of Arts and Sciences. The Honors College helps students develop a highly sophisticated research ability: e.g., the skill to analyze the question; the ability to see and discover information about the question; the wisdom to evaluate information; and the practiced skill of applying information to solve problems. The Honors College draws on faculty in all disciplines to present colloquia or to serve as mentors and second readers of honors projects. Honors College students are given full consideration for all available merit scholarships, and enjoy close interaction with faculty, small classes and seminars, independent and cross-disciplinary study, and off-campus opportunities.

Students are invited to join the Honors College based on academic record, a required essay, and in some instances, an interview with a member of the staff or advisory council, and may be incoming first-year students, continuing, or transfer students.

Participants in the four-year program are required to enroll in 21:350:103-104 Honors English Composition during the first year. In addition, 21:640:155,156 Honors Calculus is available for students with the appropriate mathematics background. By the end of their sophomore year, students should have completed two designated honors seminars. During junior year, students take a 2-credit course, Junior Scholars Inquiry Methods Course. The Senior Honors Project is the capstone of the Honors College program. These projects are often of either publishable or exhibition quality, thus giving graduates the credentials ordinarily characteristic of advanced graduate students.

For more information, contact Dr. Elizabeth Mitchell, director of the Honors College, Hill Hall, Rutgers-Newark, Newark, NJ 07102; telephone 973/353-5860/5866, or email: [lizmit@andromeda.rutgers.edu](mailto:lizmit@andromeda.rutgers.edu).

## OTHER PROGRAMS

### Architecture

A five-year Bachelor of Architecture degree is offered by the School of Architecture at the New Jersey Institute of Technology. Qualified students with a definite career interest in the field should apply directly to NJIT for admission. Students admitted to the Newark College of Arts and Sciences may, through the exchange registration system, take courses in the School of Architecture as space permits. Those who decide to continue studies in architecture should plan to transfer to NJIT preferably no later than the beginning of the sophomore year. Admission as a transfer student is not guaranteed, and is solely at the discretion of the New Jersey Institute of Technology. For those interested in the architecture program, the following course of study is recommended:

### Rutgers

- 21&62:080:121 Introduction to Drawing (3)  
21&62:350:101-102 English Composition (3,3)  
21&62:640:135 Calculus I (3)

### New Jersey Institute of Technology

- Arch 103 People and Their Environment I (3)  
Arch 155 Architectural Graphics (2)  
Arch 163 Introduction to Design I (4)  
Arch 164 Introduction to Design II (4)  
Arch 172 Architectural Programming (3)  
CIS 104 Computer Programming and Graphics Problems (2)  
HSS 211 The Premodern World (3) *or* HSS 212 The World and the West (3) *or* HSS 213 The Twentieth-Century World (3) \*  
Math 114 Finite Mathematics and Calculus II (4)

For further information, students may contact the Office of Admissions, or the assistant to the dean at New Jersey Institute of Technology School of Architecture (973/596-3075).

### Criminal Justice: Joint B.A. or B.S./M.A.

This five-year program makes it possible for qualified students to earn a baccalaureate degree from the Newark College of Arts and Sciences and a masters degree from the School of Criminal Justice. The program is designed for the highly motivated student who, at an early stage, has decided to pursue a career in the criminal justice field. Program requirements are:

1. Ninety-four undergraduate credits in liberal arts subjects, including satisfactory completion of the general curriculum requirements of the Newark College of Arts and Sciences;
2. Completion of an undergraduate major at the Newark College of Arts and Sciences;
3. A cumulative grade-point average of 3.2 or better at the Newark College of Arts and Sciences *and* a Graduate Record Examination test score (junior year) acceptable to the School of Criminal Justice.

Careful planning is necessary to complete the undergraduate requirements specified within a 94-credit framework. Accordingly, the program is ordinarily open only to students who matriculate as first-year students at the Newark College of Arts and Sciences or to those who transfer with no more than 30 credits.

Students interested in this program should contact the Office of Student Affairs during their first year; an official declaration of intent must be filed during the sophomore year. Application for early admission to the School of Criminal Justice is then made at the beginning of the second term of the junior year. (Applications, catalogs, and additional information about the School of Criminal Justice may be obtained at the S.I. Newhouse Center for Law and Criminal Justice, 15 Washington Street.) Students who meet at least the minimum qualifications specified above must secure a recommendation from the Office of the Dean of Student Affairs, which should be forwarded to the School of Criminal Justice with their application for admission. In all cases, the School of Criminal Justice reserves the right to deny admission to applicants it deems unqualified. Students

who do not qualify for admission to the graduate program at the end of the junior year may apply or reapply upon graduation from the Newark College of Arts and Sciences, but admission to the School of Criminal Justice is not guaranteed.

Those students accepted by the School of Criminal Justice receive their B.A. or B.S. degree from the Newark College of Arts and Sciences upon satisfactory completion of 24 credits in the graduate program. Upon satisfactory completion of the remaining requirements of the School of Criminal Justice, a Master of Arts degree is awarded. Upon admission to the School of Criminal Justice, students are bound by the academic regulations and degree requirements of that school.

### Dual Major with NJIT

To enhance the scope of education and the opportunities available to undergraduate students, the New Jersey Institute of Technology (NJIT) and the Newark campus of Rutgers, The State University of New Jersey (Rutgers–Newark), offer their students the option of pursuing a dual major in select fields at the two institutions.

Students at either Rutgers–Newark or NJIT may elect to pursue a dual (or second) major at the corresponding institution. Acceptance into a program will be determined entirely by the host institution program, but will be consistent and uniform, with practices in place for home institution students.

### Dentistry

Most dental schools now urge students to prepare for admission with the broadest possible curriculum. The entrance requirements for dental schools, as recommended by the American Dental Association, are identical to those listed for medical schools. The Dental Admission Test (DAT) is normally taken in the spring term of the junior year and application to dental schools made in the summer between the junior and senior years. Early in their undergraduate career, interested students should ascertain specific admission requirements of schools to which they may apply. Students interested in dentistry are urged to consult with the adviser for the prehealth program at 973/353-5705.

### Education

Students can obtain certification to teach at the elementary or secondary level by combining an approved major with courses in education. See the entry on education in the Academic Programs and Courses chapter in this section of the catalog.

### Engineering: Four-Year Program

The first two years of the four-year program are offered by the Newark College of Arts and Sciences. The last two years are taken at the College of Engineering at New Brunswick. To transfer to the College of Engineering, the student must satisfactorily complete all courses specified for the first two years and also must satisfactorily meet the standards established by the College of Engineering. Students should contact the engineering adviser in the Department of Physics, or the Office of Student Affairs at the earliest opportunity. As is the case of other preprofessional programs, competition is intense and admission to the College of Engineering is not guaranteed.

\* For course descriptions, students should consult the 1997–2000 NJIT Undergraduate Catalog.



By combining science and liberal arts courses at the Newark College of Arts and Sciences with appropriate engineering courses at the New Jersey Institute of Technology, the four-year program enables the student to complete the first two years of a regular engineering curriculum at the Newark College of Arts and Sciences. The last two years are completed at the College of Engineering at New Brunswick. The Bachelor of Science degree is conferred by the College of Engineering at the end of the fourth year.

#### First Year

##### **Fall Term (16 credits)**

- 21&62:160:113,115 General Chemistry and Laboratory (4)
- 21&62:350:101 English Composition I (3)
- 21&62:640:135 Calculus I (3)
- 21&62:750:205 Introductory Physics Laboratory (1)
- 21&62:750:213 Elements of Physics (3)
- CIS 101 (NJIT) Computer Programming and Program Solving (2)

##### **Spring Term (17 credits)**

- 21&62:160:114,116 General Chemistry and Laboratory (4)
- 21&62:640:136 Calculus II (3)
- 21&62:750:206 Introductory Physics Laboratory (1)
- 21&62:750:214 Elements of Physics (3)
- SS 201 (NJIT) Economics (3)
- humanities/social sciences elective (3)

#### Sophomore Year

##### **Fall Term (15–17 credits)**

- 21&62:640:236 Calculus IV (3)
- 21&62:750:316 Introduction to Modern Physics (3)
- 21&62:750:407 Advanced Physics Laboratory I (1)
- Mech 235 (NJIT) Statics \* (3)
- engineering major (NJIT) \* (2–4)
- humanities/social sciences elective (3)

##### **Spring Term (15–17 credits)**

- 21&62:640:235 Calculus III (3)
- 21&62:640:314 Elementary Differential Equations (3)
- engineering major (NJIT) \* (6–8)
- humanities/social sciences elective (3)

## Law

Law schools do not ordinarily require students seeking admission to have completed any specific major field or group of courses. There is, therefore, no rigid prelaw curriculum at the college. Most prelaw students major in one of the social sciences. In addition to acquiring a broad social science background and a high level of competence in using the English language, students should enroll in a number of courses that deal with the history and structure of the American courts and government, the complexities of the American society and economy, and the broad cultural background of our times.

Admission to law school is highly competitive; students whose college grades are mediocre and whose Law School Admission Test scores are low have very little chance of admission. Students interested in going to law school are strongly advised to make early contact with prelaw advisers whose names and office hours are available in the Office of Student Affairs.

\* Courses that may be taken at New Jersey Institute of Technology or during the Summer Session at the College of Engineering. Students should contact the engineering adviser, Department of Physics, or the Office of the Dean of Student Affairs for information regarding the proper choice of engineering courses before transfer to New Brunswick.

## Law: Dual Admission

Up to five students each year will be guaranteed admission to the School of Law–Newark when they begin their undergraduate degrees at the Newark College of Arts and Sciences (NCAS). To qualify, high school students must rank in the eighty-fifth percentile or above on both the verbal and the mathematical Scholastic Assessment Test. Applications are available at the Rutgers–Newark admissions office.

As an undergraduate, a student admitted to this program must maintain a 3.5 undergraduate cumulative grade-point average and score in the eightieth percentile on the Law School Admission Test. (Graduates who do not meet these criteria will be considered along with other applicants.)

## Liberal Arts Coordinated B.A. or B.S./M.B.A. in Professional Accounting

To encourage students to acquire a broad foundation in the liberal arts before they enroll in professional education, the Newark College of Arts and Sciences and the Graduate School of Management of Rutgers University have established a coordinated program leading to the B.A. or B.S. degree at the Newark College of Arts and Sciences and an M.B.A. degree in professional accounting from the Graduate School of Management. The program is designed for liberal arts students who seek to pursue full-time professional studies in accounting at the graduate level. Students who accrue more than 9 credits in accounting at the undergraduate level, or who earn an undergraduate degree jointly through the School of Management–Newark, may not enroll in this program.

Further information and applications may be obtained from the Graduate School of Management, 92 New Street, Newark, NJ 07102-1895, or at the Office of Student Services, Room 115, Engelhard Hall.

## Management: Joint B.A./M.B.A.

This five-year program makes it possible for students to earn a baccalaureate degree from the Newark College of Arts and Sciences and a Master of Business Administration degree from the Graduate School of Management. The program is designed for the highly motivated student who, at an early stage, has decided to pursue a career in management. Program requirements are:

1. Ninety undergraduate credits in liberal arts subjects, including satisfactory completion of the general requirements of the Newark College of Arts and Sciences;
2. Satisfactory completion of an undergraduate major at the Newark College of Arts and Sciences *other than business or accounting*;
3. A cumulative grade-point average of 3.2 or better at the Newark College of Arts and Sciences and a Graduate Management Admissions Test score in the top quartile.

Careful planning is necessary to complete the undergraduate requirements specified within a 90-credit framework. Accordingly, the program is ordinarily open only to students who matriculate as first-year students at Newark College of Arts and Sciences or to those who transfer with no more than 30 credits.

Students interested in this program should contact the Office of Student Affairs during their first year; an official declaration of intent must be filed during the sophomore year. Application for admission to the Graduate School of

Management is then made during the junior year according to the procedures outlined in the school's catalog. (Applications, catalogs, and additional information about the Graduate School of Management are available at the Office of Student Services, Room 115, Engelhard Hall.) Students who meet at least the minimum qualifications specified above will be admitted to the Graduate School of Management, provided a timely application for admission is filed and space is available in the class to which entry is sought.

### Medicine: Dual Admission

The Newark College of Arts and Sciences (NCAS) and the New Jersey Medical School (NJMS) offer a seven-year B.A./M.D. degree for outstanding high school graduates. Admission requirements include SAT scores of 1400 or above, a strong record of high school academic achievement, recommendations, and a final admissions interview. In order to matriculate at NJMS, students are required to maintain a minimum grade-point average of 3.2 during each term at NCAS.

The NCAS and the NJMS also offer outstanding high school graduates a joint eight-year B.A./M.D. program. This program seeks to recruit to the medical profession minority students who are underrepresented in the medical sciences. Admission requirements include SAT scores of 1150–1200 or above, a strong record of high school achievement, recommendations, and a final admissions interview. To matriculate at NJMS, students are required to maintain a minimum grade-point average of 3.0 during each term at NCAS.

Further information and applications are available at the Rutgers–Newark admissions office.

### Prehealth Professions (allopathic medicine, osteopathic medicine, dentistry, podiatry, optometry, and veterinary medicine)

There is no official “premed” major. While the majority of prehealth students major in the biological sciences or chemistry, individuals can major in any subject, including nonscience, with the provision that the core courses listed below are fulfilled.

#### Core Curriculum

Health professional schools require the successful completion of specific science courses in addition to basic undergraduate course work. Schools generally require, at minimum, the following subjects:

21&62:120:101-102	General Biology (4,4)
21&62:160:113-114	General Chemistry Laboratory (1,1)
21&62:160:115-116	General Chemistry (3,3)
21&62:160:331	Organic Chemistry Laboratory (2)
21&62:160:335-336	Organic Chemistry (3,3)
21&62:750:203-204	General Physics (3,3) <i>or</i> 21&62:750:213-214 Elements of Physics (3,3)
21&62:750:205-206	Introductory Physics Laboratory (1,1)
mathematics (3-6 credits), typically through	
	21&62:640:114 Precalculus (3), but some schools may require 21&62:640:135 Calculus 1 (3)

Since professional school requirements are subject to change, students should consult individual schools for information. Psychology, ethics, logic or other specific courses are sometimes required, and upper-level courses in the sciences are strongly encouraged.

### Typical Science Programs

The core curriculum should be completed by the end of the third year, with at least a 3.0 cumulative grade-point average, and in advance of the nationwide standardized examinations for the health professions (see below), which should be taken prior to the senior year.

A typical program for a student entering with a solid science background, excluding other credits required for graduation, might look as follows:

#### First Year

General biology (4)  
General chemistry (8)  
Mathematics (3 to 6)

#### Sophomore Year

Organic chemistry (8)  
Upper-level biology (3 to 4)

#### Junior Year

Physics (8)

#### Senior Year

Completion of college credits for graduation

For students with an average science background, a typical program might look as follows:

#### First Year

General biology (8)  
Mathematics (3 to 6)

#### Sophomore Year

General chemistry (8)  
Upper-level biology (3 to 4)

#### Junior Year

Organic chemistry (8)  
Physics (8)

#### Senior Year

Completion of college credits for graduation

Professional schools typically expect applicants to have superior scholastic records. Competition for admission is intense. Schools weigh not only grades, but also scores on the standardized entrance examination, the college letter of recommendation, and extracurricular activities, as well as seriousness of intentions. Students lacking at least a 3.0 cumulative grade-point average by the conclusion of the first year should seriously consider changing their career goals.

The following are the standardized admission tests for the health professions:

for allopathic, osteopathic and podiatric schools: Medical College Admission Test (MCAT);  
for dental schools: Dental Admission Test (DAT);  
for optometry schools: Optometry Admission Test (OAT); and  
for veterinary schools: Veterinary College Admission Test (VCAT), Graduate Record Examination (GRE), or Medical College Admission Test (MCAT).

Interested students should consult in their first year with Michael Feder (973/353-5826). Qualified upper-level students should contact Dr. John Maiello, chair, Prehealth Advisory Committee (973/353-5705), as should students seeking specific information or meetings.

## Pharmacy

Students seeking admission to the College of Pharmacy must obtain application materials from the admissions office and submit the completed forms along with the required supporting documents to the admissions office in New Brunswick prior to March 15.

The College of Pharmacy is located on the Busch campus in New Brunswick. Students admitted to the College of Pharmacy may spend their first year, or first two years, of study at the Newark College of Arts and Sciences. Full details about this arrangement may be obtained by contacting the College of Pharmacy.

Students admitted to the Newark College of Arts and Sciences may apply to transfer to the College of Pharmacy at the end of their sophomore year, but such admissions are extremely limited. Only students with outstanding academic credentials should apply for transfer to the College of Pharmacy.

Pharmacy students at Newark, or those planning to attempt to transfer to a pharmacy program, should have completed 63 credits by the end of their sophomore year. Required courses include:

### First Year

21&62:120:101-102	General Biology (4,4)
21&62:160:113-114	General Chemistry Laboratory (1,1)
21&62:160:115-116	General Chemistry (3,3)
21&62:220:101	Introduction to Economics, Micro (3)
21&62:220:102	Introduction to Economics, Macro (3)
21&62:350:101-102	English Composition (3,3)
Mathematics (through 21&62:640:135	Calculus I)

### Sophomore Year

21&62:120:340	Mammalian Physiology (4)
21&62:160:331	Organic Chemistry Laboratory (2)
21&62:160:335-336	Organic Chemistry (3,3)
21&62:220:231	Statistical Methods (3)
21&62:750:203-204	General Physics I,II (3,3)
21&62:750:205-206	Introductory Physics Laboratory (1,1)
social science/humanities electives	(12)

Students should contact the Office of Student Affairs for further information.

## Rutgers Study Abroad Program

Rutgers, The State University of New Jersey, offers a program of junior year studies in ten foreign countries: Britain, France, Germany, Ireland, Israel, Italy, Mexico, Poland, South Africa, and Spain. Although the program is intended primarily for students majoring in foreign languages and literatures, admission is open to majors in all disciplines within the humanities and the social sciences. Participants are selected from the various divisions of the university, as well as from other colleges and universities throughout the United States. Competence in the target language—both oral and written—is of paramount importance, and is therefore required; before departure, participants must have completed at least two years of college-level study (or its equivalent) in that language. An introductory course in the literature of the target language is highly recommended as preparation for the usually advanced-level offerings abroad.

The program is designed for 30 credit hours. Examinations, written work, hours of contact, and level of instruction meet in full the standards maintained at Rutgers. However, to ensure that students meet graduation requirements, participants should carefully plan their academic programs in consultation with their department advisers and academic deans. In the foreign country, a member of the university faculty is in residence to serve as director of the program and as an academic counselor to the students.

For further information, interested students should contact the Department of Classical and Modern Languages and Literatures on the Newark campus or write to the director of the Rutgers Study Abroad Program, Rutgers, The State University of New Jersey, 102 College Avenue, New Brunswick, NJ 08901-8543. Plans to study abroad also should be discussed and approved by the dean of student affairs in Hill Hall, Room 312.

## Visual Arts

A Bachelor of Fine Arts (B.F.A.) degree in design is offered at the Newark campus by the Mason Gross School of the Arts. Students interested in this program, which prepares them for graphic design and provides special internship opportunities, should apply to the Newark Affiliate Program of Mason Gross School of the Arts, Rutgers, The State University of New Jersey, New Brunswick campus. For more information, consult Rutgers–Newark Department of Visual and Performing Arts at 973/353-5119.

## Reserve Officer Training Corps (ROTC)

An air force officers training program is available to students through exchange registration at the New Jersey Institute of Technology in Newark. The mission of the AFROTC is to commission as second lieutenants those students who successfully complete the AFROTC education and training program while concurrently registered in a college degree program. Participation is voluntary, and the program is open to both male and female students.

A two-year and a four-year program is available. Scholarships, pay, field training, and aviation training are offered. A maximum of 6 degree credits is awarded by Newark College of Arts and Sciences. For additional information, students should contact the Department of Aerospace Studies, New Jersey Institute of Technology (973/596-3629).

An army officers training program is offered through the Department of Military Education (Army) on the Rutgers campus at New Brunswick. Army ROTC is open to qualified Rutgers male and female students of all academic majors. Completion of the program results in the award of an army commission as lieutenant in either the regular army, army reserves, or army national guard. Tangible aspects of participation include scholarship opportunities, pay during the advanced phase of the program (300- and 400-level courses), improved potential in seeking civilian employment, and access to military careers.

The Newark College of Arts and Sciences does not award degree credit for courses in military science, but a maximum of 6 credits toward the B.A. or B.S. degree is granted to individuals who are commissioned through this program.



## ACADEMIC POLICIES AND PROCEDURES

Policies and procedures applicable to all Newark undergraduate colleges may be found in the General Information section of this catalog. The descriptions below are specific for NCAS students and take precedence.

### Academic Advising

The college endeavors to ensure that all students receive sound academic advice and guidance during their undergraduate years. First-year students and other students who have not decided upon a particular course of study are advised by a special group of faculty advisers working through the Office of Student Affairs. Students who have declared a major are advised by a faculty member in the department of their major.

The academic deans are also available for guidance on academic matters, and students should consult with them regarding college requirements, the various academic regulations, or their program of study. The Career Development Center is another useful resource for students seeking information or guidance in selecting a major.

### Credit Load

To be considered a full-time student, an individual must carry a minimum of 12 credit hours per term. Students may not carry more than 19 credit hours per term without written permission from a dean in the Office of Student Affairs. As a general rule, permission is not granted to those students whose term or cumulative grade-point average is below 2.5.

### Class Standing

A student's progress in college is recorded in terms of credit hours, and each course carries a stated number of credits. Class standing is updated via the computer, June through October of each year. This classification attempts to predict the year in which the degree requirements will be completed, based on the number of credit hours earned.

Classification	Credits
First-year	0-24
Sophomore	25-55
Junior	56-85
Senior	more than 85

## HONORS AND AWARDS

### Dean's List

At the end of each academic year, the Office of the Dean of Student Affairs compiles an honors list of students whose work in either or both terms was outstanding. The Dean's List specifically includes those students who complete 12 or more credits toward graduation in a given term and whose term average was 3.5 or better. *N* credit courses do not count toward graduation.

### Graduation with Honors

The diplomas of students whose cumulative grade-point average is between 3.5–3.699 at graduation are inscribed "With Honors." For the student whose cumulative grade-point average lies between 3.7–3.849 inclusive, the phrase reads "With High Honors." Students earning a cumulative grade-point average of 3.850 or better are designated as graduating "With Highest Honors." Only grades received for courses completed at the university can be counted in these calculations; a minimum of 60 credits earned at Rutgers is necessary to qualify.

### Honor Societies

**Phi Beta Kappa.** The Phi Beta Kappa Society elects to membership the outstanding scholars of the senior and junior years from a list of eligible students whose undergraduate programs have been substantially composed of liberal arts courses.

**Other Honor Societies.** Other honorary societies include:

*Beta Beta Beta*—Botany and Zoology  
*Beta Gamma Sigma*—Business  
*Phi Lambda Epsilon*—Chemistry  
*Omicron Delta Epsilon*—Economics  
*Pi Delta Phi*—French  
*Phi Alpha Theta Iota Kappa*—History  
*Pi Sigma Alpha*—Political Science  
*Psi Chi*—Psychology  
*Alpha Kappa Delta*—Sociology  
*Sigma Delta Pi*—Spanish  
*Alpha Epsilon Rho*—Theater Arts  
*Alpha Psi Omega*—Theater Arts

### Scholarships

Scholarships specifically for new first-year and transfer students are awarded by the Office of University Undergraduate Admissions and the Office of Financial Aid in consultation with the dean of the college and specific committees, as appropriate. Application for admission also serves as an application for these scholarships. Contact the Office of Undergraduate Admissions–Newark (973/353-5206) for more information.

During the spring term, Newark College of Arts and Sciences students apply for the dean of student affairs and other scholarships. A 3.5 GPA is required. Those selected receive need- and merit-based awards from the scholarships listed below. Contact the dean of student affairs (973/353-5811) for more information.

The following list constitutes scholarships limited to students enrolled in Newark College of Arts and Sciences, in addition to those described in the chapter on financial aid in this catalog. Very brief eligibility criteria are provided.

**NCAS Alumni Scholarship.** Renewable scholarship awarded to first-year students by the NCAS Alumni Association on the basis of scholastic achievement, leadership, or public service and evidence of potential academic excellence and contribution to the life of the college.

**Robert M. Birnbaum Scholarship.** Awarded on the basis of academic merit and financial need to a full-time student who has completed at least 24 credits and intends to major in business or accounting.



**Henry Blumenthal Scholarship.** Awarded by a committee of the NCAS Alumni Association on the basis of good academic performance, promise of responsible citizenship, and financial need.

**Catherine Bond Memorial Fund.** Award based on academic merit and financial need.

**John and Aljean Brown Scholarship.** Award based on academic merit and financial need.

**Chai Family Scholarship.** Award based on academic promise and financial need.

**Stuart and Pamela Faber Memorial Scholarship.** Renewable award to a full-time student, preferably from Newark and the surrounding area, who demonstrates academic promise and financial need.

**Dean Inge Gambe NCAS Memorial Scholarship.** Awarded to a member of the junior class on the basis of service to the NCAS student body, unmet financial need, and academic merit.

**Julius Gerson Memorial Scholarship.** Award based on financial need.

**Debra and Marvin Greenberg Scholarship.** Awarded to a graduate of Hudson County Community College based on academic achievement and campus citizenship, with preference given for those with financial need.

**Sidney S. Greenfield Botany Fellowship Fund.** Awarded to a graduating senior admitted to Graduate School–Newark, based on academic merit and demonstrated desire to pursue a career in the plant sciences.

**Cynthia Kastner Scholarship.** Awarded to a full-time student, preferably from a single parent household at time of application, based on academic merit and financial need.

**Lipkin Scholarship.** Award based on academic merit and financial need.

**Maimone Family Scholarship.** Renewable award based on academic merit and financial need.

**Jerome and Lea P. Mandelman Memorial Scholarship.** Award based first on financial need and then on academic achievement. Preference to qualified Newark resident in social sciences or natural sciences.

**Marvin David Miller Scholarship.** Awarded on the basis of academic excellence, economic need, evidence of leadership, and good health.

**Samuel I. Newhouse—Newark Star Ledger Scholarship.** Award based on academic promise and financial need.

**Julia O'Hara Scholarship.** Renewable scholarship to a student from St. Benedict's Preparatory School who is in financial need.

**Anna and Harry Phillipson Undergraduate Scholarship for Music and the Fine Arts.** To promote an uninterrupted quality education in specific areas of music and the fine arts, based on academic merit determined by the Department of Visual and Performing Arts and financial need. Awarded to New Jersey residents in the top 10 percent of their high school class.

**Alex J. and Rose Marie Plinio Fund.** Awarded to disadvantaged full-time students to provide emergency or supplemental scholarship support.

**Henry Rogers Newark College Scholarship.** Award based on academic merit and financial need.

**Schaefer Family Scholarship.** Awarded to a full-time undergraduate student who has at minimum completed the first year, based on the student's commitment to achieving an undergraduate education and financial need.

**Servicemen's Center Association Scholarship.** Awarded to needy and worthy students who are Newark residents, preferably who have at least one parent who has served or is serving on active duty in the Armed Forces or to otherwise qualified students.

**Strauss Equal Opportunity Fund.** Awarded to a student majoring in social work.

**Betty Thompson Memorial Scholarship.** Awarded to a full-time undergraduate student majoring in physics based on academic merit, financial need, and other criteria as determined by the Department of Physics.

**Anna and Bernard Z. Senkowski Scholarship.** Annual award to a chemistry major based on financial need.

**Associated Students War Memorial Grant Fund.** Awarded to full-time students who have completed at least one year at the college.

**Walter F. Weiker Scholarship.** Awarded on the basis of merit to a senior majoring in political science or sociology who is continuing graduate education in political science, sociology, or international affairs.

## Awards and Prizes

In addition to being eligible for the scholarships described in this chapter and the chapter on financial aid, students in the Newark College of Arts and Sciences may compete for the following awards:

**John Faulstich Alumni Association Award.** The Alumni Association of Newark College of Arts and Sciences annually awards an outstanding senior a plaque for scholastic and extracurricular achievement. A plaque bearing the student's name is presented to the student's high school.

**Kenneth Alvord Award.** Awarded to an outstanding graduating senior whose major or minor is in broadcasting journalism.

**American Institute of Chemists Award.** Upon recommendation of the chemistry faculty of the college, an outstanding senior chemistry major is awarded a special scroll by the American Institute of Chemists at a formal banquet.

**Madison C. Bates Award.** Colleagues, former students, and members of the family of the late Madison C. Bates, professor of English at the college, established a fund that provides an annual award to the senior student majoring in English who, at the middle of senior year, has attained the highest scholastic average in the department.

**Charles I. Biederman Award.** Awarded annually to a student demonstrating scholastic excellence in the field of philosophy. The recipient is selected by the faculty of the Department of Philosophy.

**Biological Society Award.** Awarded annually to a senior demonstrating scholastic excellence in the biological sciences and service to the society.

**Lourdes Casal Memorial Award.** In honor of the memory of the late Dr. Lourdes Casal, the Department of Psychology awards a prize each year to the graduating senior selected by the faculty who best combines intellectual excellence with social commitment.

**Peter Christian Award.** Awarded to a graduating senior in journalism who has a high cumulative grade-point average but who did not necessarily start out with a distinguished record.

**Class of 1954 Scholarship Award.** Presented annually to the graduating student with the highest cumulative grade-point average who is not otherwise an award recipient.

**Dean of Students Award.** Awarded annually by the dean of students to a senior for outstanding leadership and service.

**Delta Sigma Pi Scholarship Key.** The key is awarded yearly by the faculty to that student pursuing the economics-business curriculum who ranks highest in scholarship among the seniors.

**David Diorio Award.** This award was established in memory of David Diorio, a student in NCAS, by his family. It is given annually to a nontraditional student majoring in English.

**Bessie Dolgan Memorial Award.** This award, honoring the late Bessie Dolgan, a medical technologist, is presented annually to a premedical student who has been accepted for admission to a medical school. The grant is to be devoted to the purchase of books needed for medical studies. The biology faculty names the student on the basis of scholarship and financial need.

**Nancy Higginson Dorr Awards.** The awards, supported by the income from a fund given by the John Van Nostrand Dorr Trust, amount to not less than \$100 each. They are given annually to the outstanding senior(s) showing the greatest promise of teaching in secondary schools. The Teacher Education Committee of the Newark College of Arts and Sciences is responsible for selecting the winner(s) in accordance with criteria developed by that committee.

**Economics Department Prize.** The Department of Economics awards a prize each year to a senior majoring in economics who is selected by the members of the department for outstanding scholarship.

**May Edel Memorial Award.** A fund has been established by the friends and colleagues of the late Dr. May Edel, assistant professor of anthropology in Newark College of Arts and Sciences until her death in 1964. The interest from this fund, in the form of an annual cash prize, is awarded to the anthropology student who, in the opinion of the senior members of the Department of Sociology and Anthropology, shows the most promise of distinction in anthropology.

**FAS-N Dean's Award.** Awarded annually by the dean of the Faculty of Arts and Sciences-Newark to an outstanding senior for academic excellence.

**Harold A. Fales Memorial Award.** Established by Mrs. Fales and the many friends of the late Professor Fales, who was visiting professor of chemistry at Newark College of Arts and Sciences from 1948 through 1953, the cash award of interest from the fund is presented to a senior student chemistry major at the Newark College of Arts and Sciences selected by the chemistry faculty of the college.

**David Robert Friedlander Memorial Award.** Interest from a fund established in memory of David Friedlander, a graduate of Newark College of Arts and Sciences, is awarded annually to an outstanding senior graduating from the college and majoring in history or prelaw.

**Inge Gambe Award.** A plaque is presented annually to the most outstanding international student in the graduating class. The award honors the late associate dean of students who served as adviser to international students.

**Joel Girgus Book Award.** In honor of the memory of the late Dr. Joel Girgus, the Department of Psychology awards a prize each year to the graduating senior majoring in psychology with the highest cumulative grade-point average.

**Sydney S. Greenfield Award.** The Department of Biological Sciences presents the award annually to its outstanding graduating senior. The selection is made by the botany faculty.

**Samuel Greitzer Award.** Established by the mathematics department faculty in honor of their colleague, Samuel Greitzer, this prize is awarded to an outstanding graduating mathematics major in Newark College of Arts and Sciences or University College-Newark.

**Paul Mahlon Hamlin Award.** This award was established in 1958 by Madge Sills Hamlin to perpetuate the lifelong interest in scholarship of her husband, Paul Mahlon Hamlin, professor emeritus of political science. The award consists of a certificate and cash and is made in May to the graduating senior of Newark College of Arts and Sciences who has attained the highest scholastic rank as shown by Phi Beta Kappa standing.

**Morton Hellman Award.** Established by Mrs. Morton Hellman in honor of the late Morton Hellman, this award is given to an outstanding graduating mathematics major in Newark College of Arts and Sciences or University College-Newark who plans to continue mathematical studies at the graduate level.

**Joannie L. Huberman Award.** This award is given annually in memory of Joannie Huberman, a 1979 graduate of Newark College of Arts and Sciences, to a junior or senior anthropology major who demonstrates the particular qualities she exemplified: commitment to anthropology; academic excellence; original insight; and concern for humanistic values.

**John Keosian Award.** An annual book award to a senior undergraduate of the Department of Biological Sciences who demonstrates continuing interest in basic biological problems, such as the origin and evolution of biological systems.

**Joshua K. Kohn Award.** The trustees of the Joshua K. Kohn Memorial Fund endowed a prize for essays concerning some phase of Jewish culture. The contest is open to any student.

**Beth Niemi Award.** Awarded to a student for outstanding work in women's studies.

**Samual Pesin Memorial Award.** This is a \$100 supplementary award made to a New Jersey State Scholarship recipient at Newark College of Arts and Sciences; the individual is designated a Samual Pesin Scholar. It is made annually to a first-year student who is a resident of Hudson County and who best exemplifies the ideals of the man whose name the award bears.

**Charles Pine Award.** Awarded to an NCAS graduating senior who is going on to graduate studies and has demonstrated outstanding scholastic excellence in the area of physical science and mathematics.

**Phi Beta Kappa Alumni Association of Essex County Award.** The Phi Beta Kappa Alumni Association of Essex County makes an award in the spring of each year to an outstanding junior at Newark College of Arts and Sciences. The winner is selected by the Newark section of the Alpha Chapter of Phi Beta Kappa of New Jersey.

**Political Science Department Prize.** The Department of Political Science awards a book prize each year to the senior majoring in political science at Newark College of Arts and Sciences who, in the opinion of the members of the department, has made the most meritorious record in that subject.

**Richard C. Robey Memorial Award.** An award to a graduating senior for excellence in an area of study that reflects the scholarly interests of the late Richard C. Robey, dean of the college and professor of American studies.

**Yolande Rubianes Award.** A plaque is awarded annually to the graduating senior who, in overcoming adversity, has achieved distinction as a student.

**Jay Rumney Memorial Award.** A fund has been established by Rebecca Rumney as a memorial to her husband Jay Rumney, formerly professor of sociology in the University of Newark and Newark College of Arts and Sciences until his death in 1957. The interest from this fund is used for an annual book prize to the sociology student who, in the opinion of the senior members of the Department of Sociology and Anthropology, has made the best record in the field of sociology.

**Charles Sabat Awards in Chemistry.** Two cash prizes of \$250 each are awarded to two senior chemistry majors who are judged by the Faculty of Arts and Sciences–Newark chemistry faculty to show great promise in the fields of organic and/or biochemistry, and in the field of physical chemistry.

**Scholar-Athlete Award.** Given annually to the graduating varsity athlete (male or female) with the most outstanding record of academic achievement.

**Heinz Seelbach Award.** Awarded to a graduating senior with the highest grade-point average in political science.

**Keschav C. Sondhi Memorial Award.** An annual book prize in memory of Professor Sondhi awarded by his colleagues in the Department of Biological Sciences to an advanced graduating student of the department selected for promise as an investigator in a branch of the biological sciences.

**Israel S. Stamm Memorial Prize Fund.** Two prizes awarded each spring to outstanding senior students who have majored in one or more modern or classical languages at Rutgers–Newark.

**Betty Skuze Thompson Prize.** An award for students who have shown an outstanding record of achievement in the study of undergraduate physics at Rutgers–Newark. Made in memory of Betty Thompson, a graduate of the FAS–N Department of Physics and a dedicated teacher of physics, by her husband, George Thompson.

**Rebecca S. Villers Award.** Established in memory of Rebecca S. Villers, this award is based on academic merit and is given to an EOF student with a major in psychology, who is completing his or her junior year. The award is to be used to purchase all required and recommended books directly related to courses during the first term of the recipient's senior year.

**Wall Street Journal Award.** A silver medal and a year's subscription to the Wall Street Journal are awarded to a senior majoring in economics or a field of business who, in the opinion of the members of the respective departments, shows promise of distinction in economics or business.

**Benjamin M. Weissman Award for Excellence in Writing on Politics.** This prize is awarded to the graduating political science major who is judged to have written the best essay on politics. Essays written for class assignments, individual study, or the Honors College program are eligible for consideration.

**William W. Wiles Memorial Fund.** An award made annually in memory of Dr. William W. Wiles to assist undergraduate students at Newark College of Arts and Sciences in the earth and life sciences to carry out fieldwork or attend conferences related to field studies.

**Herbert P. Woodward Memorial Fund.** This fund was established in 1969 through contributions from friends and associates of the late Dr. Woodward, who served as professor of geology for thirty-seven years and as dean of the college for twenty years. Interest from this fund is used to present a book prize to the outstanding senior majoring in geology.

**Edward H. Zabriskie Memorial Award.** Interest from a fund established in memory of the late Professor Zabriskie is awarded annually to a student majoring in history at Newark College of Arts and Sciences. The recipient is chosen by the faculty in history.

**Sidney Zebel Award.** Awarded to an NCAS graduate majoring in history.

**Louis R. Zocca Award.** Established in 1976 by friends and associates of Dr. Louis R. Zocca, professor emeritus of English, who served for thirty years; the interest on the fund is used to present an award to the outstanding senior for excellence in the study of literature.



# University College– Newark

## ABOUT THE COLLEGE

In 1934, Rutgers, The State University of New Jersey, established University College as an evening college offering programs of study leading to the bachelor's degree. Major branches of University College were established in Camden, Newark, and New Brunswick. In 1981, each of these branches became a separate college within the university.

Today, University College–Newark (UC–N) is a college designed for the adult student who has work and family obligations during the day, and who attends class in the evening or on Saturday. The college is served by the distinguished Faculty of Arts and Sciences–Newark, augmented by coadjutant faculty who bring to the classroom special expertise in professional studies and the world of business and government.

### A Diversified Student Body

About two-thirds of the college's 1,700 students are young adults between the ages of twenty-four and thirty-four. However, a significant number are both younger and older than this age group.

Approximately 50 percent of the students are members of minority groups; about half are women. Most are candidates for the baccalaureate degree but some are college graduates who are pursuing a second bachelor's degree or who plan to go on to graduate school in a different area of study. Others enroll in selected courses in areas of professional or personal interest without establishing degree candidacy.

## DEGREE REQUIREMENTS

In preparing students for careers in the professions, business, and government and for graduate studies, UC–N builds on a broad foundation in the liberal arts. To earn a degree, all students must complete a general core of courses known as the general or liberal arts and science requirements. Students must also fulfill the requirements of a major; i.e., a concentration of courses in a particular field of study.

### Academic Advising

The advising/registration schedule is mailed to students by the registrar's office. University College students may see an adviser each term before registering for classes. At that time, the student's academic record is reviewed and students are informed of any outstanding requirements. Advisers are also available during the regularly scheduled registration dates. Students who fail to register during these dates are charged a fee for later registration.

## Placement Examinations for Entering Students

Students with fewer than 12 college credits at the time of admission must take the New Jersey College Basic Skills Placement Test. If the student has completed 12 or more college credits at the time of admission, writing and mathematics placement tests must be taken. Based on the results of these tests, students are placed in the appropriate English and mathematics courses.

## General Curriculum Requirements

A student must successfully complete a minimum of 124 credits, including satisfaction of the college requirements, in order to graduate from University College–Newark. Students are subject to the curriculum requirements in effect when they entered University College–Newark. Students who leave college for two or more consecutive terms are expected to meet the requirements in effect at the time they return.

### Proficiencies in Basic Skills

Students must demonstrate competence in the following areas:

**English.** Minimum writing proficiency is satisfied by successful completion of 21&62:350:101-102 English Composition or 21&62:350:121-122 Expository Writing (for transfer students), with grades of *C* or better. A student must continue registration in either a communication skills course or English 101-102, 121-122, until the minimum writing proficiency is satisfied. Students are expected to write proper English in all courses. A student who consistently writes in an unsatisfactory manner, even though English composition has been passed, may be required to complete appropriate remedial work.

**Mathematics.** Minimum proficiency in mathematics is met by satisfying one of the following criteria:

1. Successful completion, with a grade of *C* or better, of 21&62:640:111, 112, or 113 College Algebra or any more advanced course in mathematics offered by the Department of Mathematics and Computer Science.
2. Satisfactory performance on a proficiency examination administered by the Department of Mathematics and Computer Science.
3. Successful completion, with a grade of *C* or better, of a college-level, first-term, calculus course equivalent to 21&62:640:135 Calculus I, at another institution, or a grade of *B* or better in a precalculus course equivalent to 21&62:640:114 or 119.

Every student must successfully complete the mathematics proficiency requirement within one term after becoming eligible according to established placement standards at the college. This requirement must be completed satisfactorily before the student achieves senior standing. Students not meeting the deadline may be required to carry a reduced credit load and to defer their probable date of graduation.

**Critical Thinking.** First-year students with less than 12 credits may be required to complete 62:730:107 Critical Thinking.

**Foreign Language.** Students are expected to complete two years of a foreign language prior to entering college.



**History and Literature.** Students must successfully complete two courses (6 credits) in history offered by the Department of History and two courses (6 credits) in literature offered by the Department of English, the Department of Classical and Modern Languages and Literatures, or the Department of Afro-American and African Studies. The literature courses may be taken in the original language or in translation. Successful completion of English composition is a prerequisite for literature and history courses. Students who choose a literature course in an original language must fulfill language prerequisites for that course as well. For information about specific courses that fulfill this requirement, consult the Office of Student Affairs.

**Natural Science/Mathematics.** Students must complete one of the following options:

1. A one-year, 8-credit science course with laboratory, or
2. three courses in nonlaboratory science, mathematics, or computer science.

At least two of the three courses in the second option must be science courses offered by the departments of biological sciences, geological sciences, chemistry, and physics. The third course may be selected from the sciences or from courses offered by the Department of Mathematics and Computer Science. If a mathematics course is chosen, it must be at a higher level than the one taken to fulfill the mathematics proficiency requirement.

**Social Sciences.** Students must successfully complete 6 credits in anthropology, economics, political science, psychology, or sociology. For information about specific courses that fulfill this requirement, consult the Office of Student Affairs.

**Humanities and Fine Arts.** Students must successfully complete 6 credits in any of the following disciplines: art, music, philosophy, theater arts, and speech. For information about specific courses that fulfill this requirement, consult the Office of Student Affairs.

**Restricted Electives.** Every student must successfully complete 15 credits of electives outside their major. (Current and prospective students in the School of Management may not take courses offered by the School of Management to fulfill this requirement.)

Courses taken for graduation credit in education may be used as electives for this requirement.

## Major Programs

Students must complete a major in one of the disciplines shown below:

- 010 Accounting
- 198 Computer Science
- 202 Criminal Justice
- 220 Economics
- 350 English
- 390 Finance
- 510 History
- 548 Information Systems
- 620 Management
- 630 Marketing
- 642 Mathematics, Applied
- 730 Philosophy
- 790 Political Science
- 830 Psychology
- 910 Social Work
- 920 Sociology

The general advisers, the deans, and staff members of the Career Development Center can provide assistance to students who are undecided about an appropriate program to pursue.

The requirements for each major are established by the appropriate academic department and are subject to modification. The number of credits needed to complete a major varies. Some programs of study may require more than the minimum 124 credits necessary for graduation. For details about specific majors, see the Academic Programs and Courses chapters.

Students must satisfy the requirements specified by the department of their major at the time they officially declare that major. Students leaving the college for two terms or more must meet the requirements in place at the time they return.

No course in which a grade of *D* or *F* has been earned may be counted toward the completion of a major; in some disciplines the required cumulative grade-point average for the major is higher than the minimum specified by the college for graduation. Transfer students must complete at least one-half of the credits required for their major at the college.

## Interdisciplinary Majors

With approval of the concerned departments, a UC-N student may elect an interdisciplinary major for either the B.A. or the B.S. degree. An interdisciplinary major includes courses selected from at least two disciplines, chosen by the student to satisfy a particular educational objective. Recent interdisciplinary majors designed by students, with faculty assistance, have included psychology/management, mathematics/accounting, political science/criminal justice, and history/philosophy.

A form for submission of a proposed interdisciplinary major program is available in the Office of Student Affairs.

## Double Majors

If a student elects to enroll in a double major, the requirements stipulated for each major program must be satisfied. Courses for the second major may not be used for general education requirements, other than restricted electives.

## Minor Programs

Most of the major programs listed above also offer minor programs. A minor generally consists of 18–21 credits of course work in a discipline, but more specific requirements may be imposed by the sponsoring department. Half of the requirements for the minor program must be completed at UC-N. A minor is *not* required for graduation.

## Other Programs

### Joint Undergraduate/Graduate Degree Programs in Business Administration and in Criminal Justice

University College–Newark has two combined bachelor's/master's degree programs. The first is between the college and the Graduate School of Management and permits students studying in a bachelor of arts curriculum at University College–Newark to obtain both the Bachelor of Arts degree and a Master of Business Administration degree in an accelerated period of time. The second program is between the college and the School of Criminal Justice and permits students in either a Bachelor of Arts or Bachelor of Science curriculum at University College–Newark to obtain a bachelor's degree along with a master's degree in criminal justice in an accelerated period of time.

Students in either program complete their junior year at University College–Newark. The student then enrolls in the graduate program. Credits earned in the graduate program are counted toward completion of the University College–Newark degree. These programs are highly competitive, and students who wish to apply must demonstrate strong academic performance. See individual program descriptions in the Newark College of Arts and Sciences section of this catalog.

## HONORS COLLEGE: UC–N

Students with outstanding academic records may be eligible to participate in the UC–N Honors College, which offers an enriched and challenging educational experience. The Honors College is open to all students who have demonstrated excellence in their studies at UC–N, by invitation or by faculty recommendation.

Students in the program complete at least two special Honors courses (6 credits). These might include a 101 section of English, where the instructor would give additional readings, special writing projects, etc., to a student identified as Honors-eligible by the Honors office. The same arrangement would be possible for calculus students and students in the natural sciences courses.

During the UC–N Honors junior year, students are required to take two Honors seminars, one each term, on special topics and each worth 3 credits. These courses might resemble the day college Honors seminars in special topics, and they are taught by full-time faculty members.

The senior year includes an inquiry methods course, 3 credits each term. The first term of the course is theme-based and includes several speakers' presentations on the theme. The students then work collaboratively. This first term includes work in research methods, citation and reference requirements, and use of all that Dana Library has to offer. The second term of the course requires students to work independently on research projects. These efforts will give students experience in traditional research methods, as well as multimedia techniques, and will reinforce the research methods they have learned earlier in special topic seminars.

For further details about the Honors College, contact the director of the Honors College, Hill Hall (973/353-5866).

## ACADEMIC POLICIES AND PROCEDURES

Policies and procedures applicable to all Newark undergraduate colleges may be found in the General Information section of this catalog. The descriptions below are specific for UC–N students and take precedence.

### Declaration of a Major

To declare or change a major, a student must complete a form, which is available in the Office of Student Affairs. A student may declare a major after he or she has earned 24 credits, satisfied the English proficiency sequence, and has earned a minimum cumulative grade-point average of 2.0. For students wishing to major in accounting, finance, management, or marketing, application must be made directly to the School of Management. Students should apply to the SOM after they have completed 56 credits.

A minimum cumulative grade-point average of 2.5 is necessary for acceptance. At the latest, a student must declare a major before the completion of 60 credits.

### Registration in Day Courses

UC–N students who wish to enroll in day courses at NCAS must have completed a minimum of 12 credits at UC–N with a cumulative grade-point average of 2.5 or better, or must receive permission from the dean of students.

## HONORS AND AWARDS

### Dean's List

The Dean's List recognizes current academic achievement. Students are eligible if they are matriculated and have completed 6 or more credits toward graduation during an academic term, with a cumulative grade-point average of 3.5 or better. *N* credit courses do not count toward graduation.

### Graduation with Honors

A University College–Newark student may graduate with honors upon meeting the following requirements at the end of the final term for the baccalaureate degree:

1. Completion of a minimum of 45 credits in Rutgers, The State University of New Jersey, of which at least 30 credits have been completed at UC–N.
2. Achievement of cumulative grade-point average as follows:

Highest honors	3.850 or better
High honors	3.700 to 3.849
Honors	3.500 to 3.699

### Honor Societies

**Phi Beta Kappa.** The Phi Beta Kappa Society elects to membership the outstanding scholars of the senior and junior years from a list of eligible students whose undergraduate programs have been substantially composed of liberal arts courses.

**University College Honor Society.** The Gamma Lambda chapter of Alpha Sigma Lambda National Honor Society is open by invitation to students who have earned, at the time of induction, 60 credits at Rutgers, including 30 credits at UC–N.

**Beta Gamma Sigma.** Beta Gamma Sigma is the national scholastic honor society in the field of administrative studies recognized by the American Assembly of Collegiate Schools of Business. To be eligible for Beta Gamma Sigma, a student must rank in the top 5 percent of the junior class or in the top 10 percent of the senior class. Information can be obtained by contacting the program advisers in accounting, finance, management, or marketing.

### Scholarships

Scholarships specifically for new first-year and transfer students are awarded by the Office of University Undergraduate Admissions and the Office of Financial Aid in consultation with the dean of the college and specific committees, as appropriate. Application for admission also serves as an application for these scholarships. Contact the Office of Undergraduate Admissions–Newark (973/353-5206) for more information.

During the spring term, University College–Newark students apply for the dean of student affairs and other scholarships. Those selected receive need- and merit-based awards from the scholarships listed below. Contact the dean of student affairs (973/353-5400) for more information.

The following list constitutes scholarships limited to students enrolled in University College–Newark, in addition to those described in the chapter on financial aid in this catalog. Very brief eligibility criteria are provided.

**Stuart and Pamela Faber Memorial Scholarship.** Renewable award to a full-time student who demonstrates academic promise and financial need, preferably from Newark and the surrounding area.

**Albert R. Gamper, Jr., Scholarship.** Awarded to either a part-time or full-time student of senior standing.

**Rueberta E. Rodgers Scholarship.** Awarded to a young woman who is working during the day and trying to obtain an education at night.

**Schaefer Family Scholarship.** Awarded to a full-time undergraduate student who has at minimum completed the first year, based on the student's commitment to achieving an undergraduate education and financial need.

**University College–Newark Scholarship Fund.** Funded by the annual contributions of alumni and friends. Awarded on the basis of academic merit and financial need.

## Awards and Prizes

University College–Newark students who demonstrate outstanding academic achievement are eligible for awards and prizes, which are presented annually at the Academic Honors Convocation. In addition to special recognition given to seniors who have demonstrated academic excellence in major programs, the following awards are presented:

**Alumni Association Award.** Presented by the University College–Newark Alumni Association to the member of the graduating class who has demonstrated the highest degree of academic excellence and student leadership among candidates for degree in the year under review.

**Marcus Bean Award.** Presented to the graduating senior who has majored in accounting and who has demonstrated scholastic excellence and proficiency in that field. The award was established by Mr. James Turner in honor of Professor Marcus Bean.

**Edward McNall Burns Memorial Award.** Presented annually to the history major who graduates with the best academic record in this field. The cash award is sponsored by Mrs. Edward McNall Burns in memory of her husband, who was professor of history and professor of political science at Rutgers.

**Delta Sigma Pi Key.** Presented by the Beta Rho chapter and bestowed upon that member of the graduating class whose academic record in business administration is the highest among degree candidates in the year under review.

**Nancy Higginson Dorr Award.** A memorial award sponsored by her children in memory of Mrs. Dorr's dedication to the teaching profession. The cash award is presented to the graduating senior who has demonstrated academic excellence and who shows promise of success as a teacher in secondary education.

**Ruth Fryer Memorial Award.** Presented to the student who, in the opinion of student and faculty judges, submits the best work to *Untitled*, the University College–Newark literary magazine. The cash award and plaque commemorate the memory of Ruth Fryer who graduated from, and subsequently taught at, University College.

**Honor Society Scholarship.** Presented to that member of the graduating class who is also a member of the Honor Society and who has demonstrated academic excellence and outstanding service to the college.

**Rita J. Immerman Award.** Presented annually to a political science major who is a candidate for degree and who has been accepted into a graduate or professional program. The award was established by Mr. John Crowley, a University College–Newark graduate, in appreciation of the contributions Dr. Immerman and the college made to his personal advancement.

**Charles Kaden Memorial Award.** Presented to the University College senior whose progress as an undergraduate in the field of psychology warrants special recognition.

**Jack A. Mark Memorial Award.** Established to honor the memory of Jack A. Mark, department chairperson of criminal justice. The award is presented to the graduating senior who has demonstrated the highest scholastic excellence and proficiency in that field.

**The Cassie Miller Award.** Named to honor the former dean of students for University College–Newark. The award recognizes outstanding community service by a nontraditional student.

**Norman C. Miller Award.** Named to honor the founding dean of University College, the award is presented to that member of the graduating class who has the highest academic record among degree candidates.

# Academic Programs and Courses

## AVAILABILITY OF COURSES, MAJORS, AND MINOR PROGRAMS

A large proportion of majors and minors described in this section are offered at both Newark College of Arts and Sciences and University College–Newark. However, some are offered only at NCAS; others are offered only at UC–N. Further, in some instances UC–N and NCAS major and minor requirements differ. It is therefore important to consult the chapters on UC–N and NCAS in this catalog for lists of majors and minors available to students at each of the schools, and also to consult the descriptions of program requirements in this chapter.

Students enrolled at one of the Rutgers undergraduate colleges in Newark who wish to take a course or a program at another college should consult with their adviser or the Office of Student Affairs.

In some instances NCAS and UC–N courses have different numbers and/or titles, but may be essentially the same in terms of subject matter. It is the student's responsibility to read course descriptions carefully and, when in doubt, to check with an adviser or the appropriate department to avoid registering for a course that the student may have already taken. Credit will not be given twice for the same course, despite a different number and/or title.

The university reserves the right to augment, modify, or cancel the courses listed in this catalog, or to change degree requirements. Except for certain types of advanced courses, a course will be canceled if fewer than ten students register for it.

## COURSE NOTATION INFORMATION

### Explanation of Three-Part Course Numbers

The number preceding each course title is divided into three parts. The first two digits are the administrative code (standing for a faculty or a school), the next three digits are the subject code, and the final three digits are the course code.

#### *Administrative Codes*

The following administrative codes are used in this catalog.

- |       |   |
|-------|---|
| 21    | Newark College of Arts and Sciences<br>(Course normally offered only in the day.)           |
| 62    | University College–Newark<br>(Course normally offered only in the evening and on weekends.) |
| 21&62 | Course offered at both NCAS and UC–N  |
| 25    | College of Nursing  |
| 29    | School of Management  |

### *Subject Codes*

The subject code indicates the subject matter of the course. (This list does not constitute a list of majors.)

- |     |   |
|-----|---|
| 003 | Academic Foundations                            |
| 010 | Accounting                                      |
| 014 | African and Afro-American Studies               |
| 050 | American Studies                                |
| 060 | Ancient Mediterranean Civilizations             |
| 070 | Anthropology                                    |
| 080 | Art   |
| 082 | Art History                                     |
| 084 | Arts Management                                 |
| 090 | Arts and Sciences                               |
| 120 | Biology   |
| 135 | Business Administration                         |
| 160 | Chemistry                                       |
| 190 | Classics  |
| 191 | Clinical Laboratory Sciences                    |
| 195 | Comparative Literature                          |
| 198 | Computer Science                                |
| 202 | Criminal Justice                                |
| 220 | Economics                                       |
| 240 | Education, Elementary                           |
| 250 | Education, General Electives                    |
| 300 | Education                                       |
| 310 | Education, Social & Philosophical Foundations   |
| 350 | English   |
| 352 | English, American Literature                    |
| 390 | Finance   |
| 420 | French  |
| 460 | Geology   |
| 470 | German  |
| 490 | Greek   |
| 500 | Hebraic Studies                                 |
| 510 | History   |
| 512 | History, American                               |
| 522 | International Business and Business Environment |
| 560 | Italian   |
| 570 | Journalism, Media, and Writing                  |
| 580 | Latin   |
| 620 | Management                                      |
| 623 | Management Science and Information Systems      |
| 630 | Marketing                                       |
| 640 | Mathematics                                     |
| 660 | Medical Technology                              |
| 670 | Meteorology                                     |
| 700 | Music   |
| 701 | Music, Applied                                  |
| 730 | Philosophy                                      |
| 750 | Physics   |
| 790 | Political Science                               |
| 830 | Psychology                                      |
| 836 | Puerto Rican Studies                            |
| 840 | Religion  |
| 860 | Russian   |
| 880 | Science, Technology, and Society                |
| 910 | Social Work                                     |
| 920 | Sociology                                       |
| 940 | Spanish   |
| 950 | Speech  |
| 960 | Statistics                                      |
| 965 | Theater Arts                                    |
| 967 | Ukrainian                                       |
| 988 | Women's Studies                                 |



## Course Codes

Courses codes from 100 to 299 indicate introductory and intermediate undergraduate courses. Codes from 300 to 499 indicate advanced undergraduate courses. Courses coded from 500 to 799 are graduate courses and are described in the graduate catalogs of the university.

Two course codes separated by a comma indicate that each term course may be taken independently of the other; e.g., 21&62:350:319,320. Two course codes separated by a hyphen indicate that satisfactory completion of the first term course is a prerequisite to the second term, e.g., 21&62:920:301-302. The first term may be taken for credit without the second, unless a statement is added to indicate that both term courses must be completed in order to receive credit.

## Other Course Notation

**BA** The number of credits is determined by arrangement with the department offering the course.

# ACADEMIC FOUNDATIONS 003

## Department of Academic Foundations Conklin Hall (973/353-5434)

Courses offered by the Department of Academic Foundations are taken by special permission only; students may receive a maximum of 6 credits in these courses. Students must earn a grade of C or better to complete the writing/reading and mathematics courses offered for credit.

## Courses

### 21:003:010,011. BIOLOGY SKILLS (0 + N3)

Two-term course in science skills for students who need preparation for meeting the laboratory science requirement. Emphasis is on the process of science, strategies of problem solving, and scientific content. Intended for students planning to take 21&62:120:101-102 General Biology.

### 21&62:003:015,016. GENERAL BIOLOGY SUPPORT (0 + N1.5)

*Corequisites: 21&62:120:101-102.*

Under the guidance of a faculty member, students learn effective study skills in organized study groups. Following the syllabus of the course being supported, students set the agenda for each class meeting.

### 21&62:003:020,021. CHEMISTRY SKILLS (0 + N3)

Two-term course in science skills for students who need preparation for meeting the laboratory science requirement. Emphasis is on the process of science, strategies of problem solving, and scientific content. Intended for students planning to take 21&62:160:115-116 General Chemistry or 21:160:106-107 Introduction to Chemistry and 21&62:160:116 General Chemistry.

### 21&62:003:022,023. WORLD OF CHEMISTRY SKILLS (0 + N3)

Two-term course in science skills for students who need preparation for meeting the laboratory science requirement. Emphasis is on the process of science, strategies of problem solving, and scientific content. Intended for students planning to take 21&62:160:101-102 World of Chemistry.

### 21&62:003:025,026. GENERAL CHEMISTRY SUPPORT (0 + N1.5)

*Corequisites: 21&62:160:115-116 or 21:160:106-107 and 116.*

Under the guidance of a faculty member, students learn effective study skills in organized study groups. Following the syllabus of the course being supported, students set the agenda for each class meeting.

### 21:003:027,028. WORLD OF CHEMISTRY SUPPORT (0 + N1.5)

*Corequisites: 21&62:160:101-102.*

Under the guidance of a faculty member, students learn effective study skills in organized study groups. Following the syllabus of the course being supported, students set the agenda for each class meeting.

### 21&62:003:030,031. GEOLOGY SKILLS (0 + N3)

Two-term course in science skills for students who need preparation for meeting the laboratory science requirement. Emphasis is on the process of science, strategies of problem solving, and scientific content. Intended for students planning to take 21&62:460:103, 113 or 114 Planet Earth, Earth History, or History of Life.

### 21&62:003:035,036. PLANET EARTH SUPPORT (0 + N1.5)

*Corequisite: 21&62:460:103 or 113, or 114.*

Under the guidance of a faculty member, students learn effective study skills in organized study groups. Following the syllabus of the course being supported, students set the agenda for each class meeting.

### 21&62:003:045,046. GENERAL PHYSICS SUPPORT (0 + N1.5)

*Corequisites: 21&62:750:203-204.*

Under the guidance of a faculty member, students learn effective study skills in organized study groups. Following the syllabus of the course being supported, students set the agenda for each class meeting.

### 21&62:003:060. COLLEGE ALGEBRA SUPPORT (N1.5)

Organized study group under the guidance of a faculty member. Following the syllabus of the course, students set the agenda for each meeting and work collaboratively to enhance their ability to solve difficult problems.

### 21&62:003:064. PRECALCULUS SUPPORT (N1.5)

Organized study group under the guidance of a faculty member. Following the syllabus of the course, students set the agenda for each meeting and work collaboratively to enhance their ability to solve difficult problems.

### 21&62:003:065. CALCULUS SUPPORT (N1.5)

Organized study group under the guidance of a faculty member. Following the syllabus of the course, students set the agenda for each meeting and work collaboratively to enhance their ability to solve difficult problems.

### 21:003:101. COMPUTATION AND BEGINNING ALGEBRA (0 + N6)

Develops awareness of and facility in mathematical thinking. Processes of generalizing, specializing, conjecturing, and justifying are explored through in-depth study of the properties of numbers, powers and roots, linear equations, graphs and applications.

### 62:003:101. COMPUTATION AND BEGINNING ALGEBRA (0 + N3)

Develops awareness of and facility in mathematical thinking. Processes of generalizing, specializing, conjecturing, and justifying are explored through in-depth study of the properties of numbers, powers and roots, linear equations, graphs and applications.

### 21&62:003:102. ELEMENTS OF ALGEBRA AND APPLICATIONS (2 + N2.5)

Study of algebra and applications to other disciplines. Develops insight and facility in rational expressions, radicals, linear and quadratic equations, graphing and applications.

### 21&62:003:142,143. COMMUNICATIONS SKILLS: WRITING AND READING-STUDY SKILLS (2 + N4, 2 + N4)

*Some sections designated for English as a second language.*

Two-term course in language and study skills; developmental activities to enhance the ability to perform the reading, writing, and study tasks required in college and to increase awareness of the uses of language; classroom, tutoring, and computer laboratory work included.

**21&62:003:144. COMMUNICATION SKILLS: DEVELOPMENTAL ENGLISH COMPOSITION (2 + N2.5)**

Students must successfully pass the English Placement Examination to receive credit for this course. Designated for English as a second language students only. Continuation of 21&62:003:142,143 for students not ready for 21:350:101 or 62:350:121; critical reading and intensive writing practice emphasized.

## **AFRO-AMERICAN AND AFRICAN STUDIES 014**

*Department of Afro-American and African Studies  
Conklin Hall (973/353-5528)*

The Afro-American and African studies major and minor are offered at NCAS.

### **Major and Minor Requirements**

The Afro-American and African Studies Department offers an interdisciplinary major that focuses on the historical, socioeconomic, and cultural experiences of African-Americans, and African people in the worldwide diaspora. Courses are also designed to integrate scholarship on gender, race, and class.

Thirty-nine credits are required for a major in the discipline, and twenty-one for a minor.

The senior seminars (21&62:014:411,412) are required courses for the major.

The following courses are required courses for both majors and minors:

- 21&62:014:111,112 Introduction to the Black Experience in Western Culture
- 21&62:014:305 Black Women in the United States
- 21&62:014:306 Comparative Race Relations
- 21&62:014:358 Black Writers of Africa and the Caribbean
- 21&62:014:389 Psychology and Values of the African-American
- 21&62:014:396 The Afro-American Community

Fifteen additional credits in electives are required for completion of the major. The following electives are strongly recommended:

- 21&62:014:220 Contemporary Black Political Thinkers
- 21&62:014:301 African Cultural Retentions in the Americas
- 21&62:014:302 Special Topics in Black Studies
- 21&62:014:304 English Speaking African Writers

Recommended but not required: competency in reading French in order to study major works by French-speaking black writers, poets, and scholars.

### **Courses**

**21&62:014:111,112. INTRODUCTION TO THE BLACK EXPERIENCE IN WESTERN CULTURE (3,3)**

A two-term course required of all Afro-American and African studies majors and minors. Designed primarily for first-year students and sophomores. Historical experiences of blacks in Western culture; psychological and social impact of racism; particular aspects of the black experience throughout the diaspora of the Americas.

**21&62:014:180. HISTORY OF AFRO-AMERICAN EDUCATION (3)**  
Educational experience of Afro-Americans from the post-Civil War period to contemporary times; educational philosophies of Du Bois, Booker T. Washington, and others.

**21&62:014:220. CONTEMPORARY BLACK POLITICAL THINKERS (3)**

Focuses on the writings of recent political thinkers such as Malcolm X, Dr. Martin Luther King, Jr., Fanon, Castro, Nkrumah, and Sekou Toure, in an attempt to draw forth ideas of universal political relevance; examines ways in which ideas from each of the black areas represented differ according to their own political situations.

**21&62:014:278. BLACK SUBCULTURES OF THE U.S.A. (3)**

Focuses on the cultural and social aspects of black ethnic groups, both indigenous and immigrant; examines historical variation within the black population of the U.S. and how it has been affected by immigration from the West Indies and Latin America. Study of southern blacks, speakers of the Gullah dialect, the Creoles of Louisiana, and various West Indian groups in the U.S.; analyzes social interaction and impact of these groups on one another.

**21&62:014:301. AFRICAN CULTURAL RETENTIONS IN THE AMERICAS (3)**

Reviews cultural and adaptation process made by blacks in the Americas from the era of the Atlantic slave trade to the present, using an interdisciplinary base of history, anthropology, literature, and music; introductory focus on traditional African culture; identification and importance of Africanisms which have helped to shape both the historic and contemporary identities of blacks in the U.S., Brazil, Haiti, Surinam, and the West Indies.

**21&62:014:302. SPECIAL TOPICS IN BLACK STUDIES (3)**

Selected topics are offered each term and chosen to represent a wide range of disciplines. Afro-American and African subject areas include economic development, women's roles, film history, literary genres, social institutions, and urbanization.

**21&62:014:304. ENGLISH-SPEAKING AFRICAN WRITERS (3)**

Analysis of the novels, poetry, and plays of contemporary English-speaking African writers such as Achebe, Ekwensi, Soyinka, John Pepper Clark, Mphahlele, La Guma, and others; examines the rejection of the concept of Negritude by certain writers.

**21&62:014:305. BLACK WOMEN IN THE UNITED STATES (3)**

Roles of black women in family life, the workplace, politics, literary and artistic achievement, education, and the struggle for women's rights; incorporates both fictional and nonfictional works to chronologically illuminate the major themes in black women's history and contemporary issues.

**21&62:014:306. COMPARATIVE RACE RELATIONS: SOUTH AFRICA AND THE UNITED STATES (3)**

Chronological and interdisciplinary study of the major themes in the history of race relations in South Africa and the United States; systematic comparisons of slavery, frontier expansion, and the roots of enduring racism, with assessments of their long term effects on social relations in both countries. Examines, comparatively, black rights struggles against apartheid, Jim Crow segregation, and impediments to full democracy.

**21&62:014:333. DECOLONIZATION AND CHANGE IN THE WEST INDIES (3)**

Study of decolonization-by-states, particularly in West Indian commonwealth countries, through the political arrangement of associated statehood of independent and autonomous Caribbean islands; contemporary factors that have influenced social, economic, and political change, and the direction these changes have taken; the decolonization process in the Caribbean.

**21&62:014:356. MINORITY POLITICS AND PUBLIC POLICY (3)**

Study of political power and its impact on minorities; identification of the central theme of minority politics; analysis of the historical basis of the political situation of black Americans as a minority group; social and economic factors that affect the black minority.

**21&62:014:358. BLACK WRITERS OF AFRICA AND THE CARIBBEAN (3)**

*Not open to first-year students. Course conducted entirely in English.*  
Development of the Black Consciousness Movement as reflected in the works of Césaire, Damas, Senghor, and others; controversy surrounding the concept of Negritude; influence of African civilization and art, the Harlem Renaissance, Marxism, surrealism, and other forces on the movement.

**21&62:014:364. EDUCATION AND SOCIAL CHANGE AMONG AFRO-AMERICANS (3)**

Education and social change in the Afro-American community; issues as they affect the content, function, and impact of education; pedagogy, pedagogical styles, busing, accountability, community control, and alternative school systems.

**21&62:014:366. NATIONALISM, LEADERSHIP, AND POLITICAL DEVELOPMENT IN THIRD WORLD NATIONS (3)**

Analysis of nationalistic movements in the third world nations; African leadership and political development since World War II.

**21&62:014:388. SURVEY OF BLACK POLITICAL ECONOMY (3)**

*Not open to first-year students.*  
Exploration of political initiatives that impact on the economic status of the black community; responses developed by the community to economic problems. Analyses of approaches to black economic development: black capitalism, ghetto industries, and community-owned businesses.

**21&62:014:389. PSYCHOLOGY AND VALUES OF THE AFRICAN AMERICAN (3)**

Background information of various theories, concepts, and psychological definitions; emphasis on the black experience viewed in a historical context, with consideration given to the formation of self-concepts and sources of strength in the survival of the black psyche.

**21&62:014:396. THE AFRO-AMERICAN COMMUNITY (3)**

Patterns of development that characterize Afro-American communities in large urban areas of the U.S.; structure and organization of these communities in terms of their responses to the larger culture; distinctive problems affecting black communities and initiatives adopted to overcome them.

**21&62:014:403. THE THIRD WORLD AND THE MEDIA (3)**

*Prerequisite: Junior or senior standing or permission of instructor.*  
Focuses on the importance of the third world and how it is covered by the media. Areas to be covered include: Africa, the Middle East, the Caribbean, Latin America, and Asia. The industrial and strategic importance of these areas is explored; significance of the use of stringers instead of regular staff to provide media coverage; relationship of the U.S. business community and military to the third world reviewed in terms of impact on the news.

**21&62:014:411,412. SENIOR SEMINAR (3,3)**

*Prerequisite: Senior status or permission of instructor. Two-term culminating experience for Afro-American and African Studies majors.*  
Interdisciplinary study highlights both the methodological and theoretical approaches supporting research in the field.

**21&62:014:415. THE HISTORY OF BLACKS IN THE AMERICAN LABOR MOVEMENT (3)**

*Prerequisite: Junior or senior standing or permission of instructor.*  
Traces the itinerary of blacks in American labor organizations; contributions of black Americans to the development of the labor movement. Examines ideology of the labor movement and its relationship to social and political developments, and to the economic structures and forces of American society.

**21&62:014:430. THE AFRO-AMERICAN, THE LAW, AND THE COURTS (3)**

*Prerequisite: Junior or senior standing or permission of instructor.*  
Historical and contemporary relationship and impact of the American judicial system on the black community; review of constitutional, federal, state, and municipal legislation affecting the evolving legal status of black people, and the philosophical and political themes that precipitated their enactment. Case studies examined and systematic appraisal made of the dynamic process—the law, courts, execution, and enforcement of justice.

**21&62:014:465. AFRICAN RELIGIONS AND PHILOSOPHICAL THOUGHT SYSTEMS (3)**

General interweave of religion, culture, and the philosophical system of African societies, and how these elements fuse into an organic whole. Similarities and differences in ideological systems that structure and reflect the society are pinpointed; African religions and philosophy are used to depict the African's relationship to the universe.

**21&62:014:495,496. INDIVIDUAL STUDY IN BLACK STUDIES (3,3)**

Independent reading or research under the direction of a faculty member.

## Other Related Courses

**21&62:070:316. PEOPLES AND CULTURES OF AFRICA (3)**

*See Anthropology 070.*

**21&62:082:275. BLACK ART IN AMERICA (3)**

*See Art History 082.*

**21&62:082:285. ART OF AFRICA (3)**

*See Art History 082.*

**21&62:352:395,396. AFRO-AMERICAN LITERATURE (3,3)**

*See American Literature 352.*

**21&62:510:263,264. HISTORY OF AFRICA (3,3)**

*See History 510.*

**21&62:510:385,386. A HISTORY OF SOUTHERN AFRICA (3,3)**

*See History 510.*

**21&62:512:333,334. AFRO-AMERICAN HISTORY (3,3)**

*See American History 512.*

**21&62:512:472. TOPICS IN AFRO-AMERICAN HISTORY (3)**

*See American History 512.*

**21&62:700:265. JAZZ (3)**

*See Music 700.*

**21&62:790:317,318. GOVERNMENT AND POLITICS OF AFRICA (3,3)**

*See Political Science 790.*

**21&62:920:316. RACE RELATIONS (3)**

*See Sociology 920.*

## AMERICAN STUDIES 050

The major and minor in American studies are offered at NCAS.

*Program Director: Heyward Ehrlich*

### Major Requirements

The major in American studies examines the many cultures of the United States from an interdisciplinary or multidisciplinary point of view. The program is developed by student and adviser around relevant courses in American studies and other disciplines to combine reading, library



research, and fieldwork. Independent study on special projects is encouraged. Each student should select one of the following areas of concentration:

Folklore and folklife  
Literature, fine arts, and history  
Science and technology  
Popular culture and the media

The major requires 30 credits beyond prerequisite courses:

1. Prerequisites:  
21&62:352:223,224 Survey of American Literature  
21&62:512:201,202 Development of the United States
2. 6 credits to include:  
21&62:050:300 Introduction to American Studies *or*  
21&62:050:301 Documentation and  
Research in American Studies; *and*  
21&62:050:488 or 489 Topics in American Studies
3. 6 additional credits in American Studies 050
4. 6 additional credits in American Literature 352 *or*  
American History 512
5. 12 credits in other departments in related courses  
approved by American studies advisers. These courses  
are to be selected to support the area of concentration.

Students interested in a dual major—American studies and another discipline—or an American studies minor should contact an American studies adviser.

## Minor Requirements

The minor consists of 9 elective credits beyond the prerequisite courses listed below:

21&62:352:223,224 Survey of American Literature  
21&62:512:201,202 Development of the United States

## Courses

### 21&62:050:300. INTRODUCTION TO AMERICAN STUDIES (3)

A survey of approaches to the interdisciplinary study of the culture of the U.S.; folk, popular, and elite culture; American myth, folklore, folk music, fine arts, architecture, science and technology, community study, and popular arts and culture.

### 21&62:050:301. DOCUMENTATION AND RESEARCH IN AMERICAN STUDIES (3)

Methods and techniques of research and documentation in the library and in the field pertaining to a current issue in American studies; old and new disciplines draw upon actual resources of the metropolitan area and approaches of two or more related areas.

### 21&62:050:305. NUCLEAR WEAPONS IN AMERICA (3)

Exploration of nuclear weapons and the possibility of global nuclear war in American history and culture.

### 21:050:306. THE VIETNAM WAR AND AMERICA (3)

Explores the interrelations between the U.S. war in Vietnam and American culture—before, during, and after. Attempts to challenge the student's perceptions of historical and cultural reality through a variety of mediums.

### 21&62:050:309. THE AMERICAN LANDSCAPE (3)

A study of Americans' vision of their environment from a variety of perspectives and through a variety of forms of expression; the changing sense of nature and space in America as seen in an examination of selected works of naturalists, explorers, settlers, visitors, writers, painters, and photographers.

### 21&62:050:311,312. POPULAR CULTURE AND THE MEDIA (3,3)

Popular arts, attitudes, folklore, and myths in print, broadcast, electronic, and commercial media; relationship of popular culture to vogues, movements, censorship, audience, leisure, politics, business, and technology; content analysis of actual texts, and examples balanced with a survey of theory, history, and criticism.

### 21&62:050:363. AMERICAN FOLKLORE (3)

Oral tradition in America in its cultural context; folklore from regional, occupational, and ethnic groups; genres include folk songs, folktales, proverbs, folk beliefs, customs, games, and folk ceremonies; collecting folklore in the Newark area required.

### 21&62:050:364. AMERICAN FOLKLIFE (3)

The material aspects of American folk culture, including folk art, folk architecture, foodways, hex signs, tombstone carvings, duck decoys, fraktur, quilts, the log cabin, and *santos*; objects studied in their cultural context; projects on folklife in the Newark area required.

### 21&62:050:391,392. FIELDWORK IN AMERICAN STUDIES (3,3)

Oral history, photographic surveys, historical preservation, or other practical exercises in the collection, analysis, and description of evidence of American culture. The focus each term is a team project.

### 21:050:395. NUCLEAR WAR AND LITERATURE (3)

*Equivalent to 21&62:350:395. Credit not given for both this course and 21&62:350:395.*

The development of nuclear weapons in culture and history from their first appearance as fiction in the first decade of the twentieth century. Examines the imagined futures that now form part of everyday life.

### 21&62:050:403,404. TECHNOLOGY AND CULTURE IN AMERICA (3,3)

*These courses fulfill the technology course requirement in the teacher certification program.*

Design and function of computers and technological systems in America, popular and esthetic responses to them, and the relationship between American culture and American industrialism; course materials drawn from literature, the arts, popular culture, social commentary, political writings, design, and engineering.

### 21&62:050:488,489. TOPICS IN AMERICAN STUDIES (3,3)

*One of these courses required of majors; open to nonmajors.*

Each term the course offers a different topic for intensive, interdisciplinary study in a seminar format; seminar paper required. For specific topics in any term, consult the American studies advisers.

### 21&62:050:498,499. INDIVIDUAL STUDY IN AMERICAN STUDIES (3,3)

*Prerequisite: Permission of instructor or program director.*

Supervised arrangement for readings, a research paper, fieldwork, or an internship in such institutions as the New Jersey Historical Commission, the New Jersey Historical Society, or the Newark Public Library.

## Other Related Courses

The list below will be supplemented by the American studies program office according to current offerings in the *Schedule of Classes*.

### 21&62:014:430. THE AFRO-AMERICAN, THE LAW, AND THE COURTS (3)

*See Afro-American and African Studies 014.*

### 21&62:070:207. INDIANS OF NORTH AMERICA (3)

*See Anthropology 070.*

### 21&62:082:270. AMERICAN ART (3)

*See Art History 082.*

### 21&62:220:304. ECONOMICS OF LABOR (3)

*See Economics 220.*



**21&62:350:377. SCIENCE FICTION, TECHNOLOGY, AND SOCIETY (3)**  
*See English 350.*

**21&62:352:223,224. SURVEY OF AMERICAN LITERATURE (3,3)**  
*See American Literature 352.*

**21&62:512:201,202. DEVELOPMENT OF THE UNITED STATES (3,3)**  
*See American History 512.*

**21&62:570:301. JOURNALISM AND MASS MEDIA (3)**  
*See English 350.*

**21&62:790:201. AMERICAN NATIONAL GOVERNMENT (3)**  
*See Political Science 790.*

**21&62:920:208. SOCIAL PROBLEMS (3)**  
*See Sociology 920.*

**21&62:965:351,352. AMERICAN FILM (3,3)**  
*See Theater Arts 965.*

## **ANCIENT MEDITERRANEAN CIVILIZATIONS 060 (Classics 190, Greek 490, Hebraic Studies 500, Latin 580)**

**Department of Classical and Modern Languages and Literatures**  
*Conklin Hall (973/353-5498)*

*Program Directors:* Gloria S. Merker, Robert R. Stieglitz

The major and minor in Ancient Mediterranean Civilizations are offered at NCAS.

### **Major Requirements**

The cross-cultural and interdepartmental major in ancient Mediterranean civilizations provides an understanding of cultural and social developments in the ancient lands surrounding the Mediterranean Sea. Greek, Roman, and Near Eastern cultures are studied from different points of view, through courses in language, literature, archaeology, anthropology, religion and myth, technology, law, history, philosophy, and art. The ancient Mediterranean civilizations program provides an excellent general education in the humanities, as well as a foundation for graduate studies or professional training, such as law.

The major in ancient Mediterranean civilizations includes courses in Anthropology 070, Classics 190, Greek 490, Hebraic Studies 500, History 510, Latin 580, and Philosophy 730. The major requires the following:

1. 12 credits in courses in history, society, and material culture, selected from the following:
  - 21&62:070:367 Archaeology of the Old World
  - 21:190:214 Greek Archaeology
  - 21:190:215 Roman Archaeology
  - 21:190:310 Ancient Technology
  - 21:190:312 Ancient Warfare
  - 21:190:315,316 Topics in Mediterranean Civilization
  - 21:190:325 Women in Antiquity
  - 21:190:335,336 Ancient Law
  - 21:190:343 Money in the Ancient World
  - 21:190:361,362 Greek Civilization
  - 21:190:363,364 Roman Civilization
  - 21:500:235,236 The World of the Bible
  - 21:500:341,342 Jewish Civilization
  - 21&62:510:235,236 The Ancient World
  - 21&62:510:319,320 The Classical World

2. 12 credits in courses in literature in translation, religion, and thought, selected from the following:
  - 21:190:220,221 Ancient Literatures in English Translation
  - 21:190:255,256 Ancient Myths and Religions
  - 21:190:375 Epic Poetry in English Translation
  - 21:190:381,382 Greek Drama in English Translation
  - 21:500:315,316 Hebrew Literature in English Translation
  - 21&62:730:206 Introduction to Greek Philosophy
3. 15 credits in ancient language courses, taken in one or two languages (see course listings for Greek 490, Hebrew 500, and Latin 580).
4. 3 credits of independent study (21:190:445,446; 21:500:499).
5. A thesis to be written for 3 credits in the senior year under faculty supervision, on a subject approved by the undergraduate program director (21:190:390).

### **Minor Requirements**

The minor consists of 12 credits selected from the courses listed in 1 and 2 under major requirements and 6 credits taken in one language. All of the credits in categories 1 and 2 must be in courses significantly related to the language chosen and must include 3 credits of independent study.

### **Courses (Classics 190)**

#### **21:190:214. GREEK ARCHAEOLOGY (3)**

The material culture of ancient Greece and the Greek colonies in Asia Minor and Italy from the Neolithic period to the first century B.C.

#### **21:190:215. ROMAN ARCHAEOLOGY (3)**

The material culture of ancient Italy and the Roman provinces from the Neolithic period to the third century A.D.

#### **21:190:220,221. ANCIENT LITERATURES IN ENGLISH TRANSLATION (3,3)**

A survey of the literatures of the ancient Mediterranean world, from near Eastern poetry of the third millennium B.C., through Greek epic and drama, the Old and New Testaments, Roman comedy and Satire, to Christian writings of the sixth century A.D. The Semitic, Classical, and Christian literary traditions juxtaposed and compared, to illuminate the cultures at the foundation of Western civilization.

#### **21:190:255,256. ANCIENT MYTHS AND RELIGIONS (3,3)**

Myths and religions of the ancient world, including Greece, Rome, and the Near East. Myths are studied in light of modern theories of mythology; the nature and forms of classical pagan religion, Judaism, and early Christianity are compared.

#### **21:190:310. ANCIENT TECHNOLOGY (3)**

Relationship between technological advance and cultural change in the ancient Mediterranean world; water control, metallurgy, food production, engineering, transport, and the technology of the arts.

#### **21:190:312. ANCIENT WARFARE (3)**

The study of the motives, weapons, and tactics of warfare in the ancient Mediterranean world; the relation of ancient warfare to social, economic, political, and technological development.

#### **21:190:315,316. TOPICS IN MEDITERRANEAN CIVILIZATION (3,3)**

In-depth study of selected subjects in Greek, Roman, and Near Eastern civilizations.

**21:190:325. WOMEN IN ANTIQUITY (3)**

The lives of women in ancient Mediterranean and Near Eastern lands are reconstructed with the aid of archaeological evidence. The relation of this evidence to portrayals of women in ancient literature is considered.

**21:190:335,336. ANCIENT LAW (3,3)**

Major developments in legal codes and procedures in Greece, Rome, and the Near East from ca. 2000 B.C. to the sixth century A.D.

**21:190:343. MONEY IN THE ANCIENT WORLD (3)**

Interaction between social and political developments and the growth of a money economy in the ancient Mediterranean and Near East. The invention and development of coinage; numismatic technology and artistry. Ancient monetary standards; banking and finance; the handling of capital; living standards as understood through documents recording prices. How the existence of coinage affected the accumulation of wealth and influenced social organization.

**21:190:361,362. GREEK CIVILIZATION (3,3)**

Study of the cultural heritage of ancient Greece.

**21:190:363,364. ROMAN CIVILIZATION (3,3)**

The cultural heritage of the Romans, emphasizing Rome's influence on the development of European civilization.

**21:190:375. EPIC POETRY IN ENGLISH TRANSLATION (3)**

Reading in English translation and study of the major ancient Greek and Latin epics; the origin of epic as a literary form and its influence on later classical literature, especially the drama.

**21:190:381,382. GREEK DRAMA IN ENGLISH TRANSLATION (3,3)**

Most of the extant ancient Greek dramas, tragic and comic, are read and discussed; topics include the ritual origins of Greek drama and the technical aspects of the theater, as well as the influence of Greek drama on later classical and European literature.

**21:190:390. SENIOR THESIS (3)**

An extended research paper written during the senior year with faculty guidance.

**21:190:445,446. INDIVIDUAL STUDIES (3,3)**

*Prerequisite: Permission of instructor.*

Study in detail of a selected subject in classical civilization.

**Courses (Greek 490)****21:490:101-102. ELEMENTARY ANCIENT GREEK (3,3)**

*Both terms must be completed to receive credit.*

Fundamentals of Greek grammar and practice in reading.

**21:490:131,132. INTERMEDIATE ANCIENT GREEK (3,3)**

*Prerequisites: 21:490:101-102 or permission of instructor.*

Selected readings in prose and poetry.

**21:490:311. ADVANCED ANCIENT GREEK I (3)**

Selected advanced readings in prose and poetry.

**21:490:312. ADVANCED ANCIENT GREEK II (3)**

Selected advanced readings in prose and poetry.

**21:490:353,354. INDIVIDUAL STUDIES (3,3)**

*Prerequisite: Permission of instructor.*

Study of Greek authors selected according to need and previous preparation of students.

**Courses (Hebraic Studies 500)****21:500:101-102. ELEMENTARY HEBREW (3,3)**

*For students with little or no previous knowledge of Hebrew. Both terms must be completed to receive credit.*

A beginner's course planned to lay a broad foundation for reading, speaking, and writing the language; oral and written exercises.

**21:500:131,132. INTERMEDIATE HEBREW (3,3)**

*For students who have completed 21:500:101-102 or equivalent as determined by placement examination.*

Practice in oral and written composition; selected readings in Hebrew prose and poetry.

**21:500:235,236. THE WORLD OF THE BIBLE (3,3)**

Examination of the data afforded by explorations and excavations of ancient Israelite, Canaanite, Egyptian, and Mesopotamian sites, elucidating (possibly corroborating or else challenging) the details, background, context, and significance of biblical history and the scriptural pages.

**21:500:311. ADVANCED HEBREW I (3)**

Selections from the narrative, legal, and poetic chapters of Genesis, Exodus, Deuteronomy, the Prophets, Proverbs, Daniel, Esther, and Ecclesiastes. Taught in Hebrew.

**21:500:312. ADVANCED HEBREW II (3)**

Representative passages from the Mishnah (with special emphasis on Pirkei Avot) and the Midrashic literature; Aggadic extracts from the Gemara. Taught in Hebrew.

**21:500:315. HEBREW LITERATURE IN ENGLISH TRANSLATION: BIBLICAL (3)**

Selections from the narrative, legal, and poetic chapters of Genesis, Exodus, Deuteronomy, the Prophets, Proverbs, Daniel, Esther, and Ecclesiastes.

**21:500:316. HEBREW LITERATURE IN ENGLISH TRANSLATION: POSTBIBLICAL (3)**

Representative passages from the Mishnah (with special emphasis on Pirkei Avot) and the Midrashic literature; Aggadic extracts from the Gemara.

**21:500:341,342. JEWISH CIVILIZATION (3,3)**

History of the Jewish people from their tribal beginnings, migrations, and metamorphoses; their encounters with Egyptian, Canaanite, and Syrian civilizations; period of Judges and the Monarchy; conquests by Assyrian, Babylonian, Persian, and Greek empires; priestly and prophetic phenomena; the Maccabean revolt and the Hasmonean Kingdom; the rise of Pharisaism and early Christianity; the impact of Imperial Rome; the Hadrianic persecutions and the Bar Kochba uprising; the spread of Jews around the Mediterranean and to northwestern Europe; the consequences of triumphant Christianity and late Islam upon Jewry.

**21:500:499. INDIVIDUAL STUDIES (3)**

*Prerequisite: Permission of instructor.*

Study in detail of a selected subject in Hebraic studies.

**Courses (Latin 580)****21:580:101-102. ELEMENTARY LATIN (3,3)**

*For students with no knowledge of Latin or less than two years of high school Latin. Both terms must be completed to receive credit.*

Fundamentals of Latin grammar and practice in reading.

**21:580:131,132. INTERMEDIATE LATIN (3,3)**

*Prerequisites: 21:580:101-102 or permission of instructor.*

Selected readings in prose and poetry.

**21:580:311. ADVANCED LATIN I (3)**

*Prerequisites: 21:580:131,132 or permission of instructor.*

Selected advanced readings in prose and poetry.

**21:580:312. ADVANCED LATIN II (3)**

*Prerequisite: 21:580:311 or permission of instructor.*

Selected advanced readings in prose and poetry.

**21:580:353,354,453,454. INDIVIDUAL STUDIES (3,3,3,3)**

*Prerequisites: 21:580:131,132 or permission of instructor.*

**21:580:364. LATIN PROSE COMPOSITION (3)**

*Prerequisites: 21:580:131,132 or permission of instructor.*

Exercises in composition to strengthen understanding of syntax and grammar.

**21:580:425. ADVANCED LATIN III (3)**

*Prerequisite: 21:580:312 or permission of instructor.*

Selected advanced readings in prose and poetry.

**21:580:426. ADVANCED LATIN IV (3)**

*Prerequisite: 21:580:425 or permission of instructor.*

Selected advanced readings in prose and poetry.

## ANTHROPOLOGY 070

**Department of Sociology and Anthropology**

Hill Hall (973/353-5255)

The anthropology major and minor are offered at NCAS and the minor is offered at UC–N. Note that the NCAS and the UC–N minor requirements differ.

**Major Requirements: NCAS**

The anthropology major provides students with an understanding of human society in terms of its biological and cultural aspects in the widest historical and comparative framework. This major provides a useful background for students interested in careers in education, research, government service, and other employment where a knowledge of human relations is important.

The requirements for the anthropology major are 30 credits as follows:

1. 18 credits in anthropology that must include
  - 21&62:070:203 Introduction to Physical Anthropology and Archaeology
  - 21&62:070:204 Introduction to Cultural Anthropology
- 3 credits in an area course
  - 21&62:070:207 Indians of North America
  - 21&62:070:316 Peoples and Cultures of Africa
  - 21&62:070:352 Peoples and Cultures of Latin America
  - 21&62:070:353 Peoples and Cultures of Southeast Asia
  - 21&62:070:361 Selected Area Studies
  - 21&62:070:367 Archaeology of the Old World
  - 21&62:070:369 New World Archaeology
- 3 credits in a comparative course
  - 21&62:070:301 Anthropology of Development
  - 21&62:070:303 Anthropology of Postcolonialism
  - 21&62:070:305 Culture and Personality
  - 21&62:070:306 Anthropology of Power
  - 21&62:070:309 Medical Anthropology
  - 21&62:070:310 Comparative Religion
  - 21&62:070:331 Urban Anthropology
  - 21&62:070:337 Anthropology of Inequality
  - 21&62:070:340 Comparative Roles of Women
  - 21&62:070:350 Cultural Ecology
  - 21&62:070:358 Archaeological Theory and Practice
  - 21&62:070:363 Anthropology of Social Life
  - 21&62:070:420 Tribal Warfare
- 3 credits in an advanced seminar
  - 21&62:070:425 Research in Anthropology
  - 21&62:070:492 Seminar in Anthropology *or*  
3 credits of independent study
- 3 credits in one additional anthropology course

2. 12 credits from other course listings in anthropology and sociology. With departmental approval, related courses offered in other departments may be applied toward the major.

**Minor Requirements: NCAS**

The minor requires 18 credits as follows:

1. 12 credits in anthropology which must include
  - 21&62:070:203 Introduction to Physical Anthropology and Archaeology
  - 21&62:070:204 Introduction to Cultural Anthropology
  - 3 credits in an area course
  - 3 credits in a comparative course
2. 6 credits from other course offerings in anthropology and sociology.
3. With departmental approval, related courses offered in other departments may be applied toward the minor.

**Minor Requirements: UC–N**

A minor consists of 18 credits in anthropology, including no more than 9 credits at the 200 level. Closely related courses are considered for minor credit on an individual basis through consultation with the program adviser.

**Courses****21&62:070:203. INTRODUCTION TO PHYSICAL ANTHROPOLOGY AND ARCHAEOLOGY (3)**

The biological and cultural evolution of the human species is traced by examining the fossil and archaeological record, primate behavior, and the significance of human variation.

**21&62:070:204. INTRODUCTION TO CULTURAL ANTHROPOLOGY (3)**

A study of various ways of life—from hunting and gathering to industrial societies. Topics such as marriage, economics, politics, and religion examined; comparisons made to illustrate the principles underlying cultural similarities and differences.

**21&62:070:207. INDIANS OF NORTH AMERICA (3)**

A survey of native American cultures, including the Inuit of the Arctic, the Iroquois, the buffalo hunters of the plains, and the Pueblo dwellers of the Southwest, among others.

**21&62:070:220. ANTHROPOLOGICAL THEORY AND METHODS (3)**

General historical framework; nineteenth-century and contemporary evolutionism, functionalism, structuralism, cultural ecology, Marxism, and postmodernism; the impact of feminism; and anthropological research in libraries and museums, and in the field.

**21&62:070:301. ANTHROPOLOGY OF DEVELOPMENT (3)**

Theoretical approaches to the study of developing nations. Ethnographies that describe the impact of development on people's lives, cultures, and identities.

**21&62:070:303. ANTHROPOLOGY OF POSTCOLONIALISM (3)**

Postcolonial responses to cultural and economic domination in locations such as multinational corporations, media productions, tourist attractions, and religious sites.

**21&62:070:305. CULTURE AND PERSONALITY (3)**

Comparative study of the dynamics of human development and its cultural patterning; readings include autobiographies and ethnographies from several societies and theoretical approaches to understanding the cultural structuring of perception, interaction, and experience; emphasis on interpreting observed social interactions and utilizing life histories.



**21&62:070:306. ANTHROPOLOGY OF POWER (3)**

The body politic and the politics of bodies are ways in which anthropologists analyze the formal and informal organization of power and authority. Anthropological studies of kings and chiefs, lawmakers, and ritual leaders.

**21&62:070:309. MEDICAL ANTHROPOLOGY (3)**

*Prerequisite: 21&62:070:204 or permission of instructor.*

Cross-cultural perspectives on health beliefs and practices; social organization of health care institutions; sociocultural factors in physical and mental health; relationship between human health and the social environment.

**21&62:070:310. COMPARATIVE RELIGION (3)**

Tribal and folk religions of the world in reference to their social context; sociopolitical and economic accompaniments of tribal and folk religions at different stages of social evolution.

**21&62:070:314. TOPICS IN ANTHROPOLOGY (3)**

*Topics vary each term. Consult department for current information.*

**21&62:070:316. PEOPLES AND CULTURES OF AFRICA (3)**

Culture areas of Africa south of the Sahara, from the Bushman and Pygmy hunters to advanced empires of Uganda and the west coast. Technology, society, art, and religion of the indigenous cultures; African cultural history; continuity and change in African cultures today.

**21&62:070:319. ANTHROPOLOGY THROUGH FILM (3)**

Examination and analysis of selected societies and cultures through films and complementary written texts. Study of the process of making documentary and ethnographic films and the related problems of representing "realities" through visual media.

**21&62:070:331. URBAN ANTHROPOLOGY (3)**

Examines the theoretical underpinnings of a variety of urban studies done by anthropologists; individual or group research project.

**21&62:070:337. ANTHROPOLOGY OF INEQUALITY (3)**

Class, race, and gender and how they intersect with power and domination. Study of how systems of inequality work, how they are maintained, and how they are transformed.

**21&62:070:340. COMPARATIVE ROLES OF WOMEN (3)**

Women's roles in societies that range from hunting and gathering bands to agricultural and pastoral chiefdoms, from ancient China to socialist Cuba. Women's experience in the family and community setting, as workers, as individuals, and as leaders. The impact of class, race, and gender on women's experience and consciousness.

**21&62:070:350. CULTURAL ECOLOGY (3)**

Study of anthropological works that interpret cultural phenomena from an ecological viewpoint; basic principles of ecology used to analyze communities and human populations in indigenous, colonial, and developing societies; cultural methods of adaptation and the critical role of technology and economic organization in human ecosystems.

**21&62:070:352. PEOPLES AND CULTURES OF LATIN AMERICA (3)**

Latin-American cultures studied with emphasis on contributions and interactions of native Americans, Iberians, and Africans. Examines the impact of colonialism and neocolonialism; structures of class, race, and gender; and ongoing efforts to implement change. Readings focus on Brazil, Guatemala, and Peru.

**21&62:070:353. PEOPLES AND CULTURES OF SOUTHEAST ASIA (3)**

Analysis of the societies of Vietnam, Malaysia, Indonesia, and other countries of Southeast Asia which include the tribal peoples of the jungle, the peasantry and fishing groups, the large merchants, and princes; impact of the new Western technology on rural and urban family life and other cultural changes occurring in the area.

**21&62:070:358. ARCHAEOLOGICAL THEORY AND PRACTICE (3)**

Examines methods and techniques of archaeological research.

**21&62:070:361. SELECTED AREAS STUDIES (3)**

Analysis of selected cultures and societies, such as those indigenous to North America, the Caribbean, the Middle East, and/or New Guinea and Australia.

**21&62:070:363. ANTHROPOLOGY OF SOCIAL LIFE (3)**

Traditional anthropological concerns of kinship, marriage, household formation, and networks. Recent focuses on the construction of sexuality and gender.

**21&62:070:367. ARCHAEOLOGY OF THE OLD WORLD (3)**

Examination of the evidence for the origins and development of culture in Paleolithic Europe, Asia, and Africa, and the rise of civilization in the Near East.

**21&62:070:369. NEW WORLD ARCHAEOLOGY (3)**

Examines the first peoples of the New World and subsequent cultural development; emphasis on the rise of the high civilizations of America.

**21&62:070:420. TRIBAL WARFARE (3)**

Overview of anthropological knowledge about war. Examination of various aspects of war, cross-cultural variations in its practice, and shifting analytic approaches to the subject of war. Impact of state expansionism on indigenous warfare patterns. Readings selected for ethnographic detail and theoretical significance.

**21&62:070:425. RESEARCH IN ANTHROPOLOGY (3)**

*Prerequisites: Three anthropology courses or permission of the instructor.*  
Topics vary dependent upon current focus of instructor.

**21&62:070:492. SEMINAR IN ANTHROPOLOGY (3)**

*Prerequisites: 21&62:070:204 and two 300-level anthropology courses, or permission of instructor.*  
Intensive study of a single topic or area of anthropological relevance conducted through the exchange of information by participating members of the seminar.

**21&62:070:495. INDEPENDENT STUDY IN ANTHROPOLOGY (3)**

*Prerequisites: Junior or senior standing and permission of instructor.*  
Special, individualized study of an anthropological topic.

## ARCHAEOLOGY

The minor in archaeology is an interdepartmental program administered through the Department of Classical and Modern Languages and Literatures and involving the Department of Sociology and Anthropology and the Department of Geological Sciences.

The minor is offered at NCAS.

### Minor Requirements

The minor requires a minimum of 19 credits, selected from the offerings of the natural sciences, the social sciences, and the humanities.

Group 1 (Natural Sciences)—minimum of 4 credits

*Geology*

21&62:460:103 Planet Earth

21&62:460:104 Planet Earth Laboratory

Group 2 (Social Sciences)—minimum of 6 credits

*Anthropology*

21&62:070:203 Introduction to Physical Anthropology and Archaeology

21&62:070:358 Archaeological Theory and Practice

21&62:070:367 Archaeology of the Old World

21&62:070:369 New World Archaeology

*Hebraic Studies*

21&62:500:235,236 The World of the Bible



### Group 3 (Humanities)—minimum of 6 credits

#### *Classics*

21:190:214	Greek Archaeology
21:190:215	Roman Archaeology
21:190:310	Ancient Technology
21:190:315,316	Topics in Mediterranean Civilization

### Group 4—3 credits

3 additional credits in any one of the above groups, to be taken in the senior year, and to include the writing of a research paper, the subject of which ties together the course of study; *or*

a 3-credit individual study project in a participating department, taken with the approval of the program adviser and instructors involved.

## **ART (Art 080, Art History 082, Arts Management 084)**

### ***Department of Visual and Performing Arts***

*Bradley Hall (973/353-5119)*

The art major (with concentrations in art and design and in art history) and minor are offered at NCAS.

### **Major Requirements**

#### ***Art and Design***

The art and design concentration provides students with an understanding of art as a humanistic discipline and with concepts and skills leading to careers in art and design. Within the concentration, students may further specialize in either fine arts or graphic design. The program consists of sixteen courses earning 48 credits: a required group of foundation courses, an area of emphasis, and a senior thesis. The emphasis is worked out in consultation with an adviser, and is intended to provide development of ideas and skills in a particular area. During the senior year, students in art and design produce a series of works that are shown in an exhibition at the Robeson Center Art Gallery and that also form a portfolio for admission to graduate school or professional job entry. Students take the following courses:

#### 1. Foundation program (18 credits)

*Note:* These courses should be taken as early as possible; they are the prerequisites for other art courses.

21&62:080:102	Design Fundamentals
21&62:080:103	3-D Design Fundamentals
21&62:080:121	Introduction to Drawing
21&62:080:251	Introduction to Painting
21&62:082:101	Introduction to Art History I
21&62:082:102	Introduction to Art History II

#### 2. Area of specialization (12 credits)

#### 3. Art history (9 credits)

One art history course at the 200 level or above

21&62:082:350	Development of Modern Art
21&62:082:360	Art since 1945

#### 4. Critical studies (3 credits)

21&62:080:285	Seminar in Contemporary Art I <i>or</i>
21&62:080:399	Seminar in Contemporary Design

#### 5. Senior program (6 credits)

21&62:080:497	Senior Studio Seminar I <i>and</i>
21&62:080:498	Senior Studio Seminar II;
<i>or</i> 21&62:082:497	Senior Seminar in Art History I <i>and</i> 21&62:082:498
21&62:082:498	Senior Seminar in Art History II

Courses to complete the area of specialization requirement may be selected from the following course offerings in consultation with an adviser:

21&62:080:231,232, 331,332	Graphic Design I,II,III,IV
21&62:080:245	Introduction to Computer Art
21&62:080:251	Introduction to Painting
21&62:080:252, 351,352	Painting II,III,IV
21&62:080:261	Introduction to Photography
21&62:080:262	Photography II
21&62:080:264	Color Photography
21:080:273	Planographic Printmaking
21:080:276	Intaglio Printmaking
21&62:080:281	Introduction to Sculpture
21:080:283	Figure Sculpture
21&62:080:321,322	Drawing III,IV
21&62:080:345	Intermediate Computer Art
21&62:080:354	Experiments in Computer Art
21&62:080:355	Painting and Drawing Workshop
21&62:080:361	Studio Photography
21&62:080:362	Photography Workshop
21&62:080:370	Computers in Graphic Design
21:080:373	Advanced Printmaking
21:080:378	Printmaking Workshop
21&62:080:445	Advanced Experiments in Computer Art
21&62:080:483	Advanced Sculpture Workshop

#### ***Art History***

Credit requirements for a concentration in art history are the same as those for the art and design concentration, except that only 12 credits are required in the foundation program and the 12-credit specialization area is in art history courses at the 200 level and above, selected in consultation with an adviser. The 6-credit senior seminar is required during the senior year to produce a written thesis.

An art history concentration may be combined with a minor in a related discipline. Internships may be arranged in areas of special interest, as appropriate.

#### **Minor Requirements**

The requirements for a minor are the successful completion of 21 credits in art and design, including:

21&62:080:102	Design Fundamentals
21&62:080:121	Introduction to Drawing
21&62:082:101	Introduction to Art History I
21&62:082:102	Introduction to Art History II

The 9 additional credits should be chosen in consultation with an adviser.

#### **Teacher Certification**

Students seeking teacher certification in art must complete the requirements for a major in the art and design concentration as well as satisfy other requirements for certification. For details regarding admission to the teacher education program and the requirements, students should consult both their department adviser and the chairperson of the education department.

#### **Sequence in Arts Management**

The faculty of the Department of Visual and Performing Arts in conjunction with members of the Faculty of Management offers a sequence of six courses as preprofessional training for a wide spectrum of not-for-profit arts management opportunities. The sequence provides students with

the opportunity to acquire specific business skills that can be applied to a profession in the arts. For practical experience, a wide variety of internships are available, some which provide stipends. The sequence comprises the following 18 credits:

- 21&62:080:393,394 Internship in Art (3,3)  
21&62:084:395,396 Issues in Arts Management I,II (3,3)  
21&62:084:408,409,410,411 Topics in Arts Management I,II,III,IV (3,3,3,3)

## Courses (Art 080)

### 21&62:080:102. DESIGN FUNDAMENTALS (3)

*Open to nonmajors. No previous art experience needed.*

Basic studio course to develop visual literacy and skill; basic vocabulary of art and experience in manipulating this vocabulary through actual projects; principles of composition, color theory, and concepts of space; training in use of pencil, pen, paint, and collage techniques.

### 21&62:080:103. 3-D DESIGN FUNDAMENTALS (3)

*Open to nonmajors. No previous art experience needed.*

Basic course to develop an awareness of three-dimensional space through plane, volume, form, light, and rhythm; variety of tools and procedures are used to manipulate space; analysis of a problem through materials, processes, and concepts; basic skills involved in structuring space.

### 21&62:080:121. INTRODUCTION TO DRAWING (3)

*Open to nonmajors. No previous art experience needed.*

Basic studio course to develop skills in representational drawing; trains students in the perception of real world form and space and the transfer of that perception into two-dimensional images; experience in drawing still life, land- and cityscape, and the figure; materials include pencil, conte crayon, and other drawing media.

### 21&62:080:211. CERAMICS I (3)

*Open to nonmajors.*

Covers a wide range of ceramic techniques, including hand-building and wheel techniques using clay and glazes; studio experience supplemented by demonstrations and slides.

### 21&62:080:212. CERAMICS II (3)

*Open to nonmajors. Prerequisite: 21&62:080:211 or permission of instructor.*

Advanced hand-building wheel techniques; skills acquired in the formation of functional vessels and a basic understanding of stoneware clay and glaze techniques.

### 21&62:080:215. CRAFTS I (3)

*Open to nonmajors.*

Significant projects in a variety of techniques; emphasis on the aesthetics and processes involved in fiber art—weaving, quilting, pattern design, and others.

### 21&62:080:216. CRAFTS II (3)

*Prerequisite: 21&62:080:215 or permission of instructor.*

Continuation of 21&62:080:215; advanced fiber and weaving techniques; history of crafts as art stressed through visits to museums and galleries.

### 21&62:080:223. FIGURE DRAWING (3)

*Open to nonmajors. Prerequisite: 21&62:080:121 or permission of instructor.*

Drawing from the figure using a variety of approaches ranging from the analytical and precise to the gestural and expressive; familiarity with the complexities of line, value, and texture, and with the various media approaches gained while drawing from life; materials include pencil, conte crayon, and other drawing media.

### 21&62:080:231. GRAPHIC DESIGN I (3)

*Open to nonmajors. Prerequisites: 21&62:080:102, 121, and sophomore standing or permission of instructor.*

Fundamental design problems emphasizing the use of letterforms (typography) while exploring problem solving in a variety of visual forms, conceptual and analytical approaches, and technical processes. The use of pictographic image-making, symbol design, semantics, visual sequencing and transformation in developing a visual language. One research paper.

### 21&62:080:232. GRAPHIC DESIGN II (3)

*Open to nonmajors. Prerequisite: 21&62:080:231 or permission of instructor.*

Further practice and exploration of typography and typographic processes. Emphasis on various historical and contemporary typographic models. The use of the grid system to explore verbal and visual relationships, typographic hierarchies, and semiotics in expressive compositions. Introduction of type specification, typesetting, copyfitting, and graphic production procedures from traditional methods to digital technology. One research paper.

### 21&62:080:236. ILLUSTRATION I (3)

*Open to nonmajors. Prerequisites: 21&62:080:102, 121.*

Basic media and techniques with emphasis placed on conceptual and analytical thinking; projects include using the concept of transformation to develop solutions derived from real-life information; the purpose and history of illustration. One research paper; field trips.

### 21&62:080:245. INTRODUCTION TO COMPUTER ART (3)

*Open to nonmajors. Prerequisites: 21&62:080:102, 121.*

Bridges the historical traditions of art making with aesthetics of computer technology. Painting, drawing, photo-image manipulation, and computer animation using Macintosh computers.

### 21&62:080:251. INTRODUCTION TO PAINTING (3)

*Open to nonmajors. Prerequisites: 21&62:080:102, 121.*

Studio course introducing the fundamental concepts of painting; various materials and approaches, both abstract and representational, used to deal with form and image.

### 21&62:080:252. PAINTING II (3)

*Open to nonmajors. Prerequisite: 21&62:080:251 or permission of instructor.*

Studio course using a variety of materials and approaches to explore the ways of painting; work is primarily in modes arising from perceptual experience and emphasizes personal expression.

### 21&62:080:261. INTRODUCTION TO PHOTOGRAPHY (3)

*Open to nonmajors.*

All aspects of black and white photography, including creative use of the camera and related darkroom work; the development and history of photographic techniques; demonstration and illustrated lectures and critiques.

### 21&62:080:262. PHOTOGRAPHY II (3)

*Open to nonmajors. Prerequisite: 21&62:080:261 or permission of instructor.*

Black and white photography beyond the introductory level. Development of technical control through the use of the zone system. Lectures on historical as well as contemporary issues in photography. Stress on the development of personal vision.

### 21&62:080:264. COLOR PHOTOGRAPHY (3)

*Open to nonmajors. Prerequisite: 21&62:080:261 or permission of instructor.*

Concepts and techniques involved in the use of color in photography; the relationship of color to ideas about reality and artifice; color as a vehicle for controlling the image, using handcoloring, slides, and full-color reproduction printing techniques.

### 21:080:273. PLANOGRAPHIC PRINTMAKING (3)

*Open to nonmajors. Prerequisites: 21&62:080:102, 121.*

Studio introduction to printmaking, covering the techniques of the screenprint, linocut, woodcut, monoprint, and collograph; a visual vocabulary is developed while learning to print and proof a limited edition; history of printmaking. Field trips.

**21:080:276. INTAGLIO PRINTMAKING (3)**

*Open to nonmajors. Prerequisites: 21&62:080:102, 121.*

Studio introduction to printmaking, covering the techniques of etching, aquatint, and embossing; personal imagery is developed while learning how to print and proof a limited edition; history of printmaking. Field trips.

**21&62:080:281. INTRODUCTION TO SCULPTURE (3)**

*Open to nonmajors. Prerequisites: 21&62:080:102,103, 121.*

Basic principles of sculpture introduced through slides, discussions, and projects; experience working in wood, modeling in clay, building armatures, making molds, casting, and direct plaster work; instruction in the use of power tools and safety procedures in the operation of equipment.

**21:080:283. FIGURE SCULPTURE (3)**

*Open to nonmajors. Prerequisite: 21&62:080:103 or permission of instructor.*

Workshop that deals with individual sculptural concerns, and the function and structure of a sculpture studio; materials and processes determined by instructor and student.

**21&62:080:285. SEMINAR IN CONTEMPORARY ART I (3)**

*Prerequisites: 21&62:082:101,102 and sophomore standing.*

Focus on the problems of the contemporary artist, architect, designer, filmmaker, and photographer in relation to modernist movements, socioeconomic institutions, and ideologies.

**21&62:080:286. SEMINAR IN CONTEMPORARY ART II (3)**

*Prerequisite: 21&62:080:285.*

Focus on the problems of the contemporary artist, architect, designer, filmmaker, and photographer in relation to modernist movements, socioeconomic institutions, and ideologies.

**21&62:080:305. PROBLEMS IN ART (3)**

*Open to nonmajors. Prerequisite: Permission of instructor.*

Seminar directed toward utilizing the mutual benefits of scholarship and studio creativity through activities such as lectures by visiting artists and scholars.

**21&62:080:311. CERAMICS III (3)**

*Open to nonmajors. Prerequisite: 21&62:080:212 or permission of instructor.*

Continued exploration of both wheel and handmade form; emphasis on special structural and design aspects of closed and covered vessels; individual approaches developed.

**21&62:080:312. CERAMICS IV (3)**

*Open to nonmajors. Prerequisite: 21&62:080:311 or permission of instructor.*

Advanced work in clay; aspects of production pottery as well as special firing techniques that combine low- and high-fire glazing.

**21&62:080:315. CRAFTS III (3)**

*Prerequisite: 21&62:080:216 or permission of instructor.*

Continuation of weaving and other crafts skills; role of crafts in the contemporary art world through study of museum collections as well as through further development of skills and aesthetics.

**21&62:080:316. CRAFTS IV (3)**

*Prerequisite: 21&62:080:315 or permission of instructor.*

Addresses individual problems in crafts; emphasis on quality of design, technique, and originality of ideas.

**21&62:080:321. DRAWING III (3)**

*Open to nonmajors. Prerequisite: 21&62:080:121 or 223 or permission of instructor.*

Studio course that continues the development of skills and of perceptual and imaginative responses in creative drawing; drawing from life and from the environment using a variety of drawing materials; emphasis on strong individual development.

**21&62:080:322. DRAWING IV (3)**

*Open to nonmajors. Prerequisites: 21&62:080:121 and 223.*

Advanced development of skills, perceptions, and approaches to drawing the figure; investigation includes experimentation, new media, and improvisation.

**21&62:080:331. GRAPHIC DESIGN III (3)**

*Open to nonmajors. Prerequisite: 21&62:080:232 or permission of instructor.*

*Corequisite: 21&62:080:370.*

Advanced design problems emphasizing visual communication as a basis for experimental work. Further study of various typographic grid systems in single page, multiple page, and dimensional formats to include booklets, folders, posters, cover design and packaging. Various design strategies and processes are applied in organizing complex verbal and pictorial information. One research paper.

**21&62:080:332. GRAPHIC DESIGN IV (3)**

*Open to nonmajors. Prerequisite: 21&62:080:331 or permission of instructor.*

Projects investigate the integration of design into a broad scope of communication formats and printing material and the formulation of a variety of information systems applied to environmental, institutional, and industrial communication problems. Projects include promotional and multidimensional design, public service, visual systems, corporate identity, editorial, and advertising.

**21&62:080:335. ILLUSTRATION II (3)**

*Open to nonmajors. Prerequisite: 21&62:080:236 or permission of instructor.*

Projects beyond the introductory level; develop conceptual and analytical solutions to assignments while expressing and expanding upon personal, visual vocabulary; traditional and nontraditional techniques utilized for book and magazine covers, posters, book illustrations, self-promotion, and album covers; history of illustration. One research paper; field trips.

**21&62:080:336. ILLUSTRATION III (3)**

*Open to nonmajors. Prerequisite: 21&62:080:335 or permission of instructor.*

Advanced course specializing in book illustration, including the production of a limited edition book. Students choose their own subject matter (copy), illustrate, print, design, and bind their book. Instruction in bookkeeping, letterpress printing, linocut, and wood engraving; history of book illustration. Field trips.

**21&62:080:345. INTERMEDIATE COMPUTER ART (3)**

*Open to nonmajors. Prerequisites: 21&62:080:103, 245 or permission of instructor.*

Manipulate, render, and model 3-D images with Macintosh computers. Computer animation and video capture explored.

**21&62:080:351. PAINTING III (3)**

*Open to nonmajors. Prerequisite: 21&62:080:252 or permission of instructor.*

Further development of painting as a means of visual expression; conceptual approaches to painting; synthesizing visual ideas to form an individual style. Viewing exhibitions at museums and galleries included.

**21&62:080:352. PAINTING IV (3)**

*Open to nonmajors. Prerequisite: 21&62:080:351 or permission of instructor.*

Advanced problems in painting while integrating preceding disciplines and experiences with formal, directed approaches; emphasis on individual development and excellence of execution. Viewing exhibitions at museums and galleries included.

**21&62:080:354. EXPERIMENTS IN COMPUTER ART (3)**

*Prerequisites: 21&62:080:245, 345, or permission of instructor.*

Planning and initiating of computer projects in areas of 2-D/3-D imaging systems, including video digitizing. Covers the basic steps for computer video animation from idea development, scripting, storyboarding, to actual production.

**21&62:080:355. PAINTING AND DRAWING WORKSHOP (3)**

*Prerequisites: 21&62:080:223, 252.*

Studio course using wet and dry media. Introduction to the watercolor medium, collage techniques, and mixed media methods. These processes, as well as traditional oil painting and drawing techniques, are used to explore themes and concepts in the work.



**21&62:080:361. STUDIO PHOTOGRAPHY (3)**

*Open to nonmajors. Prerequisite: 21&62:080:261 or permission of instructor.*  
 Concepts and processes involved in photography as manipulated in a studio setting; traditional and innovative approaches to artificial lighting, still life, and portraiture; experience with view camera and advanced light metering techniques.

**21&62:080:362. PHOTOGRAPHY WORKSHOP (3)**

*Open to nonmajors. Prerequisite: 21&62:080:261 or permission of instructor.*  
 Advanced work in all areas of photography based on projects designed to fit individual needs; emphasis on development of aesthetic and critical dimensions in photography. Students carry out ideas and techniques independently.

**21&62:080:370. COMPUTERS IN GRAPHIC DESIGN (3)**

*Open to nonmajors. Prerequisite: 21&62:080:232 or permission of instructor. Corequisite: 21&62:080:331.*  
 Advanced typographic workshop using Macintosh computers. Stresses design and typographic principles while exploring the language of signs in compositional exercises. Typesetting, image-making, scanning software, electronic page makeup, pre-press, and printing production procedures.

**21:080:373. ADVANCED PRINTMAKING (3)**

*Open to nonmajors. Prerequisite: 21&62:080:273 or 276.*  
 Advanced studio in printmaking; emphasis on exploration of previously learned printmaking techniques to develop personal imagery. Proof and print a minimum of five prints; research paper on the history of printmaking; field trips.

**21:080:378. PRINTMAKING WORKSHOP (3)**

*Prerequisite: Permission of instructor.*  
 Studio course in book arts. Emphasis on letterpress and traditional bookbinding techniques. Additional printmaking techniques are explored within the context of book arts. Course work includes developing artists' books of images, writing, and other textual information. Research on the private press; field trips.

**21&62:080:391,392. INDIVIDUAL STUDY IN STUDIO (3,3)**

*Prerequisites: Permission of department chairperson and instructor.*  
 Special problems in original creative work. Independent studio work in any of the disciplines offered.

**21&62:080:393,394. INTERNSHIP IN ART (3,3)**

*Prerequisite: Permission of department chairperson or adviser.*  
 Opportunity to explore career experience in art and design; limited to students with highly developed skills. Placements, designed to ensure maximum benefit to the student, may be in graphic design studios, as apprentices to artists, or in arts management positions. Under department supervision.

**21&62:080:399. SEMINAR IN CONTEMPORARY DESIGN (3)**

*Prerequisites: 21&62:082:101,102, 202; 21&62:080:232.*  
 Focus on contemporary topics and issues in design theory, history, criticism, and practice.

**21&62:080:405. PROBLEMS IN CONTEMPORARY ART (3)**

*Open to nonmajors. Prerequisite: Permission of instructor.*  
 Examination of significant ideas and problems in contemporary painting, sculpture, and multimedia; emphasis on the current scene.

**21&62:080:445. ADVANCED EXPERIMENTS IN COMPUTER ART (3)**

*Open only to majors. Prerequisites: 21&62:080:245, 354.*  
 Advanced work in computer graphic systems including video animation. Emphasis on development of aesthetic and a critical understanding of imaging technology. Students initiate and complete independent projects.

**21&62:080:483. ADVANCED SCULPTURE WORKSHOP (3)**

*Open to nonmajors. Prerequisite: 21&62:080:283 or permission of instructor.*  
 Continues the development of individual expression in sculpture; production of a body of aesthetically consistent work by each student.

**21&62:080:497. SENIOR STUDIO SEMINAR I (3)**

*Open only to majors. Prerequisite: Completed course work in area of specialization.*  
 Focuses on advanced studio work and the completion of a portfolio in area of graphic design specialization. Conducted under the direction of individual advisers.

**21&62:080:498. SENIOR STUDIO SEMINAR II (3)**

*Open only to majors.*  
 Under the supervision of advisers, students produce, for an exhibition, a body of work in their individual areas of specialization. One research paper and slide documentation of work required.

**Courses (Art History 082)****21&62:082:101. INTRODUCTION TO ART HISTORY I (3)**

*Recommended for nonmajors.*  
 Emphasizes the significance and meaning of art in our civilization; selective overview of Western and some non-Western art from prehistoric times to the Renaissance; the important arts of major cultures and periods addressed through illustrated lectures, readings, and museum visits.

**21&62:082:102. INTRODUCTION TO ART HISTORY II (3)**

*Recommended for nonmajors.*  
 Survey of art of the past few centuries; emphasis on tendencies leading to modern developments; develop the ability to respond to and to feel at ease with contemporary art forms, and to gain familiarity with major works of art and important artists. Illustrated lectures and readings, museum and gallery visits.

**21&62:082:201. HISTORY OF NON-WESTERN ART (3)**

*Recommended for nonmajors.*  
 Examines the form, function, content, and style of art in several cultures and civilizations around the world from past to present—Asian, Pacific, African, Islamic, and Native American. Slide lectures, museum visits, and research paper.

**21&62:082:202. HISTORY OF DESIGN (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission of instructor.*  
 Focuses on graphic design from nineteenth century to present. Includes analysis of the arts and crafts movement, art nouveau, art deco, de Stijl, and later developments such as the international style, modernism, postmodernism, and beyond. Slide lectures, research papers, and museum and gallery visits.

**21&62:082:207. ART AND WOMEN (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission of instructor.*  
 Explores the historically varied roles of women as makers and patrons of art. Analyzes images of the female body and its relation to cultural views of gender, sexuality, and race. Emphasizes feminist art and art history. Slide lectures, museum visits, and research paper.

**21&62:082:270. AMERICAN ART (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission instructor.*  
 Focuses on American painting, sculpture, and photography within the context of the developing society and its tastes; emphasis on art and artists in the nineteenth century through the early twentieth century. Slide lectures and museum visits.

**21&62:082:275. BLACK ART IN AMERICA (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission of instructor.*  
 Examines both the high art and folk art aspects of black American art from a historical and contemporary point of view; emphasis on the aesthetics of the works and their relation to social and intellectual history. Field trips to New York and within the Newark area to see folk art and to visit artists.

**21&62:082:280. ART OF THE FAR EAST (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission of instructor.*  
 History of art in Japan, India, and China from the earliest periods to modern times; emphasis on understanding the aesthetics of Asian art. Slide lectures and museum trips to outstanding Asian collections at the Newark Museum and in New York.



**21&62:082:285. ART OF AFRICA (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission of instructor.*  
The classical traditions of sculpture and related arts of the black people of Africa; impact of African forms on modern Western art and on cultural traditions of the new nations of Africa. Slide lectures and museum trips to the Newark Museum and New York collections.

**21&62:082:305. PROBLEMS IN ART (3)**

*Open to nonmajors. Prerequisite: Permission of instructor.*  
Addresses specific topics in the history of art.

**21&62:082:310. ANCIENT ART (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission of instructor.*  
Arts of the civilizations of Mesopotamia, Egypt, Greece, and Rome as reflections of the ideas and ideals of these cultures; study of architecture, sculpture, painting, ceramics, and other arts; the contributions of these great cultures of antiquity to the later Western world. Slide lectures and museum trips.

**21&62:082:320. MEDIEVAL ART (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission of instructor.*  
History of art from the fall of Rome to the Renaissance—Early Christian and Byzantine, Romanesque and Gothic; great sculptural and architectural monuments of the Age of Faith, as well as the fine small objects created by the migratory tribes of the Dark Ages. Slide lectures and museum trips.

**21&62:082:330. RENAISSANCE ART (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission of instructor.*  
Examines European painting, sculpture, and architecture from about 1400 to 1580; emphasis on the major masters of the period—Jan van Eyck, Donatello, Leonardo da Vinci, Dürer, Michelangelo, El Greco, and others—whose artistic legacy provides a visual record of this important period in Western civilization. Slide lectures and museum trips.

**21&62:082:340. BAROQUE AND ROCOCO ART (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission of instructor.*  
European art and architecture from 1580 to 1800; emphasis on the great masters of the period—Rembrandt, Rubens, Caravaggio, Bernini, Velazquez, and others; survey of the transformation of the Baroque style into the Rococo. Slide lectures and museum visits.

**21&62:082:350. DEVELOPMENT OF MODERN ART (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission of instructor.*  
Traces the development of modern art from 1870 to 1945, focusing on major trends from neoclassicism to surrealism. Slide lectures and museum visits.

**21&62:082:360. ART SINCE 1945 (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission of instructor.*  
Explores art since 1945. Emphasizes styles such as abstract expressionism, minimalism, pop, neorealism, and neo-expressionism as new and developing trends in art. Slide lectures, and museum and gallery visits.

**21&62:082:382. HISTORY OF PHOTOGRAPHY (3)**

*Open to nonmajors. Prerequisites: 21&62:082:101,102, or permission of instructor.*  
Surveys technical and aesthetic development of photography from prephotography optical inventions to contemporary photographic art.

**21&62:082:391,392. INDIVIDUAL STUDY IN ART HISTORY (3,3)**

*Prerequisites: Permission of department chairperson and instructor.*  
Special work in art history research. Directed by faculty member; designed to meet specific interests.

**21&62:082:393,394. INTERNSHIP IN ART HISTORY (3,3)**

*Prerequisite: Permission of department chairperson or adviser.*  
Opportunity to explore career possibilities. Limited to students interested in developing curatorial and exhibition skills through museum or gallery work; intern in the Robeson Center Art Gallery on the Newark campus or in other locations, under department supervision.

**21&62:082:405. PROBLEMS IN CONTEMPORARY ART (3)**

*Open to nonmajors. Prerequisite: Permission of instructor.*  
Examination of significant ideas and problems in contemporary painting, sculpture, and multimedia; emphasis on the current scene.

**21&62:082:497,498. SENIOR SEMINAR IN ART HISTORY (3,3)**

*Open to majors only. Prerequisite: Completed course work in area of specialization.*  
Culminating courses for the major concentrating in art history. Thesis topic selected in consultation with the adviser. Demonstration of a general knowledge of art history required.

**Courses (Arts Management 084)****21&62:084:395. ISSUES IN ARTS MANAGEMENT I (3)**

*Prerequisites: 29:620:201; 202 or 318; or 328; and 21&62:080:102; or 21&62:082:101,102; or 21&62:965:211; or 21&62:700:101.*  
Introduction to not-for-profit arts management with emphasis on organizational structure, personnel and staffing, U.S. policies, and financial and legal issues.

**21&62:084:396. ISSUES IN ARTS MANAGEMENT II (3)**

*Prerequisite: 21&62:084:395.*  
Second part of the introduction to not-for-profit arts management with emphasis on resource development, marketing, facilities management, accounting, and computer applications.

**21&62:084:408,409,410,411. TOPICS IN ARTS MANAGEMENT I,II,III,IV (3,3,3,3)**

*Prerequisites: 21&62:084:395,396.*  
Focuses on one of the following topics each term: marketing the arts, fund-raising and resource development for arts organizations, financial management for arts not-for-profits, and organizational management in the arts.

**BIOCHEMISTRY (See Biological Sciences)****BIOLOGICAL SCIENCES**

*Department of Biological Sciences*  
Smith Hall, 135 (973/353-5437)  
Web site: <http://biology-newark.rutgers.edu>  
Email: [biosci@newark.rutgers.edu](mailto:biosci@newark.rutgers.edu)

Majors and minors in biology, botany, and zoology are offered at NCAS.

**Biology**

The biology major introduces students to the fundamental concepts, principles, and procedures characteristic of several major conceptual approaches to organisms. The major provides a solid foundation in biology and also permits students to specialize in any of the major branches of biology.

The biology major is useful for students whose career plans lie in pure or applied biology: agriculture; biochemistry; biotechnology; botany; conservation, environmental quality, and natural resources; dentistry; ecology; food science and nutrition; forestry; genetics; horticulture; human medicine; limnology, marine biology, and biological oceanography; microbiology; natural history and nature study; pharmacy; plant pathology; public health; teaching of biology; toxicology; veterinary medicine; wildlife management; and zoology. Students considering admission to medical, dental, or veterinary schools should meet with the prehealth adviser, Dr. John Maiello, in 301 Hill Hall, 973/353-5705.

In the sophomore year, each biology major will be assigned one member of the faculty to serve as a permanent academic counselor; consultation should occur with this person on a regular basis. An informative brochure is available in the departmental office.

## Major Requirements

The biology major consists of 35 credits in biological sciences plus cognate courses in chemistry, physics, and mathematics. The following requirements define the major in biology. All courses required for the major in biology, including cognate courses, must be completed with a grade of C or better. Students are urged to meet with their advisers regularly.

1. 21&62:120:101-102 General Biology (8)
2. 21&62:120:301 Foundations of Biology: Cell and Molecular Biology (4)
3. Students must complete one course from each of the four categories listed below under major conceptual approaches to organisms (13–14 credits).
  - a. *Organismal Approach*. Biology and systematics of organismal groups from a phylogenetic perspective.
    - 21&62:120:211 Plant Kingdom
    - 21&62:120:311 Taxonomy of Vascular Plants
    - 21&62:120:320 Comparative Anatomy of Vertebrates
    - 21&62:120:322 Evolution
    - 21&62:120:327 Biology of Invertebrates
  - b. *Functional Approach*. Functional mechanisms of living organisms.
    - 21&62:120:230 Biology of Seed Plants
    - 21&62:120:330 Plant Physiology
    - 21&62:120:335 General Microbiology
    - 21&62:120:340 Mammalian Physiology
  - c. *Molecular and Cellular Approach*. Structure and function of living systems at the molecular and cellular levels.
    - 21&62:120:355 Cell Biology
    - 21&62:120:356 Molecular Biology
    - 21&62:120:360 Elementary Biochemistry
  - d. *Ecological Approach*. Organism environment interactions; the structure and function of populations, communities, and ecosystems.
    - 21&62:120:370 Plant Ecology
    - 21&62:120:380 Animal Ecology
    - 21&62:120:481 Marine Biology
4. Students are required to have at least one laboratory course dealing with animal systems and one laboratory course dealing with plant systems. Please note that some of these courses may also be used to fulfill the requirements of number 3 above. However, the same course may not be used to satisfy both laboratory and field requirements.

### Animal laboratory courses

- 21&62:120:320 Comparative Anatomy of Vertebrates
- 21&62:120:327 Biology of Invertebrates
- 21&62:120:340 Mammalian Physiology
- 21&62:120:342 Developmental Biology
- 21&62:120:358 Microanatomy of Cells and Tissues
- 21&62:120:443 Immunology

### Plant laboratory courses

- 21&62:120:211 Plant Kingdom
  - 21&62:120:230 Biology of Seed Plants
  - 21&62:120:311 Taxonomy of Vascular Plants
  - 21&62:120:330 Plant Physiology
  - 21&62:120:414 Phycology
  - 21&62:120:415 Paleobotany
  - 21&62:120:430 Plant Growth and Development
5. Students are required to have at least one course with a field component, as listed below. Please note that some of these courses may also be used to fulfill requirements in number 3 above. However, the same course may not be used to satisfy both field and laboratory requirements.
    - 21&62:120:311 Taxonomy of Vascular Plants
    - 21&62:120:327 Biology of Invertebrates
    - 21&62:120:371 Field Studies in Plant Ecology
    - 21&62:120:381 Field Studies in Animal Ecology
    - 21&62:120:415 Paleobotany
    - 21&62:120:470 Field Ecology
    - 21&62:120:481 Marine Biology
    - 21&62:120:486 Tropical Field Biology
  6. In addition to the above, the following courses may be used to complete the 35 credits for the biology major:
    - 21&62:120:325 Animal Parasites
    - 21&62:120:326 Laboratory Exercises in Parasitology
    - 21&62:120:328 Ornithology
    - 21&62:120:352 Genetics
    - 21&62:120:382 Animal Behavior
    - 21&62:120:403 Biological Ultrastructure
    - 21&62:120:404 Light and Electron Microscopy
    - 21&62:120:413 Mycology
    - 21&62:120:445 Endocrinology
    - 21&62:120:451 Cellular Biophysics
    - 21&62:120:452 Molecular Biotechnology
    - 21&62:120:455 Molecular Cell Biology
    - 21&62:120:456 Virology
    - 21&62:120:471 Ecological Physiology
    - 21&62:120:472 Environmental Assessment
    - 21&62:120:487 Systems Ecology
    - 21&62:120:491-492 Problems in Biology
    - 21&62:120:493-494 Seminar in Biology
  7. In addition to the requirements in the biological sciences, the following cognate courses are required:
    - a. 21&62:160:115-116 General Chemistry *and*  
21&62:160:113-114 General Chemistry Laboratory
    - b. 21&62:160:335-336 Organic Chemistry *and*  
21&62:160:331 Organic Chemistry Laboratory
    - c. 21&62:750:203,204 General Physics *and*  
21&62:750:205,206 Introductory Physics Laboratory
    - d. 21&62:640:135 Calculus I

Questions concerning the applicability of individual courses to the major should be directed to the undergraduate coordinator of the Department of Biological Sciences, Room 139, Smith Hall, 973/353-1268. With written permission of the undergraduate coordinator, qualified majors may use certain graduate courses selected from the offerings of the Graduate Program in Biology and the Graduate Program in Behavioral and Neural Sciences at the Graduate School–Newark to fulfill the credit requirement for the biology major.

## Minor Requirements

The biology minor requires a minimum of 20 credits and includes the following courses:

1. 21&62:120:101-102 General Biology (8)
2. 21&62:120:301 Foundations in Biology: Cell and Molecular Biology (4)
3. One course from each of three of the four categories (a-d) of courses listed under Major Conceptual Approaches to Organisms in the description of the biology major in this catalog (12-15 credits).

Questions concerning the minor should be directed to the undergraduate coordinator of the Department of Biological Sciences, Room 139, Smith Hall, 973/353-1268.

### Teacher Certification

Students seeking teacher certification in biology must complete the requirements for the biology major as well as satisfy other requirements for certification. For details regarding admission to the teacher education program and the requirements, students should consult both their department adviser and the chairperson of the education department.

### Botany

The Department of Biological Sciences offers a strong fundamental curriculum in botany, which can be tailored to the individual needs of students. Students with interests or career goals in the fields of botany, plant biotechnology, biology, teaching biology, plant pathology, mycology, ecology, plant physiology, genetics, forestry, horticulture, and agriculture are urged to discuss their academic program with a faculty adviser in the plant science area in the Department of Biological Sciences.

### Major Requirements

All courses required for a major in botany, including cognate courses, must be completed with a grade of C or better. Students are urged to meet with their advisers regularly.

1. A minimum of 35 credits in the biological sciences is required for the botany major, including:
  - 21&62:120:101-102 General Biology
  - 21&62:120:211 Plant Kingdom
  - 21&62:120:301 Foundations in Biology: Cell and Molecular Biology
  - 21&62:120:330 Plant Physiology
  - 21&62:120:370 Plant Ecology
  - 21&62:120:430 Plant Growth and Development
  - Elective courses in the plant sciences (12 credits)

The following nonmajor courses may *not* be used to fulfill the botany major: 21&62:120:109 Basic Plant Science, 21&62:120:110 Basic Plant Science Laboratory, 62:120:203 Plant Biology, 21&62:120:204 Economic Botany, 21&62:120:205 Environmental Issues, 21&62:120:206 General Horticulture, 21&62:120:207 Horticulture Laboratory.
2. The following cognate courses are also required for the botany major:
  - a. 21&62:160:115-116 General Chemistry *and* 21&62:160:113-114 General Chemistry Laboratory
  - b. 21&62:160:335-336 Organic Chemistry *and* 21&62:160:331 Organic Chemistry Laboratory
  - c. 21&62:750:203,204 General Physics *and* 21&62:750:205,206 Introductory Physics Laboratory
  - d. 21&62:640:135 Calculus I

### Minor Requirements

The following courses are required for the botany minor:

- 21&62:120:101-102 General Biology
- 21&62:120:211 The Plant Kingdom
- 21&62:120:301 Foundations in Biology: Cell and Molecular Biology

Additional course from those offered in the plant sciences by the Department of Biological Sciences for a minimum of 20 credits. Credits used for the botany minor cannot be used for a biology or zoology major. A minor in biology and a minor in zoology also are available.

### Zoology

#### Major Requirements

All courses required for a major in zoology, including cognate courses, must be completed with a grade of C or better. Students are urged to meet with their advisers regularly.

The major in zoology requires a minimum of 35 credits in the Department of Biological Sciences. The major must include:

1. 21&62:120:101-102 General Biology
2. 21&62:120:301 Foundations in Biology: Cell and Molecular Biology
3. 21&62:120:335 General Microbiology *or* 21&62:120:360 Elementary Biochemistry
4. 21&62:120:340 Mammalian Physiology
5. 21&62:120:320 Comparative Anatomy of Vertebrates *or* 21&62:120:327 Biology of Invertebrates
6. 21&62:120:342 Developmental Biology *or* 21&62:120:325,326 Animal Parasites *and* Laboratory Exercises in Parasitology *or* 21&62:120:358 Vertebrate Histology
7. 21&62:120:322 Evolution *or* 21&62:120:382 Animal Behavior
8. 21&62:120:380 Animal Ecology *or* 21&62:120:481 Marine Biology
9. A minimum of one 400-level course offered by the Department of Biological Sciences, not including 21&62:120:491,492 Problems in Biology
10. The following cognate courses must be completed prior to the senior year:
  - a. 21&62:160:115-116 General Chemistry *and* 21&62:160:113-114 General Chemistry Laboratory
  - b. 21&62:160:335-336 Organic Chemistry *and* 21&62:160:331 Organic Chemistry Laboratory
  - c. 21&62:750:203,204 General Physics *and* 21&62:750:205,206 Introductory Physics Laboratory
  - d. 21&62:640:135 Calculus I

The following courses are recommended for zoology majors: 21&62:198:101 Computers and Programming I and 21&62:220:231 Statistical Methods.

#### Minor Requirements

The following courses are required for the zoology minor:

- 21&62:120:101-102 General Biology
- 21&62:120:301 Foundations in Biology: Cell and Molecular Biology

Additional courses from those offered in the zoology major by the Department of Biological Sciences, for a minimum of 20 credits.



## Courses

### 21&62:120:101-102. GENERAL BIOLOGY (4,4)

*Lec. 3 hrs., lab. self-paced, averaging 3 hrs. per wk.*

Lectures, laboratories, and small group discussions on major biological principles and their relevance to humans. Topics in 101 include the anatomy, physiology, and ecology of animals and plants. Topics in 102 include cell biology, genetics, and evolution.

### 21&62:120:104. HUMAN HEALTH AND DISEASE (3)

*Intended for students with no previous college biology or chemistry. May not be used for credit toward biology, botany, or zoology majors.*

Provides an introduction to the functions of the healthy human body and the mechanisms and consequences of various pathologic conditions.

### 21&62:120:109. BASIC PLANT SCIENCE (3)

*Not open to either those who have taken or plan to take 21&62:120:101-102 or to majors.*

Introduction to basic botany and the applied plant sciences; plant biology with applications to ecology and conservation, food and drug problems, horticulture, and agriculture; demonstrations in greenhouses and campus plantings.

### 21&62:120:110. BASIC PLANT SCIENCE LABORATORY (1)

*Not open to either those who have taken or plan to take 21&62:120:101-102 or to majors. May be taken with 21&62:120:109 to fulfill the laboratory science requirement when taken with 21&62:120:206,207.*

Laboratory exercises in the areas covered in the description of 21&62:120:109.

### 62:120:203. PLANT BIOLOGY (3)

*Not open to biology, botany, or zoology majors.*

An evolutionary survey of the plant kingdom, with emphasis on the flowering plants, their structure, and major life processes.

### 21&62:120:204. ECONOMIC BOTANY (3)

*May not be used for credit toward biology, botany, or zoology majors.*

The influence of plants and plant cultivation on the economic, social, and cultural history of man; introduction to economically important plants and their products, especially as sources of food, shelter, clothing, drugs, and industrial raw materials; current problems of agriculture, plant industry, and medicine; the use and conservation of natural plant resources.

### 21&62:120:205. ENVIRONMENTAL ISSUES (3)

*May not be used for credit toward the biology, botany, or zoology major.*

Basic ecological principles; the human population and attempts to control it; human impact on the environment—air and water pollution, land use and misuse, conservation of resources.

### 21&62:120:206. GENERAL HORTICULTURE (3)

*May not be used for credit toward biology, botany, or zoology majors.*

Basic principles of horticultural science; environmental control of plant growth; theories and methods of plant propagation and cultivation; introduction to ornamental plants.

### 21&62:120:207. HORTICULTURE LABORATORY (1)

*Pre- or corequisite: 21&62:120:206. May not be used for credit toward biology, botany, or zoology majors. May be taken with 21&62:120:206 to satisfy laboratory science requirement in conjunction with 21&62:120:109,110.*

Practical experience in horticulture; emphasis on plant growth, propagation and maintenance in laboratory greenhouse, experimental gardens, and growth chambers.

### 21&62:120:208. HUMAN SEXUALITY (3)

*May not be used for credit toward the biology, botany, or zoology major or minor.*

Reproductive biology, including anatomy and development of sexual structures, menstrual cycle, pregnancy, and childbirth; self-examination, contraception and abortion, and sexually transmitted diseases; role of emotions, communication skills, and values in sexuality; diversity of sexual behavior and legal and commercial aspects of sexuality.

### 21&62:120:211. PLANT KINGDOM (4)

*Lec. 3 hrs., lab. 3 hrs. Pre- or corequisites: 21&62:120:101-102 or permission of instructor.*

A survey of the major groups in the plant kingdom; the morphology, reproduction, and evolution of plants with emphasis on their role in nature and importance to man.

### 21&62:120:230. BIOLOGY OF SEED PLANTS (4)

*Lec. 3 hrs., lab. 3 hrs. Pre- or corequisites: 21&62:120:101-102 or permission of instructor.*

The morphology, physiology, and reproduction of flowering plants, plant structures, functions, and products essential to human life; the cultural and applied aspects of plant science.

### 21&62:120:235. MICROBIOLOGY (3)

*Lec. 2 hrs., lab 3 hrs. Prerequisites: 21&62:120:241-242 or equivalent. Open only to students in the College of Nursing.*

Fundamentals of microbiology, including the distinguishing characteristics of the various groups of microbial cells; microbial control, including physical and chemical agents and chemotherapeutic agents; applications in personal and public health and in industry; mechanisms of disease production and host resistance; prevention and control of disease.

### 21&62:120:241-242. ANATOMY AND PHYSIOLOGY (4,4)

*Lec. 3 hrs., lab. 3 hrs. May not be used for credit toward the biology, botany, or zoology major. Intended for students with career goals in allied health sciences. Either course may be taken first.*

Examination of integrated structure and function of the human body from the aspect of levels of organization. Emphasis is on homeostatic mechanisms.

### 21&62:120:301. FOUNDATIONS OF BIOLOGY: CELL AND MOLECULAR BIOLOGY (4)

*Lec. 3 hrs., lab. 3 hrs. Prerequisites: 21&62:120:101-102 or placement exam and 21:160:115.*

Lectures, discussions, and laboratory exercises in cell structure, thermodynamics, membrane biology, energy utilization and transfer, and nucleic acid structure and function, transcription, translation, and genetic regulation.

### 21&62:120:311. TAXONOMY OF VASCULAR PLANTS (4)

*Lec. 3 hrs., lab. and field trips 3 hrs. Prerequisite: 21&62:120:211 or 230 or permission of instructor.*

The principles of plant systematics, especially as applied to vascular plants. The identification, classification, and evolutionary relationship of major plant groups with emphasis on the local flora with extensive field trips.

### 21&62:120:320. COMPARATIVE ANATOMY OF VERTEBRATES (4)

*Lec. 3 hrs., lab. 3 hrs. Pre- or corequisites: 21&62:120:101-102.*

Phylogeny of gross structure and structural integration in the vertebrates; laboratory work on amphioxus, lamprey, dogfish, and cat.

### 21&62:120:322. EVOLUTION (3)

*Prerequisites: 21&62:120:301, 352. Recommended: 21&62:120:356.*

Principles and mechanisms of evolution and history of evolutionary theory; mechanisms of animal speciation and adaptive radiation; the role of population and genetics in understanding microevolution.

### 21&62:120:325. ANIMAL PARASITES (3)

*Pre- or corequisites: 21&62:120:301 plus one advanced course in zoology.*

The parasitic protozoa, flatworms, roundworms, and arthropods in relation to their hosts.

### 21&62:120:326. LABORATORY EXERCISES IN PARASITOLOGY (1)

*Lab. 3 hrs. Prerequisites: 21&62:120:301 plus one advanced course in zoology. Corequisite: 21&62:120:325.*

Visualization, preparation, and identification of parasitic animals (protozoa, flatworms, roundworms, and arthropods) and host-parasite interactions.



**21&62:120:327. BIOLOGY OF INVERTEBRATES (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisites: 21&62:120:101-102.*

The major animal phyla; emphasis throughout on reasoning about the interrelationships of structure, function, and behavior in their ecological and evolutionary contexts. Laboratory work emphasizes living animals; supplemented by fieldwork. One weekend field trip required.

**21&62:120:328. ORNITHOLOGY (3)**

*Lec. 3 hrs. Prerequisites: 21&62:120:101-102.*

A survey of birds and their biology. The course includes such topics as the diversity of birds and how they live; avian evolution; classification; structure and physiology; embryology and development; flight; migration and navigation; breeding biology; social organization and communication; instinct, learning and intelligence; birds and people. Lectures are supplemented by films and optional visits to museums and a field trip.

**21&62:120:330. PLANT PHYSIOLOGY (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisite: 21&62:120:301 or permission of instructor.*

Growth and metabolism of plants; water relations, photosynthesis, inorganic nutrition, metabolism of organic materials, and plant growth regulators.

**21&62:120:335. GENERAL MICROBIOLOGY (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisites: 21&62:120:301 and 21&62:160:331.*

Biology of prokaryotic organisms: their taxonomy, physiology, metabolism, and significance in nature.

**21&62:120:340. MAMMALIAN PHYSIOLOGY (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisite: 21&62:120:301.*

The physiology of the human as a mammal. Function and homeostatic regulation of neuromuscular, cardiovascular, respiratory, endocrine, digestive, and excretory systems.

**21&62:120:342. DEVELOPMENTAL BIOLOGY (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisite: 21&62:120:301. Recommended: 21&62:120:320.*

Descriptive and experimental approaches to molecular, cellular, and organismal changes during development; mechanisms of cell differentiation, organogenesis, morphogenesis, and pattern formation.

**21&62:120:352. GENETICS (3)**

*Prerequisite: 21&62:120:301.*

The basic principles and mechanisms of genetics and their application to current problems.

**21&62:120:355. CELL BIOLOGY (3)**

*Prerequisites: 21&62:120:301, 21&62:160:116, and one term of organic chemistry.*

Emphasis on the cell as the structural and functional unit of life; recent advances in molecular biology are integrated with recent knowledge of the ultrastructure and function of cells; includes features of prokaryotes and eukaryotes of plants and animals and an introduction to viruses.

**21&62:120:356. MOLECULAR BIOLOGY (3)**

*Prerequisite: 21&62:120:301.*

The molecular basis of gene regulation in eukaryotic cells, including DNA technology, chromosome structure, gene organization and expression.

**21&62:120:358. MICROANATOMY OF CELLS AND TISSUES (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisite: 21&62:120:301. Open to juniors and seniors only.*

Structure and function of cells, organelles, tissues, and organs.

**21&62:120:360. ELEMENTARY BIOCHEMISTRY (3)**

*Prerequisites: 21&62:120:301; 21&62:160:335. Corequisite: 21&62:160:336.*

The chemistry and metabolism of proteins, carbohydrates, lipids, nucleic acids, and other biologically important compounds.

**21&62:120:370. PLANT ECOLOGY (3)**

*Pre- or corequisites: 21&62:120:101-102.*

Study of plants in relation to their environment; emphasis on local plant communities, modern methods of analysis, and applications to forestry and conservation.

**21&62:120:371. FIELD STUDIES IN PLANT ECOLOGY (3)**

*Prerequisite: 21&62:120:370 or permission of instructor.*

Modern and classical methods are employed in the study of plant communities and plant geography across the region.

**21&62:120:380. ANIMAL ECOLOGY (3)**

*Pre- or corequisites: 21&62:120:101-102.*

The principles of ecology, with emphasis on vertebrate animals; factors affecting their distribution and abundance.

**21&62:120:381. FIELD STUDIES IN ANIMAL ECOLOGY (2)**

*Lec. 1 hr., lab. and field trips 3 hrs. Prerequisites: 21&62:120:380 and permission of instructor.*

Basic field techniques for the study of animals in their natural habitats; principles of animal ecology as demonstrated in field and laboratory work.

**21&62:120:382. ANIMAL BEHAVIOR (3)**

*Pre- or corequisites: 21&62:120:101-102.*

From the genetic and neurobiological bases of behavior through animal communication and social systems; evolutionary processes that shape the behaviors of animals in their natural environment.

**21&62:120:403. BIOLOGICAL ULTRASTRUCTURE (3)**

*Lec. 2 hrs., lab. 3 hrs. Prerequisites: 21&62:120:301 and permission of instructor.*

For the student who has some histological background, makes the transition from light microscopy to electron microscopy; the ultrastructural appearance and functions of the subcellular organelles.

**21&62:120:404. LIGHT AND ELECTRON MICROSCOPY (4)**

*Lec. 2 hrs., lab. 6 hrs. Prerequisite: 21&62:120:403.*

Processing of pieces of tissue through to finished light microscope slides and electron micrographs; the techniques involved in producing micrographs; a paper interpreting what is in the micrographs required.

**21&62:120:413. MYCOLOGY (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisite: 21&62:120:301 or permission of instructor.*

Morphology, physiology, and reproduction of the fungi; emphasis given to cytomorphology, evolution of the principal families of the fungi, and the important relationships between fungi and other organisms, including man.

**21&62:120:414. PHYCOLOGY (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisite: 21&62:120:211.*

The structure, function, reproduction, and evolutionary relationships of the algae, with emphasis on ecological and physiological aspects.

**21&62:120:415. PALEOBOTANY (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisite: 21&62:120:211 or 230, or permission of instructor.*

Survey of evolutionary trends in the plant kingdom; comparative study of the morphology, anatomy, and reproduction of fossil plants and their survivors, with emphasis on the vascular plants.

**21&120:430. PLANT GROWTH AND DEVELOPMENT (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisites: 21&62:120:230 and 330, or permission of instructor.*

Study of the dynamics of growth and development of plants as influenced by physiological and environmental factors. Laboratory focuses on plant tissue culture and applications to biotechnology.

**21&62:120:435. MICROBIAL PHYSIOLOGY AND METABOLISM (3)**

*Prerequisites:* 21&62:120:335, 360.

Biology of prokaryotic organisms. Emphasis on those physiological, biochemical, and ecological aspects that are unique to bacteria.

**21&62:120:443. IMMUNOLOGY (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisite:* 21&62:120:301 or permission of instructor.

The capability of the body to respond to disease organisms; the immune response, current theories of antibody formation, transplantation, hypersensitivity, and response to cancer viruses and carcinogens; basic immunologic techniques.

**21&62:120:445. ENDOCRINOLOGY (3)**

*Prerequisites:* 21&62:120:301, 21&62:160:113-114, and 115-116.

The structures and functions of the endocrine glands and their role in the integration of the organism.

**21&62:120:451. LABORATORY IN CELLULAR AND MOLECULAR BIOLOGY I: CELLULAR BIOPHYSICS (4)**

*Lec. 3 hrs., lab. 3 hrs. Admission by permission of instructor only. Prerequisites:* 21&62:120:330 or 355 or 356; 21&62:160:115,116; 21&62:750:203,204.

Laboratory intensive course with lectures and discussion covering the physical principles governing eukaryotic cell function. Emphasis placed on the electrical properties of excitable cells and model membrane systems. Introduction to the principles underlying light and electron microscopy.

**21&62:120:452. LABORATORY IN CELLULAR AND MOLECULAR BIOLOGY II: MOLECULAR BIOTECHNIQUES (4)**

*Lec. 3 hrs., lab. 3 hrs. Admission by permission of instructor only. Prerequisites:* 21&62:120:301, 356.

Lecture and laboratory course on principles and techniques of molecular biotechnology. Emphasis on recent techniques in molecular biology. Laboratory exercises include isolation, cloning, and sequencing of genetic material; protein purification; gel electrophoresis of proteins and nucleic acids; DNA synthesis; RFLP's and PCR techniques; construction and screening of cDNA and genomic libraries. Industrial applications of molecular biology are presented.

**21&62:120:455. MOLECULAR CELL BIOLOGY (3)**

*Lec. 3 hrs. Prerequisites:* 21&62:120:355,356. *Recommended:* 21&62:120:360.

Advanced analysis of cellular systems with emphasis on cytoplasmic structure and function.

**21&62:120:456. VIROLOGY (3)**

*Prerequisite:* 21&62:120:335 or permission of instructor.

Structure and function of viruses; modes of infection, virus-host interaction, and viral reproduction.

**21&62:120:470. FIELD ECOLOGY (3)**

*Prerequisites:* 21&62:120:101-102 and permission of instructor.

Field-oriented study of plants and plant communities; field and laboratory work are combined to demonstrate and analyze plant communities and their abiotic environment; modern instruments and techniques are used in a problem-solving approach.

**21&62:120:471. ECOLOGICAL PHYSIOLOGY (3)**

*Prerequisite:* 21&62:120:380.

The physiological and ecological factors that permit and facilitate the adaptation of animal populations to diverse environments

**21&62:120:472. ENVIRONMENTAL ASSESSMENT (3)**

*Prerequisite:* 21&62:120:370 or permission of instructor.

Lectures, readings, fieldwork, practical demonstration and evaluations used to study the science of environmental assessment and to explore regulatory framework in which the science may be applied to real-world situations (e.g., natural resource inventories, polluted soil and water, and wetlands).

**21:120:481. MARINE BIOLOGY (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisites:* 21&62:120:101-102. *Recommended:*

21&62:120:327, 380.

Basic ecology of the marine environment; primary producers, zooplankton, benthic ecology, human impact on the sea, including fisheries and pollution. Field trips to nearby salt marsh, mud flat, rocky shore, and sandy beach habitats plus a shipboard experience.

**21&62:120:486. TROPICAL FIELD BIOLOGY (2)**

*Course is for two weeks at the University of Puerto Rico (Mayaguez). The course fee includes round trip airfare, housing, local transportation, and all expenses except meals. Because vigorous outdoor activity is required, students must be in good physical condition. Prerequisite:* Written permission of instructor.

*Enrollment limited to twelve students.*

An intensive two-week summer course in tropical biology given in Puerto Rico. Emphasis on principles of ecology and diversity of organisms. Extensive field trips include: tropical rain forest, desert, mangrove swamp, Karst topography, coral reef, and commercial plantations.

**21&62:120:487. SYSTEMS ECOLOGY: ECOSYSTEMS IN THE LANDSCAPE (3)**

*Prerequisite:* 21&62:120:370 or 380.

Lectures and problem sets on ecological energetics, soil-plant-atmosphere continuum, effect of spatial pattern on ecological process, landscape ecology, and other broad-scale approaches to ecology.

**21&62:120:491,492. PROBLEMS IN BIOLOGY (BA,BA)**

*Outstanding juniors and seniors may enroll in this course under the supervision of a qualified faculty member with written permission of the faculty member and the department chairperson. No more than six problems credits may be used toward the botany, biology, or zoology majors without written permission of the student's academic adviser and the department chairperson.*

**21&62:120:493,494. SEMINAR IN BIOLOGY (1,1)**

*Open to juniors and seniors with a cumulative grade-point average of at least 3.0 and with permission of instructor. No more than 2 credits may be used toward a major.*

Discussion of selected topics with emphasis on current research.

## CHEMISTRY 160

### Department of Chemistry

Olson Hall (973/353-5329), or see [newark.rutgers.edu/~cheminfo](http://newark.rutgers.edu/~cheminfo).

The chemistry major and minor are offered at NCAS.

### Major Requirements

The undergraduate curriculum in chemistry has been designed to provide instruction in each of the major areas of chemistry. It provides excellent training for those who intend to go to graduate school or professional schools such as schools of medicine, dentistry, veterinary medicine, law, and pharmacy, and for those seeking employment in the vast chemical research industry of New Jersey.

The degrees offered by the chemistry department are accredited by the American Chemical Society. A suggested sequence of courses leading to the B.A. degree in chemistry is outlined below. The department is very well-equipped with current state-of-the-art research instrumentation in several fields of chemical inquiry. Chemistry majors are encouraged to participate in research conducted by the faculty starting as early as the sophomore or junior year, contingent on the student's progress.

## First Year

### Fall Term

- 21&62:350:101 English Composition (3)  
21&62:120:101 General Biology (3)\*  
21&62:160:113 General Chemistry Laboratory (1)  
21&62:160:115 General Chemistry (3)  
21&62:640:135 Calculus I (3) †  
history (3)  
social science (3)

### Spring Term

- 21&62:350:102 English Composition (3)  
21&62:120:102 General Biology (3)\*  
21&62:160:114 General Chemistry Laboratory (1)  
21&62:160:116 General Chemistry (3)  
21&62:640:136 Calculus II (3)  
history (3)  
social science (3)

## Sophomore Year

### Fall Term

- 21&62:160:207 Structure and Bonding (3) ‡  
21&62:160:335 Organic Chemistry (3)  
21&62:750:203 General Physics I (3) or 21&62:750:213  
Elements of Physics (3)  
21&62:750:205 Introductory Physics Laboratory (1)  
literature (3)  
foreign language or elective (3)

### Spring Term

- 21&62:160:331 Organic Chemistry Laboratory (2)  
21&62:160:336 Organic Chemistry (3)  
21&62:750:204 General Physics II (3) or 21&62:750:214  
Elements of Physics (3)  
21&62:750:206 Introductory Physics Laboratory (1)  
literature (3)  
foreign language or elective (3)

## Junior Year

### Fall Term

- 21&62:160:227 Experimental Analytical Chemistry (3)  
21&62:160:345 Physical Chemistry (3)  
interdisciplinary elective (3)  
electives (6)

### Spring Term

- 21&62:160:346 Physical Chemistry (3)  
21&62:198:101 Computers and Programming I (3)  
fine arts elective (3)  
electives (6)

## Senior Year

### Fall Term

- 21&62:160:413 Inorganic Chemistry (3)  
21&62:160:427 Physical Chemistry Laboratory (4)  
21&62:160:453 Seminar (1)  
electives (9)

### Spring Term

- 21&62:160:448 Synthesis and Characterization (4)  
21&62:160:454 Seminar (1)  
electives (12)

\* Optional, but strongly recommended for premedical students. Taken in place of history or social science elective, which would be taken instead in a later term.

† 21&62:640:114 Precalculus may be enrolled in first. If so, students enroll in Calculus I in the spring term and Calculus II in the fall term of the sophomore year.

‡ May be enrolled in fall term of junior year.

## Minor Requirements

The Department of Chemistry requires the following courses for the minor:

- 21&62:160:113-114 General Chemistry Laboratory (1,1)  
21&62:160:115-116 General Chemistry (3,3)  
21&62:160:227 Experimental Analytical Chemistry (3)  
21&62:160:340 Physical Chemistry for the  
Life Sciences (3)  
5 additional credits in chemistry

## American Chemical Society Certification

To qualify for American Chemical Society certification, students must complete 6 credits of graduate (500-level) courses in addition to the requirements for the bachelor's degree.

## Teacher Certification

Students seeking teacher certification in comprehensive science must complete the requirements for a major in the chemistry department as well as satisfy other requirements for certification. For details regarding admission to the teacher education program and the requirements, students should consult both their department adviser and the chairperson of the education department.

## Courses

### 21&62:160:101-102. WORLD OF CHEMISTRY (3,3)

A nonmathematical course for nonscience majors; major concepts and the interfaces of chemistry with technology, biology, and the environment.

### 21&62:160:106-107. INTRODUCTION TO CHEMISTRY (2,2)

The two courses in this sequence cover the same material covered in the one-term course 21&62:160:115 General Chemistry.

### 21&62:160:108. ORGANIC BIOCHEMISTRY (3)

Emphasis on biochemical aspects of organic chemistry.

### 21&62:160:109,110. WORLD OF CHEMISTRY LABORATORY (1,1)

Lab. 3 hrs. For laboratory science requirement.

A basic laboratory in chemistry which may be elected to accompany 21&62:160:101-102.

### 21&62:160:113-114. GENERAL CHEMISTRY LABORATORY (1,1)

Lab. 3 hrs. Pre- or corequisites: 21&62:160:115-116.

General chemistry laboratory for science majors. Emphasis on some of the principles of quantitative and qualitative chemical analysis. See [chemistry.rutgers.edu](http://chemistry.rutgers.edu) for more information.

### 21&62:160:115-116. GENERAL CHEMISTRY (3,3)

Lec. 3 hrs., rec. 1 hr. Prerequisite: One year of high school chemistry.

Note: Students must have successfully completed, or have placed out of, 21&62:640:113 College Algebra before registering for 21&62:160:115. Students must have successfully completed, or placed out of, 21&62:640:114 Precalculus before registering for 21&62:160:116. Designed for science majors. Credit not given for the course without the successful completion of 21&62:160:113-114.

Introduction to the fundamental principles of chemistry.

### 21&62:160:207. STRUCTURE AND BONDING (3)

Prerequisite: 21&62:160:116.

Introduction to mathematical topics necessary for understanding physical chemistry. Additional topics include atomic structure, symmetry and group theory, and an introduction to molecular orbital theory.



**21&62:160:227. EXPERIMENTAL ANALYTICAL CHEMISTRY (3)**

Lec. 1 hr., lab. 6 hrs. Prerequisites: 21&62:160:113-114, 115-116.

A course for students requiring additional training in analytical techniques; analyze unknowns chosen to illustrate basic techniques and some newer instrumental methods.

**21&62:160:331. ORGANIC CHEMISTRY LABORATORY (2)**

Lab. 3 hrs. Prerequisites: 21&62:160:113-114, 115-116, 335. Pre- or corequisite: 21&62:160:336.

Introduction to the techniques and the safety precautions of practical organic chemistry; the synthesis, isolation, purification, and behavior of compounds representing important classes.

**21&62:160:335-336. ORGANIC CHEMISTRY (3,3)**

Prerequisites: 21&62:160:115-116.

Study of carbon compounds with emphasis on the principal classes of aliphatic and aromatic compounds; molecules and systems of biological interest.

**21&62:160:340. PHYSICAL CHEMISTRY FOR THE LIFE SCIENCES (3)**

Prerequisites: 21&62:160:115-116 and 21&62:640:135.

Introduction to physical chemical concepts as applied to life sciences; thermodynamics, kinetics, solutions of electrolytes, and electrochemistry.

**21&62:160:345,346. PHYSICAL CHEMISTRY (3,3)**

Prerequisites: 21&62:160:116, 207; 21&62:640:136; and 21&62:750:203-204 or 213-214.

The gaseous, liquid, and solid states; phase equilibria, properties of solution, fugacity and activity, free energy changes of chemical reactions, and surface and colloid chemistry; atomic and molecular structure, crystal chemistry, the chemical bond, chemical kinetics, and statistical thermodynamics.

**21&62:160:413. INORGANIC CHEMISTRY (3)**

Prerequisites: 21&62:160:207, 345,346.

Atomic and molecular structure, transition metal chemistry, descriptive chemistry of the representative elements, and some special topics.

**21&62:160:427. PHYSICAL CHEMISTRY LABORATORY (4)**

Lec. 1 hr., lab. 8 hrs. Prerequisites: 21&62:160:345,346, 21&62:350:101-102, and senior standing or permission of instructor

An integrated physical chemistry laboratory course, including the synthesis of inorganic compounds with emphasis on instrumental methods of analysis. Course content parallels that of the lecture courses 21:160:345,346 and 413.

**21&62:160:448. SYNTHESIS AND CHARACTERIZATION (4)**

Prerequisites: A grade of C or better in 21&62:160:207, 227, 331, 335-336, 413, and 21&62:350:101-102.

Advanced, firsthand experience with organic and inorganic reactions and syntheses on varying scales. Synthesize, isolate, and purify organic and organometallic materials and characterize them using chromatographic and spectroscopic methods.

**21&62:160:451,452. CHEMICAL RESEARCH (BA,BA)**

Open to qualified students with permission of instructor. Hours to be arranged.

**21&62:160:453,454. SEMINAR (1,1)**

Hours to be arranged.

Seminar in chemistry required of all majors in their senior year. Invited speakers present seminars and each student is required to address the group at least once during the year.

**CLASSICS 190 (See Ancient Mediterranean Civilizations)****CLINICAL LABORATORY SCIENCES 191**

Coordinator: Douglas W. Morrison, 973/353-1268

A major in clinical laboratory sciences (CLS) leading to the bachelor of science degree is offered jointly with the University of Medicine and Dentistry of New Jersey–School of Health Related Professions in Newark (UMDNJ–SHRP) and the Department of Biological Sciences at Rutgers–Newark. The major is offered at NCAS. Students graduating with degrees in CLS become members of health care teams contributing to the diagnosis and treatment of disease. CLS majors are readily employed in a variety of health care, industrial, governmental, and educational settings and also may elect graduate programs in a number of specializations, such as basic and applied science, medical school, and dental school.

Clinical laboratory science majors take three years of course work at Rutgers–Newark. They must apply to the senior clinical year at UMDNJ–SHRP beginning the following June through a separate admissions process. Admission requirements for the senior clinical year include a cumulative grade-point average of 2.75 and grades of C or better in all prerequisite core science courses taken at Rutgers–Newark. Once admitted, students register for their senior clinical year at UMDNJ–SHRP specializing in cytotechnology, medical technology, or toxicology. For more information about the joint program, contact the undergraduate coordinator, or:

Dr. Rita Turkall, Chairperson  
Department of Clinical Laboratory Sciences  
School of Health Related Professions  
University of Medicine and Dentistry of New Jersey  
65 Bergen Street  
Newark, NJ 07107  
973/972-5578

Course requirements to be taken at NCAS and at UMDNJ–SHRP for the three options are as follows.

**Core Rutgers–NCAS Courses Required of all CLS Majors (38 credits)**

21&62:120:101-102 General Biology (4,4)  
21&62:120:301 Foundations in Biology: Cell and Molecular Biology (4)  
21&62:120:340 Mammalian Physiology (4)  
21&62:120:355 Cell Biology (3)  
21&62:160:113-114 General Chemistry Laboratory (1,1)  
21&62:160:115-116 General Chemistry (3,3)  
21&62:160:331 Organic Chemistry Laboratory (2)  
21&62:160:335-336 Organic Chemistry (3,3)  
21&62:960:211 Statistics I (3)

**Cytotechnology Option****Required Rutgers–Newark Courses (11 credits)**

21&62:120:320 Comparative Anatomy of Vertebrates (4)  
21&62:120:335 General Microbiology (4)  
21&62:640:114 Precalculus (3)



### **Elective Rutgers–Newark Courses (12 credits)**

It is recommended that electives be chosen from:

21&62:120:325	Animal Parasites (3)
21&62:120:342	Developmental Biology (4)
21&62:120:352	Genetics (3)
21&62:120:358	Microanatomy of Cells and Tissues (4)
21&62:120:403	Biological Ultrastructure (3)
21&62:120:404	Light and Electron Microscopy (4)
21&62:120:443	Immunology (4)
21&62:120:445	Endocrinology (3)

### **Professional Courses at UMDNJ–SHRP (38 credits)**

#### **Fourth Year**

#### **First Term**

CYTO 4110	Gynecologic Cytology (4)
CYTO 4120	Gynecologic Cytology Laboratory (4)
CYTO 4169	Clinical Practicum I (2)
CYTO 4289	Cytoprep Techniques I (1)
CYTO 4350	Cytogenetics (1)
CYTO 4389	Cytoprep Techniques II (2)
IDST 4111	Dynamics of Health and Society I (1)

#### **Second Term**

CYTO 4209	Respiratory Cytology (3)
CYTO 4239	Urinary Cytology (2)
CYTO 4249	Body Fluid Cytology (3)
CYTO 4312	Clinical Laboratory Skills (1)
CYTO 4369	Clinical Practicum II (2)
CYTO 4370	Independent Study (3)
CYTO 4390	Gastric Cytology (2)

#### **Summer Term**

CYTO 4469	Clinical Practicum III (7)
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### **Medical Technology Option**

#### **Required Rutgers–Newark Courses (11 credits)**

21&62:120:335	General Microbiology (4)
21&62:120:443	Immunology (4)
21&62:640:114	Precalculus (3)

#### **Elective Rutgers–Newark Courses (11 credits)**

It is recommended that electives be chosen from:

21&62:120:352	Genetics (3)
21&62:120:356	Molecular Biology (3)
21&62:160:227	Experimental Analytical Chemistry (3)
21&62:750:203,204	General Physics (3,3)
21&62:750:205,206	General Physics Laboratory (1,1)

#### **Professional Courses at UMDNJ–SHRP (45 credits)**

#### **Third Year**

#### **Summer Term**

CLSC 2119	Clinical Laboratory Skills I (2)
CLSC 2129	Hematology I (2)
CLSC 2169	Body Fluids (1)
CLSC 2239	Immunohematology and Clinical Immunology I (4)

### **Fourth Year**

#### **First Term**

CLSC 2249	Clinical Chemistry I (4)
CLSC 2279	Clinical Microbiology I (4)
CLSC 4339	Immunohematology II (2)
CLSC 4449	Clinical Practice in Chemistry (2)
IDST 4111	Dynamics of Health and Society I (1)

#### **Second Term**

CLSC 4319	Clinical Laboratory Skills II (2)
CLSC 4329	Hematology II (3)
CLSC 4349	Clinical Chemistry II (3)
CLSC 4359	Clinical Immunology II (1)
CLSC 4379	Clinical Microbiology II (2)
CLSC 4429	Clinical Practice in Hematology and Urinalysis (2)

#### **Summer Term**

CLSC 4339	Clinical Practice in Immunology (2)
CLSC 4379	Clinical Practice in Microbiology (2)
CLSC 4390	Medical Technology Seminar (2)
CLSC 4489	Independent Study (3)

### **Toxicology Option**

#### **Required Rutgers–Newark Courses (17 credits)**

21&62:160:227	Experimental and Analytical Chemistry (3)
21&62:640:135,136	Calculus I,II (3,3)
21&62:750:203,204	General Physics (3,3)
21&62:750:205,206	General Physics Laboratory (1,1)

#### **Elective Rutgers–Newark Courses (7 credits)**

It is recommended that electives be chosen from:

21&62:120:335	General Microbiology (4)
21&62:120:352	Genetics (3)
21&62:120:356	Molecular Biology (3)

#### **Professional Courses at UMDNJ–SHRP (38 credits)**

#### **Third Year**

#### **Summer Term**

TOXC 4110	Toxic Agents (3)
TOXC 4115	Organ System Toxicity (3)

#### **Fourth Year**

#### **First Term**

TOXC 4220	Principles of Pharmacology (4)
TOXC 4239	Clinical Toxicology (3)
TOXC 4241	Forensic Toxicology (1)
TOXC 4250	Pathology for Toxicology (4)
TOXC 4291	Research in Toxicology (2)
IDST 4111	Dynamics of Health and Society I (1)

#### **Second Term**

TOXC 4339	Clinical Toxicology Internship (4)
TOXC 4349	Forensic Toxicology Internship (1)
TOXC 4370	Regulatory Toxicology (2)
TOXC 4380	Toxicology Seminar (2)
TOXC 4399	Research in Toxicology II (4)

#### **Summer Term**

TOXC 4469	Industrial Externship (4)
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## COMPUTER SCIENCE 198

### Department of Mathematics and Computer Science

Smith Hall (973/353-5156), or see [newark.rutgers.edu/~nwkmath/](http://newark.rutgers.edu/~nwkmath/)

The major and minor in computer science and the major in information systems are offered at NCAS and UC-N by the Department of Mathematics and Computer Science.

Computer science (CS) and information systems (IS) majors are offered jointly with the New Jersey Institute of Technology (NJIT). Students take courses at Rutgers under the 21&62:198 prefixes. They may register at Rutgers for courses at NJIT through cross-registration under the 28:198 prefix. The school code 28 identifies a course offered at NJIT. Thus, for example, the course listed as CIS 490 in the NJIT catalog becomes 28:198:490 for Rutgers students. A listing of computer science courses offered at NJIT is given in the section of this catalog entitled, "Consortium with New Jersey Institute of Technology."

The computer science and information systems majors share a common core of computer science courses. The CS major is intended for those students who wish to concentrate on the theoretical and practical aspects of computer science. It requires additional courses in mathematics and advanced computer science. The IS major is intended for those students who wish to prepare for a career in business involving computers.

### Major Requirements: Computer Science

A total of 54 credits is required for the computer science major.

The following are required computer science courses:

21&62:198:101	Computers and Programming I
21&62:198:102	Computers and Programming II
21&62&28:198:231	Machine and Assembly Language Programming
28:198:251	Computer Organization
28:198:332	Principles of Operating Systems
21&62&28:198:335	Data Structures and Algorithm Design
28:198:435	Advanced Data Structures and Algorithm Design
28:198:490	Guided Design in Software Engineering
21&28:198:491	Computer Science Project

Three elective courses from a list of 300- or 400-level courses offered by the Department of Mathematics and Computer Science or by the NJIT CIS department are required. No more than 3 credits may be taken from among the following courses: 21&62:198:493, 494, 495, and 496. The following is a list of recommended courses offered at NJIT:

28:198:333	Introduction to UNIX Operating Systems
28:198:341	Introduction to Logic and Automata
28:198:352	Parallel Computers and Programming
28:198:370	Introduction to Artificial Intelligence
28:198:432	Advanced Operating Systems
28:198:438	Interactive Computer Graphics
28:198:451	Data Communications and Networks
28:198:453	Microcomputers and Applications
28:198:461	Systems Simulations
28:198:485	Special Topics in Computer Science I
28:198:486	Special Topics in Computer Science II

Other required courses are:

### Mathematics

21&62:640:135	Calculus I
21&62:640:136	Calculus II
21&62:640:235 or 236	Calculus III or IV
21&62:640:237	Discrete Structures
21&62:640:327	Probability and Statistics or 28:640:333 (NJIT)
21&62:640:473	Numerical Analysis or 28:198:421 (NJIT)

Recommended but not required, are:

21&62:750:205,206	Introductory Physics Laboratory
21&62:750:213,214	Elements of Physics

The following is a recommended sequence for completing the courses required for a computer science major. Additional courses are required by the student's college of matriculation for graduation.

### First Year

#### Fall Term

21&62:198:101	Computers and Programming I
21&62:640:135	Calculus I

#### Spring Term

21&62:198:102	Computers and Programming II
21&62:640:136	Calculus II

### Sophomore Year

#### Fall Term

21&62&28:198:231	Machine and Assembly Language Programming
21&62:640:237	Discrete Structures

#### Spring Term

28:198:251	Computer Organization
21&62&28:198:335	Data Structures and Algorithm Design
21&62:640:235	Calculus III

### Junior Year

#### Fall Term

28:198:332	Principles of Operating Systems
28:198:435	Advanced Data Structures and Algorithm Design
21&62&28:198:___	Computer science elective

#### Spring Term

21&62&28:198:___	Computer science elective
21&62:640:327	Probability and Statistics

### Senior Year

#### Fall Term

28:198:490	Guided Design in Software Engineering
21&62&28:198:___	Computer science elective
21&62:640:473	Numerical Analysis

#### Spring Term

21&62&28:198:491	Computer Science Project
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### Major Requirements: Information Systems

A total of 60 credits is required for the information systems major. The following are required computer science courses:

21&62:198:101	Computers and Programming I
21&62:198:102	Computers and Programming II
28:198:265	Information Systems and Productivity Toolware
28:198:270	Multimedia Information Systems

28:198:332	Principles of Operating Systems
21&62&28:198:335	Data Structures and Algorithm Design
28:198:350	Computers and Society
28:198:365	Computer Applications to Commercial Problems
28:198:390	Requirements Analysis and Systems Design
28:198:431	Database System Design and Management
28:198:455	Computer Systems Management
28:198:456	Open Systems Networking
28:198:465	Advanced Information Systems
28:198:492	Information Systems Project

Three elective courses from a list of courses offered by the Department of Mathematics and Computer Science or by the NJIT CIS department are required. Consult with the department for a current list of approved courses. No more than 3 credits may be taken from among the following courses: 21&62:198:389, 390, 493, 494, 495, and 496.

The following is a list of recommended courses offered at NJIT:

28:198:251	Computer Organization
28:198:333	Introduction to UNIX Operating Systems
28:198:370	Introduction to Artificial Intelligence
28:198:447	Human Computer Interfaces
28:198:451	Data Communications and Networks
28:198:461	Systems Simulation
28:198:490	Guided Design in Software Engineering

Students wishing to concentrate in business may use any of the following business and economics courses as electives.

29:010:203	Introduction to Financial Accounting
29:010:204	Introduction to Managerial Accounting
21&62:220:102	Introduction to Economics, Macro
29:390:329	Finance
29:620:318	Management Fundamentals
29:620:325	Leading Individuals and Teams in Organizations

Other required courses are:

#### Mathematics

21&62:640:237	Discrete Structures
21&62:640:251	Linear Algebra

#### Statistics (choose one)

21&62:640:327	Probability and Statistics
21&62:960:211	Statistics I

or any other course in statistics approved by the department

The following is a recommended sequence for completing the courses required for the information systems major. Additional courses are required by the student's college of matriculation for graduation.

#### First Year

##### Fall Term

21&62:198:101	Computers and Programming I
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##### Spring Term

21&62:198:102	Computers and Programming II
21&62:640:119	Basic Calculus

#### Sophomore Year

##### Fall Term

28:198:265	Information Systems and Productivity Toolware
28:198:350	Computers and Society
21&62:640:237	Discrete Structures

##### Spring Term

28:198:270	Multimedia Information Systems
21&62&28:198:335	Data Structures and Algorithm Design
21&62:640:251	Linear Algebra

#### Junior Year

##### Fall Term

28:198:332	Principles of Operating Systems
28:198:365	File Structures and Management
28:198:390	Requirements Analysis and Systems Design
21&62:960:211	Statistics I

##### Spring Term

28:198:431	Database System Design and Management
28:198:455	Computer Systems Management
21&62&28:198:___	Computer science elective

#### Senior Year

##### Fall Term

28:198:456	Open Systems Networking
28:198:465	Advanced Information Systems
21&62&28:198:___	Computer science elective

##### Spring Term

21&62&28:198:492	Information Systems Project
21&62&28:198:___	Computer science elective

#### Minor Requirements: Computer Science

A total of 18 credits is required for the CS minor. The following courses are required:

##### Mathematics

21&62:640:135	Calculus I
21&62:640:237	Discrete Structures

##### Computer Science

21&62:198:101	Computers and Programming I
21&62:198:102	Computers and Programming II
21&62&28:198:231	Machine and Assembly Language Programming
21&62&28:198:335	Data Structures and Algorithm Design

#### Courses

##### 21&62:198:100. INTRODUCTION TO COMPUTERS AND INFORMATION PROCESSING (3)

*Prerequisite: Fulfillment of mathematics proficiency. May not be used for credit towards the computer science major or minor or the major in information systems. This course fulfills the technology course requirement in the teacher certification program.*

Covers a general knowledge of computer use; history of computers and information processing, survey of modern computer science concepts, practical instruction in the use of a variety of data processing environments, and use of available software packages and data bases; introduction to the Internet.

**21&62:198:101. COMPUTERS AND PROGRAMMING I (3)**

*Prerequisite: Fulfillment of mathematics proficiency. This course fulfills the technology course requirement in the teacher certification program.*

Introduction to problem-solving using the computer; basic organization of a computer, file manipulation, use of editors and compilers. Programming using a higher-level language; iteration and conditional statements; subprograms; elementary data structures.

**21&62:198:102. COMPUTERS AND PROGRAMMING II (3)**

*Prerequisite: 21&62:198:101.*

Solution of problems using recursive methods and dynamic data structures. Recursive functions, pointer variables, text processing, external files, and elementary software engineering.

**21&62&28:198:231. MACHINE AND ASSEMBLY LANGUAGE PROGRAMMING (3)**

*Prerequisite: 21&62:198:102.*

Computer architecture and representation of data, instructional codes, arithmetic operations and conversions, addressing, linkages, debugging, macros.

**28:198:251. COMPUTER ORGANIZATION (3)**

*Prerequisite: 21&62:198:102.*

An introduction to computer system structure and organization. Topics include representation of information, circuit analysis and design, register-transfer level, processor architecture, and input/output.

**28:198:265. INFORMATION SYSTEMS AND PRODUCTIVITY TOOLWARE (3)**

*Prerequisite: 21&62:198:101.*

Information systems is the study of how organizations use information technology. This course is an overview of the information systems discipline, the role of information systems in organizations, and the changing nature of information technology. Computer tools for analysis and presentation are used.

**28:198:270. MULTIMEDIA INFORMATION SYSTEMS (3)**

*Prerequisite: 21&62:198:102.*

Multimedia combines text, graphics, sound, video, and animation in a single application. Preparation for creating multimedia information systems, and understanding the crucial issues involving technology, design, and effectiveness of multimedia applications. Programming techniques for integrating video, sound, animation, and graphics, and design strategies for multimedia information systems.

**28:198:332. PRINCIPLES OF OPERATING SYSTEMS (3)**

*Prerequisite: 21&62&28:198:335.*

Organization of operating systems covering structure, process management, and scheduling; interaction of concurrent processes; interrupts; I/O, device handling; memory and virtual memory management and file management.

**28:198:333. INTRODUCTION TO UNIX OPERATING SYSTEMS (3)**

*Prerequisites: CIS 332 or equivalent, and knowledge of C language.*

Covers the UNIX system kernel including initialization, scheduling, context switching, process management, memory management, device management, and the file system. The course also includes the organization of shells, editors, utilities, and programming tools of the UNIX operating system.

**21&62&28:198:335. DATA STRUCTURES AND ALGORITHM DESIGN (3)**

*Prerequisites: 21&62:198:102 and 21&62:640:237.*

Trees, paths, linear lists, strings, arrays, stacks, queues, linked structures, algorithms for searching, sorting, merging; efficiency of algorithms.

**28:198:350. COMPUTERS AND SOCIETY (3)**

*Prerequisites: 21&62:198:101 and 21&62:350:101.*

Examines the historical evolution of computer and information systems and explores their implications in the home, business, government, medicine, and education. Topics include automation and job impact, privacy, and legal and ethical issues.

**28:198:365. FILE STRUCTURES AND MANAGEMENT (3)**

*Prerequisites: 21&62&28:198:335 and knowledge of COBOL.*

Covers design and implementation of commercial application software systems. Concepts of organization and management of data and files including file operations and organization of sequential access, relative access, indexed sequential access, virtual storage access, and multi-key access methods. The COBOL language is used to illustrate these concepts and to implement application systems.

**28:198:390. REQUIREMENTS ANALYSIS AND SYSTEMS DESIGN (3)**

*Prerequisite: 21&62:198:102.*

A study of the information systems development life cycle, from the initial stages of information requirements analysis and determination to the ultimate activities involving systems design. Theory, methodologies, and strategies for information requirements analysis, including the assessment of transactions and decisions, fact-finding methodologies, structured analysis development tools, strategies of prototype development, and an overview of computer-aided software engineering (CASE) tools. Theory, methodologies, and strategies for systems design, including design of user-interfaces, particularly menu-driven and keyword dialogue strategies, and issues in the proper design of computer output.

**28:198:421. NUMERICAL ALGORITHMS (3)**

*Prerequisites: 21&62:198:101 and 21&62:640:136.*

Fundamentals of numerical methods, including discussion of errors, interpolation and approximation, linear systems of equations, solution of nonlinear equations, and numerical solution of ordinary differential equations. Emphasis on algorithmic approach and the efficient use of the computer.

**28:198:431. DATABASE SYSTEM DESIGN AND MANAGEMENT (3)**

*Prerequisite: 21&62&28:198:335.*

Database system architecture: data modeling using the semantic object and entity-relationship model; storage of databases; the hierarchical, network, and relational data models; formal and commercial query languages; functional dependencies and normalization for relational database design; relation decomposition; concurrency control and transactions management. Student projects involve the use of a DBMS package.

**28:198:435. ADVANCED DATA STRUCTURES AND ALGORITHM DESIGN (3)**

*Prerequisite: 21&62&28:198:335.*

Advanced topics in data structures and algorithms, including mathematical induction, analysis and complexity of algorithms, and algorithms involving sequences, sets, and graphs such as searching, sorting, order statistics, sequence comparisons, graph traversals, etc. Optional topics include geometric, algebraic, and numeric algorithms.

**28:198:455. COMPUTER SYSTEMS MANAGEMENT (3)**

*Prerequisite: 21&62:198:102.*

An overview of computing centers and their organization for accomplishing specific objectives. Includes a classification of systems, analysis of cost and size, layout of equipment, methods of accessing computer facilities, equipment selection, and facilities evaluation.

**28:198:456. OPEN SYSTEMS NETWORKING (3)**

*Prerequisite: 21&62&28:198:335.*

An introduction to internetworking, including an in-depth study of the architecture of network interconnections, the Internet services, and the protocols needed to provide these services. Topics include: architecture of interconnected networks, Internet addresses and the address resolution problem, Internet protocols, the domain name system, the socket interface, the client-server model of interaction, the OSI transport and application support protocols, and the TCP/IP application protocols.



### **28:198:465. ADVANCED INFORMATION SYSTEMS (3)**

*Prerequisite: 28:198:431.*

Design and programming concepts are presented for automation of management information systems. Includes the organization of files and techniques for processing information based upon organizational requirements and available hardware and software. Case studies are presented and analyzed. Advanced design strategies for information systems. Preparation of a proposal for an information systems project that includes its functional specifications and preliminary design is required.

### **28:198:490. GUIDED DESIGN IN SOFTWARE ENGINEERING (3)**

*Prerequisite: Senior standing or departmental approval.*

Focus is on the methodology for developing software systems. Methods and techniques for functional requirements analysis and specifications, design, coding, testing and proving, integration and maintenance are discussed. Students prepare a proposal for a project, which includes its functional specifications and preliminary design.

### **21&28:198:491. COMPUTER SCIENCE PROJECT (3)**

*Prerequisites: 28:198:490, senior standing, and project proposal approval.*

An opportunity for students to integrate the knowledge and skills gained in previous computer science work into an individual research project. The project involves investigation of current literature as well as computer implementation of either a part of a large program or the whole of a small system. The topic should be consonant with the emphasis of direction chosen by the students in their computer science studies. To register for this course, students must have a written project proposal approved by their faculty adviser. The proposal must be submitted and approved in the prior term, usually the third week of November or April.

### **21&28:198:492. INFORMATION SYSTEMS PROJECT (3)**

*Prerequisites: 28:198:465, senior standing, and, in a prior term, project proposal approved by the faculty adviser.*

Integration of knowledge and skills gained in previous information systems courses into an individual research project. The project entails investigation of current literature and the design, implementation, and evaluation of an information system.

### **21&62:198:493,494. INDIVIDUAL STUDIES IN COMPUTER SCIENCE (3,3)**

*Prerequisite: Permission of instructor.*

Individual study for students interested in specialized study or research in computer sciences.

### **21&62:198:495,496. INTERNSHIP IN COMPUTER SCIENCE OR INFORMATION SYSTEMS (3,3)**

*Prerequisite: Approval of a proposal by faculty adviser.*

Pursuit of a project of relevant educational value in an employment setting. Requires a proposal and report to be agreed upon and evaluated by employer and adviser.

## **CRIMINAL JUSTICE 202**

### ***School of Criminal Justice***

*S.I. Newhouse Center for Law and Justice (973/353-1300)*

The criminal justice major and minor are offered at NCAS and at UC-N.

The program in criminal justice offers students a focused interdisciplinary exposure to all aspects of crime and criminal justice. Courses in the program deal with crime, violence, and other forms of deviance and the responses to these problems by police, courts, and corrections; contemporary criminal justice issues; and ethical concerns and research. Students majoring in criminal justice receive excellent preparation for further study in graduate or professional schools as well as for careers in criminal justice.

## **Major Requirements: NCAS and UC-N**

### **1. Seven 3-credit required courses:**

- 21&62:202:201 Introduction to Criminal Justice
- 21&62:202:203 The Police and the Community
- 21&62:202:204 Corrections
- 21&62:202:303 Criminology
- 21&62:202:304 Delinquency and Juvenile Justice
- 21&62:202:305 Case Processing: The Law and the Courts
- 21&62:202:404 Criminal Justice: Ethical and Philosophical Foundations

### **2. Two 4-credit courses in research methods and statistics, specifically:**

- either:* 21&62:830:301 Statistical Methods for Cognitive and Behavioral Sciences
- or: 21&62:920:301-302 Social Research I,II

### **3. Three 3-credit elective courses in criminal justice or, with the consent of an adviser, in other courses related to the student's interests.**

## **Minor Requirements: NCAS and UC-N**

### **1. Three 3-credit required courses:**

- 21&62:202:201 Introduction to Criminal Justice
- 21&62:202:303 Criminology
- 21&62:202:304 Delinquency and Juvenile Justice

### **2. 12 credits of approved electives in criminal justice.**

## **Courses**

### **21&62:202:201. INTRODUCTION TO CRIMINAL JUSTICE (3)**

Societal responses to people and organizations that violate criminal codes; police, courts, juries, prosecutors, defense, and correctional agencies, and the standards and methods used to respond to crime and criminal offenders; social pressures that enhance or impair the improvement of criminal laws and the fair administration of criminal justice.

### **21&62:202:202. GENDER, CRIME, AND JUSTICE (3)**

An in-depth survey of changing social values about gender, changing criminal codes about sex crimes, changing law enforcement policies and procedures in prosecuting sex offenders, and emerging legal doctrines about privacy and sexual rights.

### **21&62:202:203. THE POLICE AND THE COMMUNITY (3)**

The function of police in contemporary society; the problems arising between citizens and police from the enforcement and nonenforcement of laws, from social changes, and from individual and group police attitudes and practices.

### **21&62:202:204. CORRECTIONS (3)**

Examines and analyzes the major types of custodial and community-based criminal corrections in contemporary America. Discusses purposes of corrections, correctional organization, impact of corrections, and contemporary issues facing the field.

### **21&62:202:301. WHITE-COLLAR CRIME (3)**

Crimes organized by persons whose economic, political, and privileged positions facilitate the commission with ease and relative impunity of unusual crimes which are often national and international in scope and which have serious, long-term consequences.

### **21&62:202:302. CONSTITUTIONAL ISSUES IN CRIMINAL JUSTICE (3)**

Examines the Bill of Rights as it pertains to criminal justice practices and procedures. Also analyzes the important judicial opinions, trials, and congressional investigations and reports concerning criminal justice laws, policies, and practices.

### **21&62:202:303. CRIMINOLOGY (3)**

Crime and criminal behavior, theories, and research. Causes of crime. Crime rates. U.S. and international comparisons.

**21&62:202:304. DELINQUENCY AND JUVENILE JUSTICE (3)**

*Prerequisite: 200-level course in criminal justice.*

Causes and rates of delinquent behavior. The nature and operation of the juvenile justice system. International comparisons.

**21&62:202:305. CASE PROCESSING: THE LAW AND THE COURTS (3)**

The criminal laws and judicial opinions that influence the policies, procedures, personnel, and clients of the criminal justice system in New Jersey; the origin, development, and continuing changes in criminal law, administration of criminal justice, and the state's criminal courts.

**21&62:202:306. COMMUNITY CORRECTIONS (3)**

Examines the theory and practice of such major community-based correctional responses to convicted criminal offenders as probation, parole, and diversion programs; studies community corrections as an important social movement and the countermovement to abolish the parole function.

**21&62:202:307. CULTURE AND CRIME (3)**

Anthropological approach to crime as a pattern of social behavior. Examines crime and punishment in other societies, especially non-Western societies which lack institutional systems of criminal justice; the social evolution of crime and crime-related institutions in U.S. history; anthropological studies of people and organizations on both sides of the crime problem.

**21&62:202:401. CONTEMPORARY PROBLEMS IN POLICING (3)**

Critical law enforcement problems, including organized crime, alcohol, drugs, policing of civil and natural disturbances, and the diffusion and multiplicity of police agencies; discusses crime reporting, assessment difficulties, and the public reaction; examines the administrative problems of staffing, supervision, employee morale and militancy, and public charges.

**21&62:202:402. CONTEMPORARY PROBLEMS IN CORRECTIONS (3)**

Topics include the impact of alternatives to incarceration, the growing prisoner rights movement, strikes by correctional employees, and public resentment toward persistently high rates of recidivism; special study of issues concerning correctional education, job training, work release, and postincarceration employment.

**21&62:202:403. COMPARATIVE CRIMINAL JUSTICE SYSTEMS (3)**

Analysis of different approaches to law enforcement, criminal procedure and criminal law, corrections, and juvenile justice. Provides a worldwide overview of cultural and legal traditions that are related to crime.

**21&62:202:404. CRIMINAL JUSTICE: ETHICAL AND PHILOSOPHICAL FOUNDATIONS (3)**

Explores a wide range of ethical and philosophical issues and moral dilemmas within the field of criminal justice. Topics include: principles of justice, deontology and utilitarianism, philosophical issues in sentencing, police and ethics, ethics and research, and the scope of state control.

**21&62:202:405. RESEARCH SEMINAR IN CRIMINAL JUSTICE (3)**

*Prerequisite: Special permission.*

Develops rudimentary tools needed for conducting research and writing reports and scholarly papers in criminal justice.

**21&62:202:406. INDEPENDENT STUDY IN CRIMINAL JUSTICE (3)**

*Prerequisite: 21&62:202:405 or special permission.*

Independent research or special project under faculty supervision.

**21&62:202:407. TOPICS IN CRIMINAL JUSTICE (3)****21&62:202:413. INTERNSHIP IN CRIMINAL JUSTICE (BA)**

*Prerequisites: Special permission and junior or senior standing.*

## ECONOMICS 220

**Department of Economics**

Hill Hall (973/353-5259), or see [newark.rutgers.edu/~econnewark](http://newark.rutgers.edu/~econnewark).

The economics major and minor are offered at NCAS and UC-N.

### Major Requirements

Economists study social behavior with the assumption that individuals engage in activities when the benefits of doing so exceed the costs. This simple assumption is the foundation of economic studies of growth and development, international trade and exchange rates, inflation, taxation, financial markets and the organization of financial institutions, and the determination of market prices.

The major in economics includes a 24-credit core curriculum, including 21&62:640:119 Basic Calculus, and an additional 18 elective credits. At least one-half of these credits must be completed at Rutgers-Newark. All courses must be completed with a grade of C or better.

Three of the following four courses in the School of Management, 29:390:315 Investments, 29:390:329 Finance, 29:390:330 Corporate Finance, and 29:390:386 Futures and Options, may be counted as elective credits. Students with an interest in applied economic analysis and in developing computer skills should take 21&62:220:402 Advanced Econometrics after 21&62:220:322 Introduction to Econometrics.

Seniors with at least a B average and with permission from the director of graduate studies may enroll in courses from the graduate economics curriculum.

#### Core Courses

21&62:220:101	Introduction to Economics, Micro (3)
21&62:220:102	Introduction to Economics, Macro (3)
21&62:220:231	Statistical Methods (3)
21&62:220:322	Introduction to Econometrics (3)
21&62:220:323	Intermediate Microeconomic Theory (3)
21&62:220:324	Intermediate Macroeconomic Theory (3)
21&62:220:406	Seminar in Applied Economics (3)
21&62:640:119	Basic Calculus (3)

### Minor Requirements

The minor requires 21 credits in economics courses to be completed with a grade of C or better. The 21 credits must include the following:

21&62:220:101	Introduction to Economics, Micro (3)
21&62:220:102	Introduction to Economics, Macro (3)
21&62:220:323	Intermediate Microeconomic Theory (3)
21&62:220:324	Intermediate Macroeconomic Theory (3)

School of Management courses 29:390:315 Investments, 29:390:329 Finance, 29:390:330 Corporate Finance, and 29:390:386 Futures and Options may *not* be used to satisfy the credit requirements for the minor.

### Courses

*Note:* Courses 21&62:220:101,102 Introduction to Economics are prerequisite for all other courses in the department. College Algebra (21&62:640:113) or its equivalent, or tested proficiency in college algebra, is a prerequisite for all economics courses except Introduction to Economics 21&62:220:101,102. *However, proficiency in 21&62:640:113 College Algebra is highly recommended for students taking Economics 21&62:220:101,102.*

**21&62:220:101. INTRODUCTION TO ECONOMICS, MICRO (3)**

*Proficiency in 21&62:640:113 College Algebra is highly recommended.*

Consumer theory and market demand; production theory and market supply; market equilibrium; income distribution; and international trade.

**21&62:220:102. INTRODUCTION TO ECONOMICS, MACRO (3)**

*Proficiency in 21&62:640:113 College Algebra is highly recommended.*

Major issues confronting the American economy; the nature of our private enterprise system, the role of government, the influence of the banking system, the problem of controlling inflation and deflation, and the requisites for a high level of national income and employment and a rising standard of living.

**21&62:220:200. ECONOMIC ANALYSIS OF SOCIAL PROBLEMS (3)**

*May not be taken for credit by students who have already received credit for 21&62:220:101 Introduction to Economics, Micro and/or 21&62:220:102 Introduction to Economics, Macro; nor can it be used as a substitute for those two courses to satisfy any other requirements or prerequisites that currently require 21&62:220:101 and/or 102. Not open to economics or business majors.*

Introduction to economic principles (both micro and macro) with applications to current social problems. Intended for students who plan to take only a single term of economics. Topics include distribution of income, poverty, education, crime, health care, pollution, discrimination, unemployment, inflation, and the role of government in a market economy.

**21&62:220:201. PRINCIPLES OF FINANCE (3)**

Introduction to microeconomic foundations of financial theory; overview of financial markets; individual saving and investment decisions, consumer attitudes towards risk, capital formation, financial effects of inflation, properties of various financial assets and markets, and government policy regarding securities markets.

**21&62:220:231. STATISTICAL METHODS (3)**

*Not open to students who have taken a course in statistics or its equivalent in another department.*

Descriptive statistics, probability, sampling, estimation, hypothesis testing, and regression analysis; realistic application with the computer employed as a major tool.

**21&62:220:303. ECONOMICS OF INDUSTRIAL RELATIONS (3)**

Development of labor organization in the U.S., from its origins to the present; examination of public policy toward unions and collective bargaining; analysis of collective bargaining agreements; private techniques and public policy for settling industrial disputes.

**21&62:220:304. ECONOMICS OF LABOR (3)**

Analysis of the market forces determining employment, wages, hours, and productivity in the firm and economy; influence of union organization, collective bargaining, and public policy on the labor market; historical and cyclical behavior of the labor force and earnings.

**21&62:220:305. DEVELOPMENT OF THE AMERICAN ECONOMY (3)**

The origins, development, and transformation of the American economy. Illustrations of the operation of "economic law" through examination of various aspects of the country's past from the colonial period to the present.

**21&62:220:312. WOMEN IN THE AMERICAN ECONOMY (3)**

The economic aspects of the role of women in our society; changes in this role over the course of the twentieth century and continuing changes. The basic focus is work—in the home and in the labor market—and the division of labor. Topics include labor force participation, discrimination, relative earnings, birth rates, and family size.

**21&62:220:315. MANAGERIAL ECONOMICS (3)**

The economic foundation of managing the private enterprise; demand forecasting, pricing, cost analysis and competitive strategy, and capital budgeting; integration of microeconomics and strategic planning with case studies; emphasis on practical application of economics to business decisions.

**21&62:220:316. ECONOMICS OF HEALTH (3)**

Economic analysis of the U.S. health care sector; theories of consumer demand for health and medical care, of physician behavior, and of hospital administration; economic aspects of health policy issues such as national health insurance, competition between medical care providers, medical cost inflation, and public health programs.

**21&62:220:322. INTRODUCTION TO ECONOMETRICS (3)**

*Prerequisite: 21&62:220:231.*

Application of regression and other statistical techniques to economic problems; classical linear regression model developed with analysis of the underlying assumptions and the consequences of their violation; use of econometric techniques in micro- and macroeconomic problems; computer assisted applications.

**21&62:220:323. INTERMEDIATE MICROECONOMIC THEORY (3)**

Development of the fundamental tools of price and distribution theory; analysis of commodity and factor price determination under competitive and noncompetitive market conditions from the standpoint of the household and the firm; introduction to welfare economics.

**21&62:220:324. INTERMEDIATE MACROECONOMIC THEORY (3)**

Theoretical analysis of national income, employment, and price-level determination; roles of consumer and investor demand, interest rates, money supply, and fiscal and monetary policy considered within the framework of Keynesian, post-Keynesian, monetarist, and new classical theories.

**21&62:220:327,328. HISTORY OF ECONOMIC THOUGHT (3,3)**

First term: the evolution of economic doctrines from the Middle Ages to about 1870, emphasizing the writings of Smith, Ricardo, Malthus, Mill, Marx, and their critics. Second term: neoclassical and Keynesian theory.

**21&62:220:335,336. INTERNATIONAL ECONOMIC RELATIONS (3,3)**

Theoretical and practical considerations underlying international trade and finance; economic effects of tariffs and exchange restrictions; foreign investment and the problems of underdeveloped areas; a review of the U.S. foreign aid program and of the work of international financial institutions.

**21&62:220:337. PUBLIC FINANCE (3)**

*Prerequisite: 21&62:220:323.*

Economics of the public sector emphasizing the functions of allocation, distribution, and stabilization; equity and efficiency in the provision of public services; fiscal federalism and comparative fiscal systems, emphasizing major expenditures and revenue sources; the political economy of regulation and public choice theories.

**21&62:220:339. ECONOMIC DEVELOPMENT (3)**

Review the alternative theories of economic development and examine the process of economic development in an international perspective. Examination of the broad diversity of experience in selected Pacific-rim countries is used as a point of departure to illustrate the validity of alternative development theories. Although emphasis is placed on East Asian countries, comparison between East Asian and Latin American countries is made in the context of the political-economic approach.

**21&62:220:356. BUSINESS CYCLES (3)**

Results of empirical investigations of business fluctuations, with emphasis on the nature of short-run cyclical variations and secular growth; leading types of business cycle theory reviewed and a systematic study made of the general relation between income and employment, money and prices, savings and capital formation, and their influence on self-generating cyclical movements; the nature and effectiveness of monetary and fiscal policy also reviewed.

**21&62:220:361. INDUSTRIAL ORGANIZATION (3)**

Theoretical analysis of economic behavior under different market structures; welfare criteria employed; conditions of market failure considered and appropriate policy implications studied.



**21&62:220:365. MONEY AND BANKING (3)**

The structured operation and consequences of the monetary system; role of money and banking in the organization and fluctuations of our economic system; recent changes in the functions of the Federal Reserve System.

**21&62:220:367. MONETARY ECONOMICS (3)**

Theory of the demand and supply of money and of monetary disturbances; historical development and current state of monetary theory and policy.

**21&62:220:402. ADVANCED ECONOMETRICS (3)**

*Prerequisite: 21&62:220:322.*

Intensive introduction and extension of the classical regression model; simultaneous model estimation, simulation, and evaluation; specification error analysis; nonlinear estimation; and time series methods.

**21&62:220:406. SEMINAR IN APPLIED ECONOMICS (3)**

*Prerequisite: 21&62:220:322 or permission of instructor.*

Examination of empirical studies current in the economics literature; original research project and presentation of findings and progress in oral and written form.

**21&62:220:407,408. LABOR SEMINAR (3,3)**

*Prerequisites: 21&62:220:303,304.*

Completion of one or more papers in a specialized area of the labor market, such as employment, income distribution, wages, collective bargaining, and productivity, or in industrial relations, such as the history and structure of labor organizations, and public policy toward unions and collective bargaining.

**21&62:220:409. INTRODUCTION TO MATHEMATICAL ECONOMICS (3)**

*Prerequisite: 21&62:640:119 or equivalent.*

Introduction to the use of mathematics in economic analysis; survey of the economics and finance literature that employs calculus and basic topology.

**21&62:220:414,415. ANALYSIS OF CURRENT ECONOMIC CONDITIONS (3,3)**

Detailed study of the major indicators of economic conditions, their derivation, historical movements, current position, and their role in assessing economic change.

**21&62:220:439. FINANCIAL ECONOMICS (3)**

Capital budgeting problems; survey of asset pricing theories.

**21&62:220:499. INDIVIDUAL STUDY IN ECONOMICS (BA)**

*Prerequisites: Permission of department chairperson and instructor. Restricted to economics majors in their last term before graduation. Maximum of 3 credits.*

**EDUCATION 240-310****Department of Education**

Conklin Hall (973/353-5245)

Teacher certification is offered at NCAS and UC-N.

Students are prepared for teaching in urban schools. Students may prepare subject matter teacher certification in the following fields: art, biological sciences (through the biology major), earth science (through the geology major), general science, English, French, German, Italian, mathematics, music, Spanish, and social studies (through either history or political science or other social science majors). Except for music and art, each of these certificate fields is ungraded. The teacher is certified to teach a departmentalized assignment in that subject at any grade level. A pre-K through grade eight certificate also is available. Student teaching takes place in urban schools.

**Admission to the Teaching Programs**

Students interested in programs preparatory to teaching at the pre-K, elementary, or secondary level should consult with the Department of Education during their sophomore year. Those who wish to be certified to teach must indicate their interest in education and declare their college major in the department offering the major. All students must major in a liberal arts subject. No student may major in education or a non-liberal arts subject, e.g., business, accounting, or social work. Secondary students major in the discipline they want to teach. Elementary students may major in any of the liberal arts disciplines, although psychology, sociology, or other fields that give a foundation for understanding school age children and youth and society are recommended. Education courses fulfill the 16-credit college elective requirement.

Students who apply to the education department are given favorable consideration if they meet the following criteria:

1. A 2.8 grade-point average each term; a 3.0 grade-point average in the major;
2. Satisfactory use of oral and written English and of mathematics;
3. Successful completion of 21&62:830:323 Child Psychology;
4. Successful completion of 21&62:310:410 Issues in Urban Education and Sophomore Practicum.

Continuation in the program and acceptance to student teaching are contingent upon the following criteria:

1. A 2.8 grade-point average each term; a 3.0 grade-point average in the major;
2. Recommendation by the major department and by five faculty members;
3. An A or B in all education courses;
4. Successful development of a personal portfolio of student work.

If a student is accepted probationally into the teacher education program and fails to earn an acceptable average, the student is not permitted to register for student teaching. Students must apply three or four terms in advance to the Department of Education for a student teaching assignment. Upon completion of the education program, students are required to take the National Teacher Examination.

*Note:* All students must meet the following additional four requirements. Many of these requirements can be used as part of the general curriculum requirements at NCAS and UC-N. Consult an adviser and the NCAS and UC-N sections of this catalog.

1. A course offered by the Department of Visual and Performing Arts.
2. A college-level mathematics course.
3. 21&62:198:100 Introduction to Computers and Information Processing.
4. At least 96 credits in the liberal arts, which includes a major in the liberal arts.

**Requirements**

Students must complete all major requirements for their field. Education program requirements, and a recommended schedule for completing them, may be obtained from the Department of Education.

Those seeking pre-K to grade 8 certification must complete the following courses, in addition to meeting the art, mathematics, technology, and general education requirements described above.



- 21&62:240:336 Communication Skills and Social Studies, Pre-K–8 (fall) \*
- 21&62:240:342 Math, Pre-K–8 (fall) \*
- 21&62:240:343 Science and Health, Pre-K–8 (spring)
- 21&62:300:314 Methods of Teaching Reading and Junior Practicum
- 21&62:310:410 Issues in Urban Education and Sophomore Practicum
- 21&62:310:411 Social Foundations of Education
- 21&62:830:323 Child Psychology
- 21&62:250:487 Student Teaching and Seminar

Total = 30 credits

Those seeking secondary certification, e.g., specialized subjects, must complete the following courses in addition to meeting the art, math, technology, and general education requirements described above.

- 21&62:240:360 Introduction to Teaching Secondary School
- 21&62:300:314 Methods of Teaching Reading and Junior Practicum
- 21&62:300:386 Principles and Techniques of Teaching Secondary School
- 21&62:310:410 Issues in Urban Education and Sophomore Practicum
- 21&62:310:411 Social Foundations of Education
- 21&62:830:323 Child Psychology
- 21&62:250:487 Student Teaching and Seminar

Total = 30 credits

## Teacher Certification

Students who successfully complete a program preparatory to teaching may apply for state certification through the Department of Education. All students interested in education programs should consult with education faculty in Conklin Hall, room 420.

## Courses

The introductory course is:

### 21&62:310:410. ISSUES IN URBAN EDUCATION AND SOPHOMORE PRACTICUM (3)

Interdisciplinary, multiethnic study of education; the urban environment in which city schools exist; educational equity, the politics of schools, the disadvantaged student, the education of ethnic minorities, and student achievement. Portfolio beginnings. Fieldwork required.

### 21&62:240:336. COMMUNICATION SKILLS AND SOCIAL STUDIES PRE-K–8 (3)

Corequisite: 21&62:240:342.

Examination of the role of language arts and language development, children's literature, the writing process, and social studies in the elementary school curriculum; theory, methods, and materials. Fieldwork required.

### 21&62:240:342. MATH, PRE-K–8 (3)

Corequisite: 21&62:240:336.

Arithmetical concepts needed to teach math in grades pre-K through 8; technology, methods, and materials for teaching these concepts; math journals; tutoring of a young child required.

### 21&62:240:343. SCIENCE AND HEALTH, PRE-K–8 (3)

Prerequisites: 21&62:240:336, 342.

Underlying principles of a sound science program; multimedia materials, equipment, and methods for teaching hands-on science; the development of children's scientific concepts; health science and physical education, and teaching methods for these areas. Cooperative learning and classroom management. Fieldwork required.

### 21&62:240:360. INTRODUCTION TO TEACHING SECONDARY SCHOOL (4)

School organization, student-teacher interaction, and school operation; generic methods of teaching secondary school; fieldwork in secondary schools required.

### 21&62:250:487. STUDENT TEACHING AND SEMINAR (6)

Prerequisite: Permission of department chairperson.

Requires completion with an A or B of all education courses; a grade-point average of 2.8 or better each term; recommendation by major department and education department; successful completion of junior practicum. Students must apply to student teach by the previous December 1; fifteen weeks of student teaching is required.

### 21&62:300:314. METHODS OF TEACHING READING AND JUNIOR PRACTICUM (6)

Theory and practical applications of techniques for improving literacy skills throughout the curriculum; techniques of individualization; observation of the teaching of reading in classrooms at the elementary and secondary levels in the specific content areas required in the practicum. Theory and methods of teaching literacy; remedial aspects and techniques; intensive diagnostic prescriptive tests and measurements; fieldwork required totaling 30 hours per term (one morning per week). Time of fieldwork arranged by instructor.

### 21&62:300:324. LEARNING DISABILITIES AND EDUCATIONAL TECHNIQUES (3)

Student learning problems that classroom teachers may encounter; special techniques to assist teachers in designing strategies for emotionally- or physiologically-based learning problems.

### 21&62:300:354. ART EDUCATION (3)

Prerequisite: 21&62:300:386.

Materials and methods for teaching art at elementary and secondary levels; practicum included.

### 21&62:300:386. PRINCIPLES AND TECHNIQUES OF TEACHING SECONDARY SCHOOL (5)

Prerequisite: 21&62:240:360.

Recent trends and innovations in media, materials, and methods of teaching secondary school; highly individualized—each student works with a master teacher to learn materials and methods specific to major subject area; weekly fieldwork required.

### 21&62:300:427. SUPERVISED TEACHING I AND SEMINAR (3)

Prerequisites: Permission of department chairperson; same requirements as 21&62:250:487.

Designed for students who can devote full time on the job, teaching courses appropriate to the state certification sought; includes observation, conferences, and classroom teaching.

### 21&62:300:428. SUPERVISED TEACHING II AND SEMINAR (3)

Prerequisites: Permission of department chairperson; same requirements as 21&62:250:487.

Designed for students who can devote full time on the job, teaching courses appropriate to the state certification sought; includes observation, conferences, and classroom teaching.

### 21&62:300:442. PUBLIC SCHOOL MUSIC: MATERIALS AND METHODS (3)

Materials and methods for teaching music at elementary and secondary levels; practicum included.

\* 21&62:240:336 Communication Skills and Social Studies must be taken with 21&62:240:342 Math, Pre-K–8.

**21&62:310:411. SOCIAL FOUNDATIONS OF EDUCATION (3)**  
Survey of historical developments and philosophical issues bearing on education in America since the colonial era.

**21&62:310:416. RESEARCH IN EDUCATION (3)**

*Prerequisite: Permission of department chairperson.*  
For students interested in special educational problems; appropriate for advanced students majoring in fields other than education, if a suitable research problem is submitted.

**21&62:310:417,418. TOPICS IN EDUCATION (3,3)**

*Open to qualified juniors and seniors with permission of department chairperson.*  
Discussion of selected topics with emphasis on current practices and research.

**Other Related Course**

**21&62:014:180. HISTORY OF AFRO-AMERICAN EDUCATION (3)**

*See Afro-American and African Studies 014.*

**ENGLISH (English 350, American Literature 352, Journalism, Media, and Writing 570)**

**Department of English**

*Hill Hall (973/353-5279)*

The English major and minor are offered at NCAS and UC–N. Students may also major or minor in journalism at NCAS and minor in journalism at UC–N.

**Major Requirements**

**English Major**

This major introduces the student to a variety of epochs in English and American literature, with opportunities to select advanced work in authors, genres, periods, topics, and writing.

The major requires 45 credits as follows:

1. 21&62:350:215 Literary Masterpieces  
21&62:350:308 Foundations of Literary Study  
21&62:350:319 or 320 Shakespeare
2. 9 credits in literature prior to the nineteenth century;  
3 credits in nineteenth-century literature;  
6 credits in:  
African, Caribbean, or Asian literatures (offered by the English department or the Department of Afro-American and African Studies);  
foreign language study beyond the elementary level; or  
literatures in translation (offered by the Department of Classical and Modern Languages).

18 additional credits in any courses offered by the English department, of which 6 credits may be in creative writing courses.

A list of courses meeting these requirements is available in the English department office. The department assigns advisers to all students majoring in English and recommends that students regularly consult with their advisers. Students expecting to attend graduate schools are strongly recommended to choose period courses and to acquire competency in third-year college-level French, German, Greek, or Latin.

**Journalism Major**

*Required core (29 credits)*

- 21&62:570:201,202 Journalism and Communications Media  
21&62:570:337 Basic Reporting  
21&62:570:338 Advanced Reporting  
21&62:570:344 Journalism, Ethics, and the Law  
21&62:570:459 Journalism Internship or 21&62:965:394 Internship—Television  
21&62:570:490 Journalism Laboratory  
21&62:965:253 or 254 TV and Society  
21&62:965:319 or 433 Television Production or Field Production  
21&62:965:440 or 441 Topics in Television

*Electives (9 credits)*

Electives are to be chosen from courses in English 350, American Literature 352, Journalism, Writing, and Media 570, Television 965, or Art and Design 080.

**Minor Requirements**

A student can minor in English by completing 21 credits, of which 6 credits are in 200-level courses and 15 credits are in 300- and 400-level courses in literature.

**Teacher Certification**

Students seeking teacher certification in English must complete the requirements for a major in the English department as well as satisfy other requirements for certification. For details regarding admission to the teacher education program and the requirements, students should consult both their department adviser and the chairperson of the education department.

**Prerequisites for English Courses**

English courses 21&62:350:101-102 or 103-104 English Composition, an approved equivalent, or special permission of the department, are prerequisite to all other English and journalism courses.

**Courses (English 350)**

**21&62:350:101-102. ENGLISH COMPOSITION (3,3)**

*Open to students on basis of placement test only. 21&62:350:101-102 is the introductory composition sequence for students who have not completed 6 credits in English composition at another institution. Prerequisite: For entry into 21&62:350:102 students must have completed 21&62:350:101 with a grade of C or better.*

101: Analytical writing based on nonfiction readings. Emphasis on revising skills and critical thinking. Students must demonstrate the ability to write accurately, coherently, and thoughtfully in response to representative university-level readings.  
102: Extensive analytical writing based on literary texts, including fiction, poetry, and drama. Introduction to library resources and to writing that incorporates research.

**21&62:350:103-104. HONORS ENGLISH COMPOSITION (3,3)**

*Designed for highly qualified first-year students.*

In lieu of 21&62:350:101-102, this course carries well-prepared students beyond the limits of the regular first-year program.

**21&62:350:121-122. EXPOSITORY WRITING I,II (3,3)**

*21&62:350:121-122 is primarily intended for transfer students who have previously completed 6 credits of writing instruction and need to further develop their writing skills. Prerequisite: For entry into 21&62:350:122, students must have completed 21&62:350:121 with a grade of C or better.*

121: Analytical writing based on nonfiction readings from a variety of disciplines. Review of writing fundamentals, with stress on revising and editing. Emphasis on the ability to summarize accurately and respond thoughtfully to representative university-level material.  
122: Extensive analytical writing based on fiction and nonfiction readings. Emphasis on the development of arguments and the ability to write about readings in relation to one another. Introduction to library resources and to research papers appropriate for various fields of study.

**21&62:350:205. FICTION INTO FILM (3)**

The responses of the English language and its literary conventions to the special demands of film.

**21&62:350:215,216. LITERARY MASTERPIECES (3,3)**

*See also 21&62:350:275,276.*

Introduction to great works of world literature; develops the ability to read with understanding and to enjoy literature that appeals to educated and mature readers. Correlated with advanced writing to extend the composition training of 21&62:350:101-102 or 21&62:350:121-122.

**21&62:350:221,222. SURVEY OF ENGLISH LITERATURE (3,3)**

Literature of the British Isles, from its beginnings to the twentieth century.

**21&62:350:227,228. SPECIAL TOPICS FOR NONMAJORS (3,3)**

Courses in the "strictly for nonmajors" track are more interdisciplinary and multicultural than traditional English courses to complement students of the sciences, social sciences, and professions. While the syllabi include important literature and film, emphasis falls on relating the works to a wide range of human experiences, dilemmas, and endeavors.

**21&62:350:247,248. FORCES IN MODERN LITERATURE (3,3)**

Focuses on the relationships between imaginative literature and some of the main social, political, and scientific forces in the nineteenth and twentieth centuries.

**21&62:350:254. LITERATURE AND POLITICS IN THE THIRD WORLD (3)**

Revolutionary movements and literatures of the peoples and nations of the third world. The development of national liberation and socialist revolution in the historical context of colonization and its aftermath. Detailed exploration of exemplary literature and film from Africa, Asia, Latin American, and the Caribbean.

**21&62:350:260,261. INTRODUCTION TO LITERATURE (3,3)**

An introduction to literary study using a range of texts from world literature to introduce concepts of genre, period, canon. Various critical approaches; practice in writing literary analysis.

**21&62:350:275,276. HONORS LITERARY MASTERPIECES (3,3)**

*Prerequisite: Permission of department chairperson.*

Similar to but somewhat more challenging than 21&62:350:215,216.

**21&62:350:302. WRITING WITH COMPUTERS (3)**

*Prerequisites: 21&62:350:101-102 or equivalent.*

An advanced writing course with emphasis on how computers serve the needs of academic, technical, creative, or business writers; computer techniques for writing dissertations, theses, scholarly articles, term papers, or pedagogic materials; handling scientific, foreign language, or graphics materials; business writing integrating spreadsheets and data base programs into correspondence, reports, and proposals. See the *Schedule of Classes* each term; special emphasis sections are limited to designated majors.

**21&62:350:303. WRITING FOR BUSINESS AND THE PROFESSIONS (3)**

*Prerequisites: 21&62:350:101-102 or equivalent.*

Development of skills in analysis and writing of articles, essays, reports, reviews, and interviews, with exploration of individual abilities and interests.

**21&62:350:306. ADVANCED EXPOSITION (3)**

*Prerequisites: 21&62:350:101-102 or equivalent.*

How to plan, revise, edit, and document lucid and persuasive preprofessional and professional memoranda, articles, reports, and research papers; meticulous evaluation of student writings; conferences.

**21&62:350:308. FOUNDATIONS OF LITERARY STUDY (3)**

Provides English majors with a firm foundation in the terms, concepts, and issues of literary analysis. Reading includes selections from the major genres (poetry, fictions, drama, nonfiction prose) together with a variety of critical and historical approaches. Projects introduce students to the goals and methods of literary research, including the use of computers, and provides practice in writing about literature.

**21&62:350:310. ENGLISH GRAMMAR (3)**

Advanced English grammar; a survey of transformational-generative approaches, with attention to classroom practice and problems, including dialects of black English, English as a second language, and remedial English.

**21&62:350:311. SEVENTEENTH-CENTURY LITERATURE (3)**

A study of nondramatic prose and poetry from 1600 to 1660, exclusive of Milton; attention given to historical background.

**21&62:350:313. THE ART OF SATIRE (3)**

History, theory, and practice from Jonson to the present.

**21&62:350:315,316. ENGLISH RENAISSANCE LITERATURE (3,3)**

A study of nondramatic prose and poetry from 1500-1600; readings from the works of More, Wyatt, Surrey, Sidney, Spenser, Marlowe, Shakespeare, Gascoigne, Lyly, Nashe, and Deloney.

**21&62:350:317. READINGS IN THE ENGLISH PRE-ROMANTICS (3)**

Survey of the quest for new literary forms, in poetry and prose, from James Thomson to William Godwin.

**21&62:350:318. ENGLISH BIOGRAPHY AND AUTOBIOGRAPHY IN THE EIGHTEENTH CENTURY (3)**

Brief survey of the field from Plutarch through the eighteenth century; the theory and practice of biography and autobiography in writers such as Colley, Cibber, Fielding, Hume, Gibbon, Goldsmith, Johnson, and Boswell.

**21&62:350:319,320. SHAKESPEARE (3,3)**

A sampling of history, tragedy, comedy, and romance in plays representing the span of Shakespeare's creative life.

**21&62:350:323,324. ENGLISH DRAMA TO 1642, ASIDE FROM SHAKESPEARE (3,3)**

From the beginnings of English drama—miracle and morality plays, interludes—to the work of Shakespeare's contemporaries and successors.

**21&62:350:325,326. THE EIGHTEENTH CENTURY (3,3)**

*First term:* Swift, Pope, and their contemporaries; *second term:* the period of Johnson.

**21&62:350:329,330. THE ROMANTIC PERIOD (3,3)**

*First term:* works of Blake, Wordsworth, and Coleridge; *second term:* works of Byron, Shelley, Keats, and their contemporaries.

**21&62:350:331. THE ART OF THE FILM (3)**

The viewing, analysis, and discussion of selected motion pictures by such directors as Griffith, Eisenstein, Ford, Huston, Welles, Bergman, Fellini, Buñuel, and Kurosawa; some films studied in relation to their literary sources.



**21&62:350:332. AMERICAN FILM (3)**

The dominant tendencies in the rise of American film from the silent era to the present, with emphasis on comedy, the western, and the gangster-thriller.

**21&62:350:333,334. THE VICTORIAN PERIOD (3,3)**

Poetry and prose of the years 1832 to 1900: social, political, and artistic background of the period.

**21&62:350:337,338. TOPICS IN LITERATURE (3,3)**

Social conflict, personal values, urban problems, technology; the relation of literature to mythology, psychology, and philosophy. A different theme or topic each term.

**21&62:350:339,340. MAJOR WRITERS OF THE TWENTIETH CENTURY (3,3)**

Backgrounds of modern British and American literature; major prose writers and poets of our century. *First term*: works produced between 1900 and 1939; *second term*: works from World War II to contemporary writing.

**21&62:350:341. MYTHOLOGY IN LITERATURE (3)**

Mythology from the ancient cultures influential in later literature and thought. Topics include the birth of the gods, the creation of the universe, love sacred and profane, the cult of the hero, and visions of the afterlife.

**21&62:350:342. MODERN ENGLISH POETRY (3)**

Poetry from the 1920s to the present: Eliot, Auden, Spender, Thomas, Hughes, Larkin, and others.

**21&62:350:343. THE BIBLE AS LITERATURE I (3)**

A study of the Bible, its literary variety, and historical and religious development in the Old Testament.

**21&62:350:344. THE BIBLE AS LITERATURE II (3)**

A study of the Bible, its literary variety, and historical and religious development in the New Testament.

**21&62:350:345,346. MODERN DRAMA (3,3)**

Dramatic literature beginning with the advent of realism in the 1860s; European, English, Irish, and American plays studied, with attention to major movements and the philosophical and artistic forces which produced them. *First term*: plays by Ibsen, Chekhov, Strindberg, Wilde, Shaw, and O'Neill; *second term*: works by Brecht, Pirandello, Beckett, Hellman, Miller, Williams, and Genet.

**21&62:350:349,350. THE ENGLISH NOVEL (3,3)**

Beginnings and development through the nineteenth century; *first term*: novels by Defoe, Richardson, Fielding, Goldsmith, Sterne, Godwin, and Lewis; *second term*: works by Austen, Dickens, Thackeray, the Brontës, George Eliot, Hardy, and Butler.

**21&62:350:351,352. SURVEY OF WORLD LITERATURE (3,3)**

A survey, through translations, of significant works in world literature and their influence on Western thought.

**21&62:350:353,354. MODERN AND CONTEMPORARY ENGLISH NOVEL (3,3)**

English fiction from 1900 to the present. Selected works of Virginia Woolf, D.H. Lawrence, Doris Lessing, A.S. Byatt, and Pat Barker illustrate formal shifts linked to social and economic changes. Questions are posed about narratives and how to read and write novels.

**21&62:350:355. THE TECHNIQUE OF POETRY (3)**

A study of metrical structure, the development of poetic form, and poetry in relation to other forms of literary expression.

**21&62:350:356. CARIBBEAN LITERATURE (3)**

Familiarizes the student with the basic themes and issues of Caribbean societies as represented in literature. The choice of texts reflects the linguistic and racial diversity of Caribbean cultures, as well as emphasizing the links among them.

**21&62:350:360. TOPICS IN WOMEN AND LITERATURE (3)**

The images and writing styles of women's poetry, drama, fiction, and nonfiction prose in different cultures; common themes and variations connected with class, ethnic, racial, and other differences; use and revision of conventions and stereotypes by both male and female writers.

**21&62:350:361. WOMEN IN LITERATURE (3)**

*Prerequisite: Junior or senior standing or permission of instructor.* Selected literature by women that focuses specifically on women; works by Marge Piercy, Kate Chopin, Charlotte Perkins Gilman, Alice Walker, and Mary Wollstonecraft. Emphasis on changing and continuous notions of womanhood and their formal representation in fiction; particular paradigms employed are female identity and the novel of female development.

**21&62:350:362. WOMEN IN LITERATURE (3)**

*Prerequisite: Junior or senior standing or permission of instructor.* Selected literature by women that focuses specifically on women; works by Jane Austen, Louisa May Alcott, Virginia Woolf, and Toni Morrison examined. Emphasis on changing and continuous notions of womanhood and their formal representation in fiction; particular paradigms employed are marriage and the community of women.

**21&62:350:363,364. SPECIAL TOPICS IN FILM (3,3)**

*Prerequisite: At least 3 credits in a college-level film course.* Topics change from year to year; topics include themes (e.g., women in film, the war film); studies in a major director (e.g., Bergman, Ford, Fellini, Hitchcock); national cinemas other than the American film; and film theory and criticism.

**21&62:350:365. WORLD DRAMA TO 1900 (3)**

A survey of drama throughout the world, from the Greek classics to forerunners of modern realism.

**21&62:350:368. RESTORATION AND EIGHTEENTH-CENTURY DRAMA (3)**

English drama from Dryden to Sheridan, with emphasis on theatrical backgrounds.

**21&62:350:371. MILTON (3)**

Literary and social backgrounds; the life of Milton, and his English and Latin works (the latter in translation).

**21&62:350:373. CHAUCER (3)**

Literary and social backgrounds; the life of Chaucer, Chaucer's language, and extensive reading of his works.

**21&62:350:375. WRITING NONFICTION (3)**

*Prerequisites: 21&62:350:101-102 or equivalent.* Workshop survey of nonfictional forms—autobiography, oral history, case study, and factual narrative; nonfiction writing projects, workshop discussion, individual consultations, and, where appropriate, collaboration in writing projects with other disciplines.

**21&62:350:377. SCIENCE FICTION, TECHNOLOGY, AND SOCIETY (3)**

Science fiction as a principal cultural expression of the impact of science and technology on society from the Industrial Revolution to the present and future.

**21&62:350:378. MIDDLE ENGLISH LITERATURE, ASIDE FROM CHAUCER (3)**

A survey of medieval English literature from 1200 to 1500, with emphasis on the romances, popular ballads, lyrics, dramas, and religious and political allegories; selections read in modernized versions.



**21&62:350:379. COMPUTERS AND LITERATURE (3)**

*Prerequisites: 21&62:350:101-102 or equivalent.*

The use and image of computers in literature and literary study; word processing, online retrieval, computer-assisted instruction and learning (CAI and CAL), artificial intelligence (AI), and information technology (IT); how computers parse sentences, write machine poetry, make literary indexes, create concordances, and do stylistic analyses; the image of computers and other intelligent technology in imaginative literature—readings by Swift, Blake, Butler, Huxley, Orwell, Clarke, Asimov, Burgess, Vonnegut, Pynchon, Lessing, Joyce, and Dylan Thomas.

**21&62:350:380. THE EUROPEAN RENAISSANCE AND ENGLISH LITERATURE (3)**

Historical background and significant works of European literature during the rise of humanism and the Reformation; emphasis on their relation to contemporary English literature.

**21&62:350:381. THE SHORT STORY (3)**

Reading and critical study of classical, medieval, and modern short stories; discussion of predominant techniques and theories.

**21&62:350:382. JAMES JOYCE (3)**

A survey of Joyce's writings; intensive study of some major works.

**21&62:350:385. EIGHTEENTH- AND NINETEENTH-CENTURY DRAMA (3)**

English drama and its background from Farquhar to Wilde.

**21&62:350:391. WRITING FOR PUBLICATION (3)**

*Prerequisite: Writing sample must be presented to instructor before registration.*

*Credit not given for both this course and 21&62:570:391.*

Advanced feature and article writing; students function as editorial board, discussing ideas for news features and magazine articles, and offering constructive criticism to each member-writer; students must produce a newspaper feature and a magazine article; the process is from query letter to finished feature and article.

**21&62:350:393,394. STUDIES IN LITERARY RELATIONS (3,3)**

Critical relations between works of different periods or genres; the variety of literary responses to a given historical moment; the relation of English and American literature to its intellectual and social origins; the effects of literary works on society. Various special topics film courses (e.g., studies in film genre or the works of a director) are also offered.

**21&62:350:395. NUCLEAR WAR AND LITERATURE (3)**

*Credit not given for both this course and 21&62:050:395.*

The development of nuclear weapons in culture and history from their first appearance as fiction in the first decade of the twentieth century through the imagined futures that now form part of everyday life. Readings of works from Japan, the U.S., the former Soviet Union, and other nations.

**21&62:350:398. LITERATURE OF PROTEST (3)**

Literary works of several nations and eras; themes include economic, political, or social injustice and oppression; authors include Blake, Dos Passos, Gaskell, Mill, Shaw, Silone, Sinclair, Solzhenitsyn, Swift, and Thoreau.

**21&62:350:405,406. MAJOR VICTORIAN AUTHORS (3,3)**

Intensive study of two or more Victorian writers each term; the relation of their work to the intellectual and historical background of their times.

**21&62:350:407,408. INDEPENDENT STUDY IN ENGLISH (3,3)**

*Prerequisite: Permission of program adviser. See also 21&62:350:495,496.*

Designed for students who wish to pursue literary studies (and who do not qualify for the Honors Program 21&62:350:495, 496) outside the scope of existing courses. The student must interest a faculty member in supervising the project, convince him or her that the student has the ability to do the work, and then submit a written request to the department chairperson naming the consenting faculty supervisor. All other arrangements are determined by the student and supervisor.

**21&62:350:411. DEVELOPMENT OF THE ENGLISH LANGUAGE (3)**

Historical study of Old, Middle, and Modern English, with a survey of lexicography.

**21&62:350:415,416. SEMINAR IN LITERATURE (3,3)**

*Prerequisites and topic to be determined by instructor.*

Course material is specialized and changes from year to year. Some appropriate subjects: politics and fiction, theories and forms of tragedy, the Irish Renaissance.

**21&62:350:417,418. LITERARY CRITICISM (3,3)**

*Prerequisite: Junior or senior standing or permission of instructor.*

Important concepts of literary value; *first term*: the beginnings and development through the early nineteenth century; *second term*: more recent trends.

**21&62:350:419,420. AUTHORS (3,3)**

Intensive study of the life and works of one or more major authors; possible authors include Dickens, Faulkner, Pound, Eliot, Frost, Yeats, Hawthorne, and Melville.

**21&62:350:429,430. ASPECTS OF THE EUROPEAN NOVEL (3,3)**

*Prerequisites: 21&62:350:215,216 or equivalent.*

Selected writings by Stendhal, Dostoevski, Conrad, Proust, and Malraux; development of the art of fiction.

**21&62:350:431. THE WORLD NOVEL TO 1900 (3)**

Major novels selected from the world's literatures, such as the Russian, French, Spanish, Japanese, and German, read in translation.

**21&62:350:432. THE WORLD NOVEL IN THE TWENTIETH CENTURY (3)**

Major novels from the literatures of Europe, Latin America, Africa, and the East, read in translation.

**21&62:350:433. ASIAN-AMERICAN LITERATURE (3)**

Students are introduced to the most important works and issues in the emergence of Asian-American literature; covered are Chinese-American, Japanese-American, Korean-American, Filipino-American, and Indian-American works, among others; readings from Bulosan, Sone, Hong-Kingston, Mukherjee, Hwang, and Tan.

**21&62:350:449,450. POPULAR CULTURE (3,3)**

A history of the popular book, newspapers, magazines, photography, film, radio, television, and other media as they have influenced and been influenced by literature, commencing with the eighteenth and nineteenth centuries in the first term and continuing to the present in the second term.

**21&62:350:461. CREATIVE WRITING (3)**

Introduction to the elements of fiction. Exercises and practice in learning the basic tools of fiction writing and how to use them to tell a story.

**21&62:350:462. CREATIVE WRITING (3)**

*Prerequisite: 21&62:350:461 or permission of instructor.*

Advanced course in recognizing and applying the elements of fiction and shaping them into various forms of story.

**21&62:350:463,464. CREATIVE WRITING: POETRY (3,3)**

*Prerequisite: Permission of instructor.*

Creative workshop in the forms of poetry and verse.

**21&62:350:467. RECENT TRENDS IN BRITISH DRAMA (3)**

An analysis of post World War II British dramatic literature; emphasis on theatrical movements, major figures, and major plays; topics include the "new realism," and the development of the antihero as a dramatic character; readings from Arden, Bond, Delaney, Orton, Osborne, Pinter, and Stoppard.

**21&62:350:469,470. LITERARY GENRES (3,3)**

Readings in the development of a single literary form or type each term—tragedy, comedy, fantasy, romance, epic, detective fiction, or other kinds.

**21&62:350:479. MAJOR BRITISH AUTHORS I (3)**  
Selected British literature from *Beowulf* to Pope.

**21&62:350:480. MAJOR BRITISH AUTHORS II (3)**  
*May be taken independent of 21&62:350:479.*  
Selected British literature from Blake to T.S. Eliot.

**21&62:350:481. READINGS IN A MAJOR AUTHOR (3)**  
An intensive study of the works of a single author whose name is announced in the term preceding the course offering; Faulkner, Joyce, the Brontës, and O'Neill were offered recently.

**21&62:350:482. READINGS IN A MAJOR AUTHOR (3)**  
*May be taken independent of 21&62:350:481.*  
Supplements 21&62:350:481 and uses a similar approach.

**21&62:350:495,496. HONORS PROGRAM—STUDIES IN LITERATURE (3,3)**  
*Open only to honors students. Prerequisite: Permission of program adviser. See also 21&62:350:407,408.*

The pursuit of special projects outside the scope of any of the existing courses under the guidance of a member of the department. The student must interest a faculty member in supervising the project and then submit a written request to the department chairperson naming the consenting faculty supervisor. All other arrangements are determined by student and supervisor.

**21&62:350:497,498. HONORS PROJECT—ENGLISH (3,3)**  
*Prerequisites: Junior or senior standing and permission of department chairperson.*

## Courses (American Literature 352)

**21&62:352:222. MAJOR AMERICAN WRITERS (3)**  
*Open to qualified first-year students with permission of instructor or department chairperson.*  
Intensive study of the works of two or more major American writers.

**21&62:352:223,224. SURVEY OF AMERICAN LITERATURE (3,3)**  
*Open to sophomores and juniors. Can be taken as elective toward English major.*  
The effects of intellectual and social changes, and the relationship between important authors and their times. American literature to the Civil War in the first term, continuing to the present in the second term.

**21&62:352:300,301. AMERICAN POETRY (3,3)**  
American poetry and its backgrounds, critical standards, and techniques from the seventeenth century to the present.

**21&62:352:333. AMERICAN DRAMA (3)**  
A survey of American plays in their historical context from early melodramas, romances, and comedies through the modern realistic and expressionistic work of O'Neill, Odets, Anderson, Hellman, Miller, Williams, Albee, Baraka, and others.

**21&62:352:337,338. AMERICAN LITERATURE OF THE NINETEENTH CENTURY (3,3)**  
Studies in two or more related authors; emphasis on Emerson, Thoreau, Poe, Hawthorne, or Melville in the first term and on Whitman, Twain, James, or Dickinson in the second term.

**21&62:352:343,344. AMERICAN LITERATURE OF THE TWENTIETH CENTURY (3,3)**  
Major fiction, poetry, and other writing by Dreiser, Anderson, Hemingway, Fitzgerald, Eliot, O'Neill, Dos Passos, Frost, Faulkner, or other recent American authors.

**21&62:352:348,349. MINORITIES IN AMERICAN LITERATURE (3,3)**  
*First term:* poetry, short fiction, autobiographies, and novels from the nineteenth to midtwentieth centuries; *second term:* texts from the twentieth century. Texts by African-American, Native-American, Hispanic, Asian-American, Jewish-American, and other "minority" or immigrant writers; emphasis on social, historical, and political contexts, and social construction of "race" and ethnicity.

**21&62:352:361. STUDIES IN AMERICAN AUTHORS I (3)**  
Selections from the colonial period to the Civil War.

**21&62:352:362. STUDIES IN AMERICAN AUTHORS II (3)**  
*May be taken independent of 21&62:352:361.*  
Selections from the post-Civil War period to the twentieth century.

**21&62:352:363,364. THE NOVEL IN AMERICA (3,3)**  
*First term:* novels of the nineteenth and early twentieth centuries; *second term:* novels of the twentieth century. A diverse range of American novels by both canonical and noncanonical writers; emphasis on the social and historical contexts of fictional conventions.

**21&62:352:368,369. SPECIAL TOPICS IN AMERICAN LITERATURE (3,3)**  
Topics change from year to year. The specific topic is named in the *Schedule of Classes*.

**21&62:352:376. MODERN AMERICAN POETRY (3)**  
Poetry from the imagist revolt of the 1920s to the present: Frost, Stevens, Williams, Moore, Roethke, Lowell, Plath, Cummings, Sexton, and others.

**21&62:352:377,378. CONTEMPORARY AMERICAN LITERATURE (3,3)**  
Survey of American fiction, poetry, drama, and other forms from World War II to the present.

**21&62:352:395,396. AFRO-AMERICAN LITERATURE (3,3)**  
Survey of the significant poetry and prose of black writers in Africa and the United States.

**21&62:352:420. RECENT TRENDS IN AMERICAN FICTION (3)**  
American fiction from 1930 to the present.

**21&62:352:468. RECENT TRENDS IN AMERICAN DRAMA (3)**  
Post-World War II American plays and playwrights and the major influences that determined the direction of American drama; recent developments in American theater, the influence of the avant-garde, the changing character of the American scene, the growth of black theater, and the "new realism"; readings from Albee, Bullins, Guare, Pinero, Rabe, Shepard, Ward, and others.

## Courses (Journalism, Media, and Writing 570)

**21&62:570:201,202. JOURNALISM AND COMMUNICATIONS MEDIA (3,3)**  
Two-term core seminar introducing the historical and philosophical development of journalism and media operations in the U.S. *First term:* Analysis and evaluation of the functions, practices, policies, and responsibilities of media institutions in the dissemination of information to the public. Emphasis on ethical and aesthetic issues related to newspapers, magazines, books, other print-based media, and new communications technologies. *Second term:* Analysis and evaluation of the distinctions between print and electronic journalism and between commercial and noncommercial communications. Emphasis on social impact, regulatory policy, and ethical and aesthetic issues related to broadcast and cable television, radio, computer-based information delivery systems, and the "information superhighway."

**21&62:570:337. BASIC REPORTING (3)**  
*Prerequisites: 21&62:570:201,202 or permission of the journalism director.*  
Basic news gathering techniques used at newspapers, magazines, and television and radio stations; fieldwork; stories are written at typewriters under newsroom conditions.

**21&62:570:338. ADVANCED REPORTING (3)**  
*Prerequisite: 21&62:570:337.*  
Urban affairs reporting; police headquarters, city hall, courts, board of education, and other urban beats.

**21&62:570:339. INVESTIGATIVE REPORTING (3)**

*Prerequisite: Junior or senior standing.*

The art of the exposé; full investigation of a complex story; techniques for acquiring records; the investigative interview; rights of reporters; final project earmarked for professional publications.

**21&62:570:343. PUBLIC RELATIONS PRACTICES (3)**

*Prerequisites: 21&62:570:201,202, 337.*

A study of the public relations process in the public and private sectors; students complete a public relations project.

**21&62:570:344. JOURNALISM, ETHICS, AND THE LAW (3)**

*Prerequisites: 21&62:570:201,202, 337.*

Libel, ethics, and media law; emphasis on protection of sources, privacy, fair trial, free press, controversy, and freedom of information statutes.

**21&62:570:346. INDEPENDENT STUDY (3)**

A special journalism project for qualified students, conducted with a member of the faculty.

**21&62:570:348. SPORTS REPORTING (3)**

*Prerequisites: 21&62:570:201,202, 337 or permission of the journalism director.*

Examination of sports journalism and its impact on the urban environment; students produce articles dealing with this aspect of reporting.

**21&62:570:385. PHOTOJOURNALISM (3)**

*Prerequisites: 21&62:570:201,202, 337, 338 or permission of instructor.*

Using a camera as a journalism textbook, how to take pictures and develop them under deadline conditions.

**21&62:570:386. TELEVISION NEWS WRITING (3)**

*Prerequisites: 21&62:570:201,202, 337, 338 or permission of instructor.*

Writing copy to picture; how to take a print story and make it a television story; outside field production work.

**21&62:570:387. RADIO NEWS WRITING (3)**

*Prerequisites: 21&62:570:201,202, 337, 338 or permission of instructor.*

Writing news copy for the ear; how to take a print story and make it an airwaves success; how to combine reality and copy to make a good radio news feature.

**21&62:570:388. WORLD JOURNALISM (3)**

*Prerequisites: 21&62:570:201,202, 337, 338 or permission of department chairperson.*

Modern journalism in different countries, the advent of technology, private and government press structures, media services, and practices in nations of the world.

**21&62:570:391. WRITING FOR PUBLICATION (3)**

*Prerequisite: Writing sample must be presented to instructor before registration.*

*Credit not given for both this course and 21&62:350:391.*

Advanced feature and article writing; students function as editorial board, discussing ideas for news features and magazine articles, and offering constructive criticism to each member-writer; students must produce a newspaper feature and a magazine article; the process is from query letter to finished feature and article.

**21&62:570:400. TOPICS IN JOURNALISM (3)**

*Prerequisites: 21&62:570:201,202, 337, 338 or permission of department chairperson.*

Study in a specialized field of journalism, including education, politics, or crime.

**21&62:570:455,456. JOURNALISM MASTERS (3,3)**

The literature of journalism. *First term:* from journalism's historic roots to 1937; *second term:* from World War II to the present. Works of Hemingway, Orwell, Reed, and Agee.

**21&62:570:457. COPY EDITING (3)**

*Prerequisites: 21&62:570:201,202, 337, 338.*

Modern methods of copy editing, including video terminals; functions and responsibilities of the copy editor.

**21&62:570:459,460. JOURNALISM INTERNSHIP (3,3)**

*Open only to seniors.*

For those who have demonstrated superior skill in their field; work at least one day a week at a newspaper, magazine, broadcasting station, or public relations firm. Evaluation by staff executives of the participating organization.

**21&62:570:490. JOURNALISM LABORATORY (1)**

Fieldwork in the advanced reporting course.

**21&62:570:493,494. NEWSROOM WORKSHOP (3,3)**

*Prerequisites: 21&62:570:201,202, 337, 338 or permission of department chairperson.*

Seminar for advanced students on a term project; professional level performance on newspapers and in broadcast organizations.

## ENVIRONMENTAL SCIENCES 375

### *Program in Environmental Sciences*

*Boyden Hall (973/353-5100)*

A major in environmental sciences is offered at NCAS.

### Major Requirements

The major in environmental sciences is an interdisciplinary program among the Departments of Geology, Biology, and Chemistry. The goal of the program is to give students a well-rounded background in science as it relates to the environment. The program is rigorous and is designed either to prepare graduates for technical positions in the environmental industry or to continue their education in graduate studies. The program also prepares students to pursue an environmental career through the fields of law, business, sociology, health, or political science.

The environmental science major requires at least 65 credits in the following courses:

#### **Foundation Courses (27 credits)**

21&62:120:101-102	General Biology (4,4)
21&62:120:205	Environmental Issues (3)
21&62:160:113-114	General Chemistry Laboratory I,II (1,1)
21&62:160:115-116	General Chemistry I,II (3,3)
21&62:460:103	Planet Earth (3)
21&62:460:104	Planet Earth Laboratory (1)
21&62:460:106	Environmental Geology (3)
21&62:460:107	Environmental Geology Laboratory (1)

#### **Quantitative Courses (6 credits)**

21&62:640:135	Calculus I (3)
21&62:640:327	Probability and Statistics (3)

#### **Field Courses (5-6 credits)**

21&62:120:381	Field Studies in Animal Ecology (2) or 21&62:120:470 Field Ecology (3)
21&62:460:311	Geologic Field Problems (3)

#### **Senior Seminar (3 credits)**

EVSc 613	Environmental Problem Solving (3) (NJIT course)
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#### **Advanced Science Courses (22 credits)**

21&62:120:335	General Microbiology (4)
21&62:120:370	Plant Ecology (3) or 21&62:120:380 Animal Ecology (3)
21&62:160:227	Experimental Analytical Chemistry (3)
21&62:460:309	Geomorphology (3)



21&62:460:427	Hydrogeology (3)
Chem 360	Environmental Chemistry (3) (NJIT course)
Chem 365	Environmental Organic Chemistry (3) (NJIT course)

### Recommended Electives

21&62:120:311	Taxonomy of Vascular Plants (4) or 21&62:120:327 Biology of Vertebrates (4)
21&62:460:406	Applied Geophysics (3)
21&62:750:203	General Physics (3)
21&62:750:205	Physics Laboratory (1)
ENE 560	Chemistry for Engineers (NJIT course) (3)
STS 418	Environmental Economics (NJIT course) (3)
STS 560	Ethics and the Environment (NJIT course) (3)

## FRENCH 420

*Department of Classical and Modern Languages and Literatures*  
Conklin Hall (973/353-5498)

The French major and minor are offered at NCAS.

The department offers major programs in ancient Mediterranean civilizations (Classics 190, Greek 490, Hebraic Studies 500, Latin 580), French 420, German 470, Italian 560, Slavic 860, and Spanish 940. Students majoring in one language area may concurrently major or minor in another language area. The department also participates in the interdisciplinary major, a multidisciplinary minor in International Affairs, the Rutgers Study Abroad Program, and offers courses in Portuguese.

### Major Requirements

The requirements for a major in French are the following:

- 30 credits in French language and literature, which may include 21:420:131,132 Intermediate French. Any of the French language and literature courses numbered 200 or higher may be taken to satisfy this requirement, with the exception of 21:420:311,312 French Literature in English Translation. The prerequisite for advanced literature courses is 21:420:205,206 Introduction to French Literature.
- 9 credits in other courses within the department, at least three of which must be in literature in the original language or in translation.
- 6 credits from one or more of the following as approved by an adviser: English literature courses numbered higher than 215,216; philosophy; music history; art history.

### Minor Requirements

A minor in French requires 18 credits in French language and literature. These credits may include 21:420:131,132 Intermediate French and must include 6 credits in courses numbered 300 and above, with the exception of 21:420:311,312 French Literature in English Translation.

The Department of Classical and Modern Languages and Literatures also offers minors in ancient Mediterranean civilizations, German, Italian, Slavic, and Spanish. Students may pursue one or more minor concentrations.

### Teacher Certification

Students seeking teacher certification in French must complete the requirements for a major in French as well as satisfy other requirements for certification. For details regarding admission to the teacher education program and the requirements, students should consult both their department adviser and the chairperson of the education department.

### Courses

#### 21:420:101-102. ELEMENTARY FRENCH (3,3)

*Intended for students with little or no previous knowledge of French. Both terms must be completed to receive credit.*

The fundamentals of grammar with drill in speaking and reading. A minimum of ten hours of language laboratory work per term is required in NCAS elementary language courses.

#### 62:420:101-102. ELEMENTARY FRENCH (3,3)

*Intended for students with little or no previous knowledge of French. Experience in some foreign language learning recommended.*

Beginning course designed to develop the basic skills of listening, speaking, reading, and writing; study of basic grammar and vocabulary. Students are urged to do supplementary work in the language laboratory.

#### 21:420:131,132. INTERMEDIATE FRENCH (3,3)

*Prerequisite: 21:420:102 or equivalent as determined by placement examination.*

Grammar review and selected readings in literature and cultural areas. Emphasis on speaking and writing French.

#### 62:420:131,132. INTERMEDIATE FRENCH (3,3)

Practice in speaking, reading, and writing French; review of grammar; readings from representative authors and contemporary French texts. Students are urged to do supplementary work in the language laboratory.

#### 21:420:203. CONVERSATION AND COMPOSITION (3)

Grammar review through oral and written usage. Oral exposés; compositions; language laboratory for conversation, grammar, and pronunciation reinforcement.

#### 21:420:204. COMPOSITION AND CONVERSATION (3)

*Prerequisite: 21:420:203 or permission of instructor.*

Intensive practice in oral and written French.

#### 21:420:205,206. INTRODUCTION TO FRENCH LITERATURE (3,3)

*Prerequisite: 21:420:132 or equivalent. 21:420:205 and 206 are prerequisites to advanced courses in French literature.*

Readings in French literature chosen to illustrate various literary forms and periods. Conducted as far as is practical in French.

#### 21&62:420:260. CONTEMPORARY FRANCE (3)

*Taught in English. Not open to French majors or minors.*

Interdisciplinary study of contemporary France and the French: political, social, and economic concerns; technological innovations; the arts and their function in society; the continuity of tradition and the challenge of change.

#### 21:420:301. ADVANCED GRAMMAR AND COMPOSITION (3)

*Prerequisites: 21:420:203,204. For prospective teachers and others who wish to acquire more fluency in spoken and written French.*

Special stress on unusual points of grammar and syntax.

#### 21:420:302. ADVANCED GRAMMAR AND CONVERSATION (3)

*Prerequisites: 21:420:203,204.*

Conversation practice and free composition on a wide range of subjects.



**21:420:304. BLACK WRITERS IN FRENCH FROM AFRICA AND THE WEST INDIES (3)**

*Prerequisites: 21:420:203,204 or 205,206.*

Study of the major writers of French-speaking Africa and the West Indies, with emphasis on the poets of “négritude,” especially Césaire, Senghor, and Damas.

**21:420:311,312. FRENCH LITERATURE IN ENGLISH TRANSLATION (3,3)**

*Open to all students except French majors. Prerequisite: 21&62:350:102.*

In-depth reading of major works in French literature; content varies each term. When the theme of “Sexual Politics in the Novel and Drama” is taught, 3 credits toward the women’s studies major and minor are granted. Other themes include “The Novel as Social Document” and “The Many Faces of Love in Various Genres.”

**21:420:347. FRENCH CIVILIZATION (3)**

The development of French political, social, cultural, and artistic institutions and traditions from pre-Roman Gaul to the twentieth century.

**21:420:353,354. INDIVIDUAL STUDY IN FRENCH (3,3)**

*Prerequisite: Permission of department chairperson or instructor.*

Individual study for students interested in specialized topics and research in French language or literature.

**21:420:361. MOLIÈRE (3)**

*Prerequisites: 21:420:205,206.*

Major and selected minor plays; lectures, class discussions, reports.

**21:420:362. VOLTAIRE (3)**

*Prerequisites 21:420:205,206; or permission of instructor.*

Historical works, drama, poetry, satire, and fiction; lecture, class discussion, papers.

**21:420:415. MEDIEVAL FRENCH LITERATURE (3)**

The course deals principally with the Chansons de Geste, the Arthurian Romances, the Tristan story, the theater, and lyric poetry.

**21:420:416. FRENCH LITERATURE OF THE RENAISSANCE (3)**

The course deals principally with Rabelais and Montaigne and the development of lyric poetry from Marot to La Ceppède.

**21:420:417. THE FRENCH THEATER SINCE 1750 (3)**

Major works and critical theories of the last two centuries; close reading of selected plays.

**21:420:418. FRENCH POETRY (3)**

An exploration of poetry—forms, language, themes—in works by Ronsard, Christine de Pisan, Lamartine, Baudelaire, La Fontaine, Anna de Noailles, and others.

**21:420:421,422. FRENCH LITERATURE OF THE GOLDEN AGE (3,3)**

Readings of seventeenth-century masterpieces, with a background of critical theory and literary history; the Baroque and *préciosité*—examples of late Renaissance style; analysis of French classicism; emphasis on the theater of Corneille, Racine, and Molière; and various works by La Fontaine.

**21:420:427,428. SEMINAR IN FRENCH LITERATURE (3,3)**

*Prerequisites: 21:420:205,206 or permission of instructor.*

Exploration of ideas and concepts as they are reflected in diverse genres of French literature throughout the eight centuries of its history; content varies each term.

**21:420:431,432. EIGHTEENTH-CENTURY FRENCH LITERATURE (3,3)**

The major writers and genres of the century; *first term:* Voltaire and the Age of Reason; *second term:* Rousseau and the Age of Sentiment.

**21:420:441. NINETEENTH-CENTURY FRENCH LITERATURE (3)**

The innovative movements of romanticism and realism in prose fiction, criticism, verse, and drama; thematic and structural study of major texts by Lamartine, Musset, Hugo, Vigny, Madame de Staël, Constant, Chateaubriand, Balzac, Stendhal, and others.

**21:420:442. NINETEENTH-CENTURY FRENCH LITERATURE (3)**

The development of the romantic movement through realism, naturalism, *Parnasse*, and symbolism; thematic and structural analysis of works of Flaubert, Gautier, Heredia, Leconte de Lisle, Zola, Baudelaire, Verlaine, and Rimbaud.

**21:420:451,452. TWENTIETH-CENTURY FRENCH LITERATURE (3,3)**

*First term:* in-depth reading and analysis of the major novelists and playwrights of this century—Proust, Mauriac, Colette, Cocteau, Anouilh, and the surrealist poets. *Second term:* existentialism, the theater of the absurd, and the new novel, with special attention to Malraux, Sartre, de Beauvoir, Camus, Beckett, Ionesco, Genet, and Rochefort.

**21:420:453,454. THE FRENCH NOVEL (3,3)**

French novelists from Mme de La Fayette to Robbe-Grillet and other authors of the *nouveau roman*.

## GEOLOGICAL SCIENCES (Geology 460, Meteorology 670)

### Department of Geological Sciences

Boyden Hall (973/353-5100)

The major and minor in geology are offered at NCAS.

### Major Requirements

The aim of the Department of Geological Sciences is to foster the intellectual development of its students within a geological perspective, and to prepare them to evaluate critically contemporary issues and problems relating to the earth’s physical environment. For anyone contemplating graduate studies and a professional career in geology, certain ancillary courses are required and others strongly recommended.

Geology majors may (A) choose a traditional curriculum, (B) design their own curriculum, or (C) select an environmental science track curriculum. These curricula may serve as a preparation for graduate studies or a career in the petroleum or mining industries, environmental geology, oceanology, land-use planning, teaching, business, and law.

Environmental Geology also offers graduate studies in several areas of geology; it is possible to obtain the B.A. and M.S. degrees in five years.

### Curriculum A

This geology curriculum requires 57 credits.

#### Required courses (29 credits)

21&62:460:103	Planet Earth (3)
21&62:460:104	Planet Earth Laboratory (1)
<i>and either</i>	
21&62:460:106	Environmental Geology (3)
21&62:460:107	Environmental Geology Laboratory (1)
<i>or</i>	
21:460:114	Earth History (3)
21:460:115	Earth History Laboratory (1)
<i>or</i>	
21&62:460:113	History of Life (3)
21&62:460:116	History of Life Laboratory (1)
<i>and</i>	
21&62:460:311	Geologic Field Problems (3)
21&62:460:313	Invertebrate Paleontology (3)
21&62:460:314	Stratigraphy (4)
21&62:460:320	Structural Geology (4)
21&62:460:321	Mineralogy (4)
21&62:460:322	Petrology (3)

At least three of the following recommended courses (9 credits):

- 21&62:460:309 Geomorphology (3)
- 21&62:460:331 Oceanology (3)
- 21&62:460:401 Introduction to Geochemistry (3)
- 21&62:460:403 Optical Mineralogy (3)
- 21&62:460:406 Applied Geophysics (3)
- 21&62:460:414 Advanced Readings in Geology (3)
- 21&62:460:427 Hydrogeology (3)

Required cognate courses (19 credits)

- one year of general chemistry with laboratory (8)
- one year of general physics with laboratory (8)
- one term of mathematics (calculus) (3)

### Curriculum B

Students are encouraged to discuss with faculty members the possibility of their graduating through curriculum B. Those students who qualify for this curriculum are formally admitted to it by invitation of a faculty sponsor and must successfully complete the following requirements:

1. Grades of B or better in all geology courses
2. 24 to 27 credits in geology courses to be determined by the sponsor in consultation with the student
3. A written report based on a major research project, consisting of 6–9 credits
4. Year courses in mathematics, chemistry, physics and/or biology, and one year of a foreign language (French, German, or Russian)

### Curriculum C

The environmental science track requires a total of 63 credits.

Required geology courses (29 credits)

- 21&62:460:103 Planet Earth (3)
- 21&62:460:104 Planet Earth Laboratory (1)
- 21&62:460:106 Environmental Geology (3)
- 21&62:460:107 Environmental Geology Laboratory (1)
- 21&62:460:311 Geologic Field Problems (3)
- 21&62:460:314 Stratigraphy (4)
- 21&62:460:320 Structural Geology (4)
- 21&62:460:321 Mineralogy (4)
- 21&62:460:322 Petrology (3)
- 21&62:460:427 Hydrogeology (3)

Three additional geology courses (9 credits) to be chosen from the following list:

- 21&62:120:415 Paleobotany (4)
- 21&62:460:309 Geomorphology (3)
- 21&62:460:313 Invertebrate Paleontology (3)
- 21&62:460:401 Introduction to Geochemistry (3)
- 21&62:460:403 Optical Mineralogy (3)
- 21&62:460:406 Applied Geophysics (3)
- CE 506 Remote Sensing of the Environment (NJIT course) (3)
- SET 303 Photogrammetry and Aerial Photo Interpretation (NJIT course) (3)
- SET 420 Land Information Systems (3)

Required cognate courses (19 credits)

- one year of general chemistry with laboratory (8)
- one year of general biology with laboratory (8)
- one term of statistics (3)

Additional cognate courses (6 credits) to be chosen from the following list:

- 21&62:120:205 Environmental Issues (3)
- 21&62:120:370 Plant Ecology (or other field biology course) (3)
- 21&62:160:227 Experimental Analytical Chemistry (3)
- 21&62:670:303 Meteorology (3)
- 21&62:790:310 Science, Technology, and Public Policy (3)
- CE 341/CE 341A Soil Mechanics with Laboratory (NJIT course) (4)
- EM 631 Legal Aspects in Environmental Engineering (NJIT course) (3)
- ENE 360 Environmental Engineering (NJIT course) (3)
- ENE 361 Environmental Problems (NJIT course) (3)
- ENE 560 Environmental Chemistry (NJIT course) (3)
- STS 382 Geographic Perspectives on the Environment (NJIT course) (3)
- STS 413 Environmental History and Policy (NJIT course) (3)
- STS 418 Environmental Economics (NJIT course) (3)

### Minor Requirements

Students must fulfill 20 credits for a minor in the geological sciences.

The required courses are as follows:

1. Laboratory science (8 credits)
  - 21&62:460:103 Planet Earth (3)
  - 21&62:460:104 Planet Earth Laboratory (1)
  - and
  - 21&62:460:106 Environmental Geology (3)
  - 21&62:460:107 Environmental Geology Laboratory (1)
  - or
  - 21&62:460:113 History of Life (3)
  - 21&62:460:116 History of Life Laboratory (1)
  - or
  - 21&62:460:114 Earth History (3)
  - 21&62:460:115 Earth History Laboratory (1)
2. 12 additional credits of 200 or higher-numbered geology courses; 9 of the 12 credits must be in the 300- or 400-level courses.

### Teacher Certification

Students seeking teacher certification in earth science must complete the requirements for a major in the geological sciences department as well as satisfy other requirements for certification. For details regarding admission to the teacher education program and the requirements, students should consult both their department adviser and the chairperson of the education department.

### Courses (Geology 460)

#### 21&62:460:101. INTRODUCTION TO THE EARTH (3)

*Not intended for geology majors or students who have taken or plan to take 21&62:460:103.*

A nonlaboratory description of the earth; the processes that affect its composition, evolution, and history; the earth's interaction with the atmosphere and oceans.

**21&62:460:103. PLANET EARTH (3)**

*Not open to students who have taken 21&62:460:101. To complete the laboratory science requirement, students taking 21&62:460:103 and 104 must select either 21&62:460:113 and 116 or 21:460:114 and 115, or 21&62:460:106 and 107.*

The earth as a dynamic, evolving planet; its origin and nature considered as the interaction of solid earth, hydrosphere, and atmosphere; physical geology of our planet and the complex problems of environment and natural resources.

**21&62:460:104. PLANET EARTH LABORATORY (1)**

*Pre- or corequisite: 21&62:460:103. To complete the laboratory science requirement, students taking 21&62:460:103 and 104 must select either 21&62:460:113 and 116 or 21:460:114 and 115, or 21&62:106 and 107.*

Laboratory exercises on the following: the physical properties and identification of earth materials (materials and rocks); the use of maps and aerial photographs in the study of landforms and earth processes. Field trips to field stations in New Jersey and New York.

**21&62:460:106. ENVIRONMENTAL GEOLOGY (3)**

*Prerequisites: 21&62:460:103,104.*

The geologic controls on environmental problems and methods for mitigation are studied in a topical approach and with emphasis on urban-suburban settings. Topics include groundwater pollution and processes, soil pollution, air pollution and weather, slope stability, radiation, earthquake hazards, and coastal processes.

**21&62:460:107. ENVIRONMENTAL GEOLOGY LABORATORY (1)**

*Pre- or corequisite: 21&62:460:106.*

Applied hands-on exercises, to demonstrate the processes of groundwater movement, slope stability, soil pollution, water chemistry, air pollution and weather, evolution, and earthquakes. One class field trip held.

**21&62:460:113. HISTORY OF LIFE (3)**

*Prerequisites: 21&62:460:103,104 or permission of instructor.*

The evolution of life as recorded in the fossil record; the appearance of major groups of organisms and the transition to terrestrial environments leading to the appearance of man; interpretation of the fossil record in terms of the interaction of organisms and their environment.

**21:460:114. EARTH HISTORY (3)**

*Prerequisites: 21&62:460:103,104 or permission of instructor.*

Selected topics of geological significance in the earth's cosmic and geological history, particularly related to the physical and biological evolution of the earth and its inhabitants.

**21:460:115. EARTH HISTORY LABORATORY (1)**

*Pre- or corequisite: 21:460:114.*

A laboratory course related to 21:460:114. Examination of the important fossils, rocks, and geologic maps and their use in interpreting the earth's history; geology of the moon; field trips to the American Museum of Natural History.

**21&62:460:116. HISTORY OF LIFE LABORATORY (1)**

*Pre- or corequisite: 21&62:460:113.*

A laboratory course related to 21&62:460:113. Examination and interpretation of fossils as the record of past life; their morphology and ecology; their function as indicators of geologic time, and as documents of the course of evolution. Laboratory work as well as field trips to the American Museum of Natural History.

**21&62:460:215. THE PHYSICAL ENVIRONMENT AND MAN (3)**

A problem-oriented course relating geologic, oceanographic, and atmospheric factors to man's activities and survival; water and air pollution, waste disposal, earth resources, urban and engineering geology; natural hazards to man's environment such as earthquakes, mud flows and avalanches, tidal waves, storms, and radiation.

**21&62:460:252. FUELS AND ENERGY (3)**

*Prerequisite: 21&62:460:103 or permission of instructor.*

Origin, occurrence, distribution, production, and reserves of coal, oil, natural gas, uranium, and solar, geothermal, and other exotic forms of energy; the role of fuels and energy in our civilization, economy, and environment; living with the energy crisis.

**21&62:460:309. GEOMORPHOLOGY (3)**

*Lec. 2 hrs., lab. 3 hrs. Prerequisite: 21&62:460:311 or permission of instructor.*

A study of landform-making processes and their relation to climate and structure, as illustrated by landscapes and their elements.

**21&62:460:311. GEOLOGIC FIELD PROBLEMS (3)**

*Prerequisite: 21&62:460:107 or 114 or permission of instructor.*

Geologic field methods, the collection and recording of data in the field in a variety of geologic terrains; preparation of a geologic map and technical reports based on individual fieldwork.

**21&62:460:313. INVERTEBRATE PALEONTOLOGY (3)**

*Lec. 2 hrs., lab. 3 hrs. Prerequisite: 21&62:460:113 or 106 or 21&62:120:101-102 or permission of instructor.*

The development of invertebrate life through geologic time; classification, morphology, ecology, and evolution of fossil invertebrates.

**21&62:460:314. STRATIGRAPHY (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisite: 21&62:460:311.*

Principles of stratigraphy and sedimentation, with emphasis on interpretation of the stratigraphic records examined on all-day field trips through the Newark basin, Coastal Plains, Hudson Highlands, and Appalachian Foldbelt. Description, identification, and classification of sedimentary rocks.

**21&62:460:315. MINERAL RESOURCES (3)**

The nature and distribution of the stratigraphic and economically important minerals, fuels, and ores; their origin, exploitation, and conservation; international aspect of mineral resources, their role in industrial civilization, and influence on national power and world affairs.

**21&62:460:320. STRUCTURAL GEOLOGY (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisite: 21&62:460:311 or permission of instructor.*

Stress/strain and deformation of the earth and resultant structures; field and laboratory work in structural analysis and projections (stereographic, map, cross-section); basic mechanics and material science; structures of mountain belts, rifts, and other tectonic settings.

**21&62:460:321. MINERALOGY (4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisite: 21&62:460:113 or 106 or permission of instructor.*

Introductory study of minerals; their origin, occurrence, crystal systems, properties, and uses; emphasis on sight identification based on simple physical and chemical tests; X-ray analysis methods.

**21&62:460:322. PETROLOGY (3)**

*Lec. 2 hrs., lab. 3 hrs. Prerequisite: 21&62:460:321.*

Description, identification, and classification of igneous and metamorphic rocks; discussion of their origin.

**21&62:460:331. OCEANOLOGY (3)**

*Prerequisites: 21&62:460:113 or 106, or any laboratory science plus 21&62:460:101 or 103.*

The origin, evolution, and characteristics of the oceans; geology of the ocean basins; waves, currents, and tides; coastal features; mineral resources of the sea; life in the sea.

**21&62:460:333. PRINCIPLES OF CLIMATOLOGY AND PALEOCLIMATOLOGY (3)**

*Prerequisite: 21&62:670:303.*

Study of ancient climates through the application of climatologic and meteorologic principles to the geologic record. Fieldwork.

**21&62:460:401. INTRODUCTION TO GEOCHEMISTRY (3)**

*Lec. 2 hrs., lab. 3 hrs. Prerequisites: 21&62:460:322 and one year of chemistry, or permission of instructor.*

The application of principles of chemistry to the study of geologic processes such as weathering, lithification, metamorphism, melting, and crystallization of rocks; distribution of elements; crystal chemistry; phase equilibria; ore mineralization.



**21&62:460:403. OPTICAL MINERALOGY (3)**

Lec. 2 hrs., lab. 3 hrs. Prerequisite: 21&62:460:321.

The behavior of light in crystalline substances and the optical properties of minerals; use of polarizing microscope; identification of nonopaque minerals in thin-section and using immersion media.

**21&62:460:406. APPLIED GEOPHYSICS (3)**

Lec. 2 hrs., lab. 3 hrs. Prerequisites: 21:460:107, 114, and 115, 21&62:640:114 or 21&62:640:119, or permission of instructor.

Theory and practical application of geophysical prospecting methods, including reflection and refraction seismology, gravity, magnetics, and electrical methods. Field use of geophysical equipment and survey design.

**21&62:460:414. ADVANCED READINGS IN GEOLOGY (2)**

Open only to majors in their senior year. Prerequisite: Permission of instructor.

Students prepare, present, and participate in critical discussion of selected topics in geology.

**21&62:460:415,416. GEOLOGIC PROBLEMS (BA,BA)**

Hours to be arranged.

Special problems involving field, laboratory, and library work; presentation of written report.

**21&62:460:427. HYDROGEOLOGY (3)**

Lec. 2 hrs., lab. 3 hrs. Prerequisites: 21&62:460:322 and 21&62:640:114 or 119, or permission of instructor.

Geologic factors influencing the occurrence and distribution of surface and ground water and its effects on man; principles of hydrology; water-systems analysis and planning; water quality and pollution; exploration and development of water resources; field studies in New Jersey.

**21&62:460:485,486. SEMINAR IN GEOLOGY (1,1)**

Inquiry into selected topics in geology; qualified students should consult with their advisers.

**Course (Meteorology 670)****21&62:670:303. METEOROLOGY (3)**

Introduction to weather elements and atmospheric systems, forecasting, solar radiation, atmospheric optics, air pollution, biometeorology, and climatology.

**GEOSCIENCE ENGINEERING 465**

A major in Geoscience Engineering is offered at NCAS; leads to a B.S.E. degree.

**Major Requirements**

The major in Geoscience Engineering is an interdisciplinary, interdepartmental, and intercollegiate major between the Department of Geological Sciences and the Department of Civil and Environmental Engineering at NJIT. The goal of the program is to train students to combine evaluative and remedial capabilities in one degree. The program is rigorous and designed to prepare graduates for technical and management positions in industry or to continue their education in graduate studies.

The program is designed to lead to certification as a professional engineer (PE).

**First Year****Fall Term**

21&62:160:113	General Chemistry Laboratory I (1)
21&62:160:115	General Chemistry I (3)
21&62:198:101	Computers and Programming I (3)
21&62:350:101	English Composition I (3)

21&62:640:135	Calculus I (3)
21&62:750:205	Introductory Physics Laboratory I (1)
21&62:750:213	Elements of Physics I (3)
FED 101	Fundamentals of Engineering (2)

**Spring Term**

21&62:160:114	General Chemistry Laboratory II (1)
21&62:160:116	General Chemistry II (3)
21&62:350:102	English Composition II (3)
21&62:640:136	Calculus II (3)
21&62:750:206	Introductory Physics Laboratory II (1)
21&62:750:214	Elements of Physics II (3)
NCAS	fine arts elective (3)

**Sophomore Year****Fall Term**

21&62:460:103	Planet Earth (3)
21&62:460:104	Planet Earth Laboratory (1)
21&62:640:236	Calculus IV (3)
21&62:640:327	Probability and Statistics (3)
Mech 235	Statics (3)
NCAS	economics elective (3)

**Spring Term**

21&62:640:314	Differential Equations (3)
Chem 365	Environmental Organic Chemistry (3)
Mech 236	Dynamics (2)
Mech 237	Strength of Materials (3)
Mech 237A	Strength of Materials Laboratory (1)
NCAS	social science elective (3)
It is strongly recommended that students receive forty hours of OSHA training during the summer.	

**Junior Year****Fall Term**

21&62:460:311	Geologic Field Problems (3)
21&62:460:321	Mineralogy (4)
21&62:460:406	Applied Geophysics (3)
CE 200B	Surveying Laboratory (1)
CE 320	Fluid Mechanics (4)
NCAS	history elective (3)

**Spring Term**

21&62:460:320	Structural Geology (4)
21&62:460:427	Hydrogeology (3)
CE 321	Water Resources Engineering (3)
CE 341	Soil Mechanics (3)
CE 341A	Soil Mechanics Laboratory (1)
NCAS	history elective (3)

**Senior Year****Fall Term**

21&62:460:309	Geomorphology (3)
CE 406	Remote Sensing (3)
CE 494	Geological/Environmental Engineering Design I (3)
NCAS	literature elective (3)
	technical elective (3) (see below)

**Spring Term**

21&62:750:315	Thermodynamics (3)
CE 495	Geological/Environmental Engineering Design II (3)
NCAS	Interdisciplinary (3)
NCAS	literature elective (3)
	technical elective (3) (see below)



It is recommended that students take 21&62:460:314 Stratigraphy and 21&62:460:322 Petrology, although any from the below list will fulfill the requirement:

**Technical Electives:**

21&62:460:314	Stratigraphy (4)
21&62:460:322	Petrology (3)
21&62:460:401	Introduction to Geochemistry (3)
21&62:460:403	Optical Mineralogy (3)
CE 322	Hydraulic Engineering (3)
CE 332	Structures I (3)
CE 443	Foundation Design (3)
CE 545	Rock Mechanics I (3)
EE 405	Electrical Engineering Principles (3)
ENE/EvSc 610	Hazardous Substance Procedures (3)
SET 420	Land Information Systems (3)

## GERMAN 470

**Department of Classical and Modern Languages and Literatures**  
Conklin Hall (973/353-5498)

The German major and minor are offered at NCAS.

The department offers major programs in ancient Mediterranean civilizations (Classics 190, Greek 490, Hebraic Studies 500, Latin 580), French 420, German 470, Italian 560, Slavic 860, and Spanish 940. Students majoring in one language area may concurrently major or minor in another language area. The department also participates in an interdisciplinary major, a multi-disciplinary minor in International Affairs, the Rutgers Study Abroad Program, and offers courses in Portuguese.

### Major Requirements

The requirements for a major in German are the following:

1. 30 credits in German language and literature, which may include the intermediate courses 21:470:131,132 Intermediate German (or equivalent preparation as demonstrated by proficiency examination). Any of the German language and literature courses numbered 200 or higher may be taken to satisfy this requirement, with the exception of German literature in English translation. Prerequisite for advanced literature courses is 21:470:205,206 Introduction to German Literature.
2. 9 credits in other courses within the department, at least three of which must be in literature in the original language or in translation.
3. 6 credits from one or more of the following as approved by an adviser: English literature courses numbered higher than 215,216, philosophy, music history, art history.

### Minor Requirements

A minor in German requires 18 credits in German language and literature, which may include the intermediate courses 21:470:131,132 Intermediate German (or equivalent preparation as demonstrated by proficiency examination). Any of the German language and literature courses numbered 200 or higher may be taken to satisfy this requirement, with the exception of German literature in English translation.

The Department of Classical and Modern Languages and Literatures also offers minors in ancient Mediterranean civilizations, French, Italian, Slavic, and Spanish. Students may pursue one or more minor concentrations.

## Courses

### 21:470:101-102. ELEMENTARY GERMAN (3,3)

*Intended for students with little or no previous knowledge of German. Both terms must be completed to receive credit.*

Training in pronunciation and grammar, easy composition, and reading of simple prose. A minimum total of ten hours of language laboratory work per term is required in NCAS elementary language courses.

### 21:470:125-126. SCIENTIFIC GERMAN (3,3)

*Prerequisite: 21:470:102 or equivalent.*

Review and drill as in 21:470:131,132; reading and vocabulary work is chosen in accordance with the needs of students in the natural sciences.

### 21:470:131,132. INTERMEDIATE GERMAN (3,3)

*Prerequisite: 21:470:102 or equivalent as determined by a placement examination.*  
Review of grammar, readings in literature, and other cultural areas.

### 21:470:133,134. GERMAN FOR BUSINESS AND INDUSTRY (3,3)

*Prerequisite: 21:470:102 or equivalent.*

Introduction to practical German business terminology and phraseology pertinent to commercial correspondence, trade, banking, production, marketing, and management. Cultural differences discussed.

### 21:470:203,204. CONVERSATION AND COMPOSITION (3,3)

*Prerequisite: Permission of instructor.*

Intensive practice in oral and written use of German.

### 21:470:205,206. INTRODUCTION TO GERMAN LITERATURE (3,3)

*Prerequisite: 21:470:132 or equivalent. 21:470:205,206 are prerequisites for advanced courses in German literature.*

Readings in German literature selected to illustrate various literary forms and periods.

### 21:470:301. ADVANCED GRAMMAR AND COMPOSITION (3)

*Recommended for German majors and students planning to teach German.*

Advanced grammar review, composition, diction, special problems as required.

### 21:470:302. ADVANCED CONVERSATION AND COMPOSITION (3)

*Prerequisite: 21:470:301 or permission of instructor. Recommended for German majors and students planning to teach German.*

Critical literary discussion and composition in German.

### 21:470:303. GERMAN DRAMA OF THE NINETEENTH CENTURY (3)

Study of leading dramatists from romanticism to naturalism, with discussion of representative plays; readings include Tieck, Kleist, Grillparzer, O. Ludwig, Hebbel, and Hauptmann.

### 21:470:304. GERMAN DRAMA SINCE 1890 (3)

Representative modern plays from the neoromanticism of the Viennese theater, the expressionist stage, and the "epic" and absurd theater; readings emphasize Hofmannsthal, Kaiser, Wedekind, Brecht, Dürrenmatt, Frisch, and Weiss.

### 21:470:307. THE GERMAN NOVEL TO 1890 (3)

Critical reading of representative novels by Goethe, K.P. Moritz, Keller, Stifter, and Raabe.

### 21:470:308. THE GERMAN NOVEL SINCE 1890 (3)

Critical reading of representative novels with special attention to the work of Fontane, T. Mann, Kafka, Döblin, Musil, and Broch.

### 21:470:327. GERMANIC MYTHOLOGY AND FOLKLORE (3)

Major pre-Christian myths and legends of the Germanic peoples as exemplified primarily in the *Eddas* and the Icelandic sagas; introduces the cultural scene of the Viking Age in northern Europe.

### 21:470:336. GERMAN LYRIC POETRY (3)

Reading and critical analysis of the works of major German poets from Klopstock to Rilke and Benn; history and interpretation of the changing modes in lyric poetry in Germany.

**21:470:337. GERMAN CIVILIZATION (3)**

The relationships between German society, literature, art, and music in selected historical periods.

**21:470:353,354. INDIVIDUAL STUDY IN GERMAN (3,3)**

*Prerequisite: Permission of department chairperson or instructor.*  
Individual study or research in German language or literature.

**21:470:355. LESSING AND THE AGE OF REASON (3)**

The chief tendencies of the Enlightenment in Germany with special emphasis on the unique contributions of Lessing.

**21:470:356. HERDER, GOETHE, SCHILLER (3)**

The revolt against rationalism and the development of German classicism.

**21:470:367,368. GERMAN LITERATURE IN ENGLISH TRANSLATION (3,3)**

*Open to nonmajors. Prerequisite: 21&62:350:102.*  
Literary examination of representative works of German literature with emphasis on the twentieth century; Goethe, Fontane, Mann, Kafka, Frisch, Böll, Grass, Brecht, Dürrenmatt, and Weiss.

**21:470:407. HISTORY OF THE GERMAN LANGUAGE (3)**

*Prerequisite: Two years of college German or equivalent.*  
Traces and explains the development of the German language from its origins (Proto-Indo-European and the Indo-European languages) through the period of its closest relationship to English (Proto-Germanic and Germanic languages) up to its emergence as a modern language (Old, Middle, New High German); treats linguistic phenomena, e.g., ablaut,umlaut, ersatzdehnung, and the sociopolitical, cultural, and technological forces that have left their imprint on the German vocabulary.

**21:470:477. GERMAN BAROQUE LITERATURE (3)**

Leading writers of the seventeenth century in Germany, seen against the background of their time; readings from Opitz, Dach, Fleming, Gryphius, Bidermann, Weckherlin, Grimmelshausen, and Hofmannswaldau.

**21:470:478. MEDIEVAL GERMAN LITERATURE (3)**

Major forms of medieval German literature as exemplified by the *Hildebrandslied*, *Nibelungenlied*, *Kudrun*, *Gregorius*, *Parzifal*, Gottfried's *Tristan*, and the songs of the Minnesänger.

**GREEK 490 (See Ancient Mediterranean Civilizations)****HEBRAIC STUDIES 500 (See Ancient Mediterranean Civilizations)****HISTORY (History 510, American History 512)**

*Department of History*  
*Conklin Hall (973/353-5410)*

The history major and minor are offered at NCAS and UC-N.

The major in history gives students a broad grasp of world history and the cultural backgrounds of many segments of contemporary society. Students learn methods of historical research and exposition that may be applied

not only by the professional historian but also by those interested in pursuing careers in government, law, the media, and other fields. Since many history majors decide to go on to graduate school, proficiency in at least one foreign language is useful for these students. The major is offered jointly by Rutgers and NJIT and draws on faculty and courses from both universities.

**Major Requirements**

All majors in history develop, with the assistance of a faculty member, a course of study that meets the needs of the student. The courses identified and the rationale for their selection must be intellectually coherent; course work outside the student's area of specialization must be included. A grade of C or higher is required for history courses credited toward the major. Each program requires the written approval of the adviser and the chairperson of the department. Each course of study must include 42 credits, distributed as follows:

1. 6 credits: 21&62:510:201,202 History of Western Civilization.
2. 24 credits in history, at least fifteen of these at the 300 level or above. Fifteen credits of these 24 in history should be in one field, either geographic or thematic. Nine credits should be in courses outside the field of concentration. Fields of concentration are defined as follows: The Americas; Europe; Asia and Africa; or a thematic approach outlined by the student and adviser.
3. 6 additional credits related to the course of study, as approved by the adviser. These credits may be in history or any of the following fields: anthropology, art, classics, economics, history of education, literature (English or a foreign language), music, philosophy, political science, psychology, sociology, or statistics.
4. 6 credits, including a 3-credit senior readings seminar, and a 3-credit senior research and writing seminar, culminating in a research paper.

Students considering the history major are encouraged to visit the department to discuss their interests and to obtain a copy of the department's student guide, *Majoring in History*, which outlines the major and its requirements in greater detail. Majors enrolled in University College-Newark should consult their advisers to obtain specific information about UC-N major requirements.

**Minor in History**

The following credits are required for the minor in history:

- 21&62:510:201,202 History of Western Civilization (3,3)  
Electives in history (15 credits)

**Minor in Asian Studies**

*Director: Odoric Wou*

For students planning careers in any field involving contact with Asian cultures, such as business, law, teaching, or social work, the Department of History offers an interdisciplinary minor in Asian Studies. Two areas of concentration are possible: Near and Middle Eastern Studies, and Far Eastern Studies. Students must write a substantial research paper in a course approved for the minor and complete the following credits:

1. 9 credits in history (concentration in Near and Middle Eastern history or Far Eastern history). \*
2. 6 credits in language (modern Arabic, Hebrew, or Chinese). †
3. 6 credits in humanities and social sciences. \*

## Teacher Certification

Students seeking teacher certification in social studies must complete the requirements for a major in the history department as well as satisfy other requirements for certification. For details regarding admission to the teacher education program and the requirements, students should consult both their department adviser and the chairperson of the education department.

## Education Courses

Students majoring in history may enroll in the following education courses for elective credit: 21&62:300:401 History of Education and 21&62:300:402 History of Education in the United States. For course descriptions, see the education section of this catalog.

## Courses (History 510)

**21&62:510:201,202. HISTORY OF WESTERN CIVILIZATION (3,3)**  
The main developments in history of ideas and institutions from earliest times to the present; consideration of historical material serves as a point of departure for discussion of present-day problems.

**21&62:510:207,208. HISTORY OF LATIN AMERICA (3,3)**  
Survey of the Indian and Iberian background of Latin America; conquest and colonization; cultural clash and fusion; institutions and economic activities of the colonial period; the wars of independence; political, economic, social, and cultural history and international relations of the Latin-American countries to the present.

**21&62:510:226,227. TOPICS IN HISTORY (1.5,1.5)**  
Mini courses run either twice a week for seven weeks or once a week for fourteen weeks; topics change from year to year; courses may not be used to fulfill any distribution requirement, but may be used as general credit for graduation; information about topics may be obtained from the department chairperson.

**21&62:510:235,236. THE ANCIENT WORLD (3,3)**  
Civilization of the ancient Near East and of the Mediterranean littoral from their emergence during the fourth millennium B.C. to the fall of the Roman Empire in the West; political, social, and economic life of the ancient peoples; the evolution of religions, law, science, and the arts.

**21&62:510:249. AN INTRODUCTION TO CHINA (3)**  
Development of Chinese civilization from the past to the present, with reference to geographical implication, government structure, social institutions, economy, literary development, and Asian-American heritage.

**21&62:510:263,264. HISTORY OF AFRICA (3,3)**  
Political, religious, economic, and social development of the peoples of Africa south of the Sahara from about 500 A.D. to the present.

\* A list of courses approved for each category may be obtained in the Department of History. Students may substitute other courses with permission of Professor Wou.

† Students proficient in any Asian language may substitute other courses for the language requirement.

**21&62:510:287,288. HISTORY OF ISLAMIC CIVILIZATION (3,3)**  
The history, culture, and institutions of the Islamic world, from the age of the prophet Muhammad to the present. *First term:* evolution of classical Islamic civilization in its Near and Middle Eastern heartland. *Second term:* the Ottoman, Safavid, and Mughal empires; Islam in central, east, and southeast Asia; traditional Islamic society, and the problems of colonialism, imperialism, and modernization.

**21&62:510:297,298. FAR EASTERN HISTORY (3,3)**  
Major developments in Far Eastern history, particularly in China and Japan, from early times to the present; cultural, economic, and political aspects and contemporary problems.

**21&62:510:317. HISTORY OF THE CARIBBEAN (3)**  
Caribbean history from the colonial period to the present; the development of a sugar economy; the competition among foreign powers for control; nineteenth-century struggles for independence; contemporary social upheavals.

**21&62:510:319,320. THE CLASSICAL WORLD: GREECE AND ROME (3,3)**  
The political, intellectual, and cultural development of the Greek, Hellenistic, and Roman civilizations.

**21&62:510:321. MILITARY HISTORY OF THE WESTERN WORLD (3)**  
History of warfare in the western world from the Middle Ages to the twentieth century. Interrelationships between technological, economic, political, and social developments. A society's warfare as a reflection of that society.

**21&62:510:323,324. HISTORY OF PUERTO RICO (3,3)**  
History of Puerto Rico from the Pre-Columbian period to the nineteenth century; Taino, Spanish, and black civilizations and their significance in the evolution of Puerto Rico's national consciousness.

**21&62:510:325. HISTORY OF MEXICO AND CENTRAL AMERICA (3)**  
Historical development of Mexico and Central America from the pre-Columbian civilizations to the present. Contemporary issues affecting the region.

**21&62:510:327,328. CIVILIZATION OF THE MIDDLE AGES (3,3)**  
Western Europe from the Barbarian invasions to the close of the thirteenth century; the structure of society and its economic organization; readings provide a basis for the study of feudalism, agrarian life, and the rise of the towns; religious developments and conflicts, church-state relationships, the Crusades; the rise of the feudal monarchies; cultural achievements.

**21&62:510:329,330. CIVILIZATION OF MEDIEVAL EASTERN EUROPE AND THE NEAR EAST (3,3)**  
History and civilization of the Later East Roman/Byzantine Empire; the Islamic lands of the Eastern Mediterranean and Slavic Eastern Europe in the Middle Ages.

**21&62:510:331,332. BRITISH HISTORY (3,3)**  
British history from the Roman occupation to the present; emphasis on the interrelationship between constitutional and social developments. *First term:* medieval England and the Tudor-Stuart period. *Second term:* changes in politics and society resulting from the industrial revolution.

**21&62:510:333. HISTORY OF IMPERIALISM (3)**  
The historical background of imperialism; the expansion of empires; the effects on the relations among the great powers; the development in the colonial territories since World War II.

**21&62:510:334. TWENTIETH-CENTURY FASCISM (3)**  
The roots of fascism and its triumph in Germany and Central Europe in the twentieth century; the rise of fascism viewed against a background of declining liberalism, the growth of socialism, and other nonliberal political movements; the role and nature of fascism and neo-fascism since World War II.



**21&62:510:335,336. HISTORY OF SOCIALISM AND COMMUNISM (3,3)**

Socialist and communist movements, with emphasis on their origins, development, and major social-political implications in the nineteenth and twentieth centuries. *First term:* the Industrial Revolution; the emergence of an urban proletariat; the origins of socialist movements, their development and role within individual countries, and their attempt to forge international unity before World War I. *Second term:* the impact of World War I and the Russian Revolution on socialist movements; the relations between socialist and communist parties during the interwar period; the expansion of socialist and communist influence after World War II.

**21&62:510:337. THE HISTORY OF IRAN (3)**

History of Iran from ancient times to the present; the forces that have shaped modern Iran.

**21&62:510:338. THE OTTOMAN EMPIRE (3)**

History of the Ottoman state from its origins as a Ghazi state (thirteenth century) to its collapse in the twentieth century; the Ottoman impact, politically and culturally, on the peoples of Eastern Europe.

**21&62:510:340. WOMEN IN EUROPEAN HISTORY (3)**

Changes in women's economic, social, and legal position from classical times to the present; women and the family; women and the Industrial Revolution; witchcraft; women in politics, war, and revolution; women under socialism and fascism; women and sexuality; the development of the modern feminist movement.

**21&62:510:341,342. THE AGE OF REVOLUTION, 1789–1849 (3,3)**

The great transformation wrought by the French and Industrial Revolutions; the emergence of modern concepts of democracy, popular sovereignty, nationalism, liberalism, republicanism, and socialism; advent of industrial societies in England and on the continent, and the creation of a revolutionary tradition throughout Europe.

**21&62:510:343,344. RENAISSANCE AND REFORMATION (3,3)**

Features of European civilization in the fifteenth and sixteenth centuries, and of representative modes of feeling and thought. *First term:* political and cultural developments in Italy. *Second term:* the great religious revolt of the sixteenth century in northern Europe and its political and cultural repercussions.

**21&62:510:346. MEDIEVAL LEGAL HISTORY (3)**

Legal systems of continental Europe; the barbarian law codes; church penitentials and canon law; medieval Roman law; feudal and manorial customs; mercantile law; commercial custom; urban and royal law.

**21&62:510:349,350. MODERN EUROPEAN DIPLOMATIC HISTORY (3,3)**

The development of the diplomatic institutions, practices, and interests of the European states; relates diplomacy to internal developments in the various states from 1815 to modern times.

**21&62:510:351,352. HISTORY OF FRANCE (3,3)**

*First term:* survey of French history from the late middle ages through the French Revolution. *Second term:* French history from 1815 to the present. Emphasizes ideas, politics, culture, and the development of national cohesion and identity.

**21&62:510:353,354. MODERN CHINA (3,3)**

Evolution of the Chinese nation from the Opium War to the establishment of the People's Republic; problems arising out of rebellion, reform, and revolution discussed in connection with modernization and acculturation.

**21&62:510:355. TRADITIONAL CHINA: INSTITUTIONS AND SOCIETY (3)**

Chinese history from the Shang to the Ming dynasties (1766 B.C.–1643 A.D.); patterns of social change and social mobility; feudalism; dynastic cycles; modernization; Oriental Despotism.

**21&62:510:356. HISTORY OF THE PEOPLE'S REPUBLIC OF CHINA (3)**

The revolutionary experience of the Chinese people; the efforts of the Chinese communists to modernize the nation; the processes and problems of adapting to a communist system.

**21&62:510:357,358. MODERN EUROPE: WAR AND REVOLUTION (3,3)**

Significant political, economic, social, and diplomatic developments during the past century. *First term:* industrialization, imperialism, and international rivalries before 1914. *Second term:* readjustment efforts after 1918; the rise of totalitarianism, World War II; the Cold War.

**21&62:510:361. THE NEAR AND MIDDLE EAST (3)**

Introduction to the modern Near and Middle East. Review of the formation of classical Islamic civilization in the region. Political, economic, social, and ethnic problems resulting from Western influences and the dismemberment of the Ottoman empire. Modern Iranian development and the creation of Israel.

**21&62:510:364. CONTEMPORARY ISSUES IN PUERTO RICAN HISTORY (3)**

*Prerequisite:* 21&62:510:324.

Selected topics in contemporary Puerto Rican history, covering both the island community and the Puerto Rican community in the United States since 1945. Emphasis on the modernization of the economy, political evolution of self-government, and social problems that brought about the exodus of nearly one-third of Puerto Rico's population.

**21&62:510:366. HISTORY OF POLAND (3)**

History, social concerns, and culture of Poland and the Polish people from the time of their conversion to Christianity and early kings to the present.

**21&62:510:367,368. HISTORY OF RUSSIA AND THE SOVIET UNION (3,3)**

*First term:* Russian politics and civilization from the founding of Kiev to 1864. *Second term:* the history of Russia from 1865 to the present time, with emphasis on Soviet affairs.

**21&62:510:369. MODERN EASTERN EUROPE (3)**

Political, social, and cultural developments in Eastern Europe in the seventeenth, eighteenth, and nineteenth centuries; twentieth century, World War I, the revolutions, the successor states, and their relations with the USSR.

**21&62:510:370. HISTORY OF MODERN UKRAINE (3)**

Ukrainian history from the sixteenth century to the present. Emergence of Cossacks, the religious controversy, the rise and fall of the Cossack State, and the national revival in the nineteenth century.

**62:510:371,372. INTELLECTUAL AND CULTURAL HISTORY OF MODERN EUROPE I, II (3,3)**

A study of the major currents of thought—political, religious, social, economic—from the Renaissance to the present.

**21&62:510:373. THE ENGLISH NOVEL IN HISTORY (3)**

The novel as a reflection of English society during the last 150 years; emphasizes the historical development of Great Britain.

**21&62:510:375. HISTORY OF SPAIN (3)**

The history of Spain from its unification in 1469 to the present. Emphasizes politics, the role of the church, the promotion of national and regional identity, and problems of economic development and modernization.



**21&62:510:377. PORTUGAL AND ITS EMPIRE (3)**

The history of Portugal and its overseas empire from the fourteenth century to the present, examining the country's politics, economics, and culture, as well as its global expansion and relations with colonies, particularly Brazil.

**21&62:510:379. COLONIALISM AND DECOLONIZATION (3)**

The final century of colonialism, focusing on imperialist thought and justifications for empire, mutual perceptions of colonizers and colonized, and the growth of anti-imperialism.

**21&62:510:380. CULTURE AND MEDIA IN TWENTIETH-CENTURY EUROPE (3)**

Examines major cultural movements and ideas, and reactions to new art forms and mass media in twentieth-century Europe. Topics include political uses of radio and cinema, reactions to American culture, debates over "high" and "low" culture, and issues in media policy.

**21&62:510:385,386. A HISTORY OF SOUTHERN AFRICA (3,3)**

History of southern Africa from 1000 A.D. to the present; precolonial African societies; European colonization; European impact; industrial development; the Zulu and Boer Wars; the evolution of apartheid; the African nationalist movements.

**21&62:510:391,392. THE HISTORY OF GERMANY (3,3)**

Germany from the eighteenth century to the present. *First term:* the rise of Prussia, the impact of the French Revolution and the Empire, the growth of nationalism and liberalism, the Revolution of 1848, and unification. *Second term:* internal developments, foreign policy, and intellectual movements after 1871; examines Germany in the First World War, the Weimar Republic, the rise of Nazism, the drive for European domination in the Second World War, and the postwar era.

**21&62:510:394. THE PEOPLES AND CULTURES OF CENTRAL ASIA (3)**

Introduction to the history and cultures of the Iranian, Turkic, Mongolian, and Tungus-Manchu peoples of the Eurasian steppes and inner Asian borderlands of China from earliest times to the seventeenth century; the cultural significance of this region as the recipient of Chinese, Indian, Muslim, and Eastern Christian cultural and religious influences.

**21&62:510:399. TUDOR-STUART ENGLAND (3)**

Selected topics in British history from the accession of Henry VII through the Revolution of 1688; cultural, economic, political, and social issues; developments in the transition from medieval to early modern England; background of the empire.

**21&62:510:401. TOPICS IN EUROPEAN HISTORY (3)**

*Prerequisites:* 21&62:510:201,202 or permission of instructor.

**21&62:510:403. TOPICS IN SOCIAL HISTORY (3)**

*Prerequisites:* 21&62:510:201,202 or permission of instructor.

**21&62:510:404. TOPICS IN INTELLECTUAL HISTORY (3)**

*Prerequisites:* 21&62:510:201,202 or permission of instructor.

**21&62:510:431,432. TOPICS IN AFRICA IN THE NINETEENTH AND TWENTIETH CENTURIES (3,3)**

*Prerequisites:* 21&62:510:201,202 or 21&62:510:263,264, or permission of instructor.

**21&62:510:433. TOPICS IN ISLAMIC HISTORY (3)**

*Prerequisites:* 21&62:510:201,202 or permission of instructor.

**21&62:510:435. TOPICS IN MEDIEVAL AND EARLY MODERN HISTORY (3)**

*Prerequisites:* 21&62:510:201,202 or permission of instructor.

**21&62:510:441,442. TOPICS IN LATIN AMERICAN AND CARIBBEAN HISTORY (3,3)**

*Prerequisites:* 21&62:510:201,202 or permission of instructor.

**21&62:510:449,450. TOPICS IN ASIAN, CHINESE, AND FAR EASTERN HISTORY (3,3)**

*Prerequisites:* 21&62:510:201,202 or permission of instructor.

**21&62:510:451,452. TOPICS IN THE HISTORY OF EASTERN EUROPE AND THE SOVIET UNION (3,3)**

*Prerequisites:* 21&62:510:201,202 or permission of instructor.

**21&62:510:458. TOPICS IN WOMEN'S HISTORY (3)**

*Prerequisites:* 21&62:510:201,202 or permission of instructor.

**21&62:510:461. TOPICS IN COMPARATIVE HISTORY (3)**

*Prerequisites:* 21&62:510:201,202 or permission of instructor.

**21&62:510:479,480. READINGS IN NON-AMERICAN HISTORY (3,3)**

*Prerequisites:* Written permission of department chairperson and instructor.

Designed for the history major who desires to undertake extensive reading in a particular historical area, selected in close consultation with a member of the department. Limited to students whose grade-point average within the department is 2.0 or higher. Only one reading course may be taken during a term, and no more than 9 credits in reading courses may be applied towards the history major.

**21&62:510:489. SENIOR SEMINAR—READINGS (3)****21&62:510:490. SENIOR SEMINAR—RESEARCH (3)****21&62:510:491,492. HONORS PROGRAM IN NON-AMERICAN HISTORY (3,3)**

Research and writing for candidates for honors in history.

**62:510:497. HONORS PROJECT—HISTORY (3)**

*Open only to honor students. Prerequisite:* Permission of program adviser. An individual research project.

**21&62:510:499. INDIVIDUAL STUDY IN HISTORICAL RESEARCH, NON-AMERICAN (BA)**

*Prerequisites:* Permission of department chairperson and instructor. Restricted to history majors in their senior year.

Introductory historical research on a more systematic level than is normally possible in lecture courses.

**Courses (American History 512)****21&62:512:121,122. COMMUNITY AND CHARACTER IN AMERICAN HISTORY (3,3)**

Introduction to the study of American culture. The relationship of the individual to the community. The development of individualism, the tensions between the individual and the community, and the creation of diverse communities divided by gender, race, and class.

**21&62:512:201,202. DEVELOPMENT OF THE UNITED STATES (3,3)**

Political, economic, and social phases of American history that have influenced or determined the development of the U.S. from 1607 to the present.

**21&62:512:303. TOPICS IN THE HISTORY OF NEWARK (3)**

Major economic, social, and political developments in Newark from 1830 to the present; focus on late nineteenth- and twentieth-century trends in demography, housing, and community development.

**21&62:512:309,310. A HISTORY OF AMERICAN THOUGHT (3,3)**

Origins and developments in American thinking on social, economic, and political questions and in the fields of the arts and sciences, religion, and philosophy.

**21&62:512:311. COLONIAL AMERICA (3)**

The colonial origins of the U.S. and divergence from England; relations with the Indians; slavery; Puritanism and the waning and revival of religion; family and gender roles; role of the colonies in the British empire; and the transformation of colonial political culture, leading to the Revolution.

**21&62:512:315. U.S. HISTORY IN FICTION AND FACT (3)**

Explores critical events and problems in U.S. history by juxtaposing closely related works of history, biography, memoir, and fiction. Topics include Lincoln and Gettysburg; the legacy of slavery and reconstruction; Huey Long and the Great Depression.

**21&62:512:318. LABOR HISTORY (3)**

The impact of industrialization on the work force in the U.S.; examines economic pressures; technological developments; immigration patterns; entrepreneurial policies; ethnic and black subcultures; the emergence of urban institutions as they relate to the working class and class consciousness.

**21&62:512:330. HISTORY OF AMERICAN IMMIGRATION (3)**

The central role of immigration in American history; English migration in the seventeenth century, involuntary African migration in the eighteenth century, Irish migration in the mid-nineteenth century, southern and eastern European migrations, Asian migration, and the more recent Mexican, Cuban, Puerto Rican, and West Indian migrations; comparisons and contrasts of experiences; the tensions of cultural assimilation and separatism and the concept of American national identity.

**21&62:512:333,334. AFRO-AMERICAN HISTORY (3,3)**

The black American's role in the U.S. from the seventeenth century to the present.

**21&62:512:337. HISTORY OF THE FAMILY IN THE UNITED STATES (3)**

The changing nature of the American family; the Puritan family; the Victorian family and the cult of true womanhood; the black family; childhood, marriage, and old age.

**21&62:512:343. THE CREATION OF THE AMERICAN REPUBLIC (3)**

The history of the U.S. from 1776 to 1820. The Revolutionary War, the writing of the Constitution, establishment of political parties, and contrasting philosophies of Jefferson and Hamilton. Emphasis on changes in religion, gender roles, race relations, social structure, and political thought.

**21&62:512:344. THE DEMOCRATIC AGE IN AMERICAN HISTORY: 1820–1880 (3)**

Development of democracy in America and its trial in the Civil War. Jacksonian democracy, revivalism and reform, slavery, abolitionism, the cult of true womanhood, and the growth of sectionalism. The origins, course, and consequences of the Civil War through the end of Reconstruction.

**21&62:512:349. ANTEBELLUM REFORM MOVEMENTS (3)**

Explores the origins, evolution, and impact of evangelical, utopian, and philanthropic movements committed to the reform of American culture and institutions during the first half of the nineteenth century.

**21&62:512:357,358. AMERICAN ECONOMIC AND BUSINESS HISTORY (3,3)**

Survey of the economic development of the U.S. from colonial times to the present; the nation's westward march; relationships between the American economy and the economies of other nations; the changing emphasis and growing complexity of American economic life.

**21&62:512:361,362. URBAN HISTORY OF THE UNITED STATES (3,3)**

The history of the American city and its role in American social, economic, and political development.

**21&62:512:365,366. AMERICAN LEGAL HISTORY (3,3)**

The interaction between political and economic forces and the role of law in American history; readings from the fields of history, political science, and Constitutional development.

**21&62:512:367. THE AGE OF THE CORPORATION: 1880–1920 (3)**

Survey of American history from 1880–1920, focusing on economic and societal transformation and the Populist and Progressive response. Industrialization, the rise of modern corporate power, and social and intellectual currents.

**21&62:512:368. MODERN AMERICA (3)**

Survey of the history of the United States between 1890 and 1945, with emphasis on immigration, migration, and battles waged over labor, leisure, and definitions of American identity.

**21&62:512:369. AMERICA IN WORLD WAR II AND THE POSTWAR PERIOD (3)**

The relationship between domestic politics, economic developments, and social change in a wartime situation that began with World War II and culminated with the Korean War; the international and domestic factors related to the rise of the cold war.

**21&62:512:371. CONTEMPORARY AMERICA (3)**

Survey of the history of the United States from 1945 to the present, with emphasis on corporate liberalism, McCarthyism, the rise of suburbia, the Vietnam War, the counterculture of the 1960s, and the "Reagan Revolution."

**21&62:512:373,374. HISTORY OF WOMEN IN THE UNITED STATES (3,3)**

The role of women in American life from colonial times to the present; the nature of men and women and their relations; women's roles in social change; the organizational mechanisms by which their influence has been exerted.

**21&62:512:377. RACE RELATIONS IN TWENTIETH-CENTURY AMERICA (3)**

Explores the busy intersections of black and white in the U.S. since Reconstruction, and the lines of social class, culture, gender, and history that run through them. Events and phenomena covered include Reconstruction, politics and economics in the post-Civil War South, segregation and disfranchisement, lynching, the Atlanta compromise, the great migration, World Wars I and II, the Harlem renaissance, the Depression, and the civil rights movement.

**21&62:512:379. U.S. HISTORY IN THE COURTROOM (3)**

Explores modern U.S. history through the lens of a number of celebrated court cases and the controversies surrounding them.

**21&62:512:383. UNITED STATES FOREIGN POLICY IN THE ERA OF THE COLD WAR (3)**

Selected topics, such as the origins and nature of the cold war, the U.S. and the Arab-Israeli dispute, U.S. policy in Africa, Asia, and Latin America since 1945, and the Indo-China War.

**21&62:512:385,386. HISTORY OF AMERICAN POLITICS (3,3)**

The formation and development of politics in the U.S.; function and history of political parties in America; changes in elections, campaigns, voting behavior, and the American party system; the rise of bossism and machine politics; periodic attempts to reform American politics.

**21&62:512:389. THE 1960S IN AMERICA (3)**

Survey of the issues and events of the 1960s, including the civil rights movement, the Vietnam War, the antiwar movement, the new left, the youth counterculture, the women's rights movement, and the gay- and lesbian-rights movement.

**21&62:512:395,396. HISTORY OF SCIENCE (3,3)**

History of science in the U.S. from colonial times to the mid-twentieth century.

**21&62:512:397,398. AMERICAN FOREIGN AFFAIRS (3,3)**

Analysis of American foreign policy from the colonial period to the present; emphasis on power politics, geopolitics, world trade, public opinion, and the interrelation between domestic and foreign affairs.

**21&62:512:402. TOPICS IN AMERICAN INTELLECTUAL HISTORY (3)**

*Prerequisites: 21&62:512:201,202 or permission of instructor.*

**21&62:512:403. TOPICS IN AMERICAN POLITICAL HISTORY (3)**

*Prerequisites: 21&62:512:201,202 or permission of instructor.*

**21&62:512:404. TOPICS IN AMERICAN BUSINESS AND ECONOMIC HISTORY (3)**

*Prerequisites: 21&62:512:201,202 or permission of instructor.*

**21&62:512:405. TOPICS IN THE HISTORY OF SCIENCE (3)**

*Prerequisites: 21&62:512:201,202 or permission of instructor.*

**21&62:512:408. TOPICS IN AMERICAN SOCIAL AND CULTURAL HISTORY (3)**

*Prerequisites: 21&62:512:201,202 or permission of instructor.*

**21&62:512:410. TOPICS IN THE HISTORY OF AMERICAN FOREIGN POLICY AND DIPLOMACY (3)**

*Prerequisites: 21&62:512:201,202 or permission of instructor.*

**21&62:512:438. INTERNSHIP: ADMINISTRATION OF HISTORICAL MANUSCRIPTS (3)**

*Prerequisite: Permission of department chairperson.*

Basic principles and techniques of modern archives administration with emphasis on accession, appraisal, arrangement, description, and conservation. The practicum for this course may entail the full processing of a historical manuscript collection; requires approximately seventy hours.

**21&62:512:452. TOPICS IN LEGAL HISTORY (3)**

*Prerequisites: 21&62:512:201,202 or permission of instructor.*

**21&62:512:462. TOPICS IN RECENT AMERICAN HISTORY (3)**

*Prerequisites: 21&62:512:201,202 or permission of instructor.*

**21&62:512:472. TOPICS IN AFRO-AMERICAN HISTORY (3)**

*Prerequisites: 21&62:512:201,202 or permission of instructor.*

**21&62:512:473. TOPICS IN WOMEN'S HISTORY (3)**

*Prerequisites: 21&62:512:201,202 or permission of instructor.*

**21&62:512:499. READINGS IN AMERICAN HISTORY (3)**

*Prerequisites: Written permission of department chairperson and instructor.*

Designed for the history major who desires to undertake extensive reading in a particular historical area, selected in close consultation with a member of the department. Limited to students whose grade-point average within the department is 2.0 or higher. Only one reading course may be taken during a term, and no more than 9 credits in reading courses may be applied towards the history major.

**History Courses (NJIT)****Hist 334. ENVIRONMENTAL HISTORY OF NORTH AMERICA (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

The history of interactions between humans and their natural environment on the North American continent. Considers perceptions of, use of, and alteration of the environment. Traces the cultural, intellectual, economic, political, and technological transformations from early colonial times to the late twentieth century. Addresses the diverse environmentalisms that have emerged the last several decades.

**Hist 341. THE AMERICAN EXPERIENCE (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

American history from the colonies to the twentieth century, with concentration on several selected themes basic to an understanding of the changing cultural patterns and social values of American civilization.

**Hist 343. AFRICAN-AMERICAN HISTORY I (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Introduction to African-American history from precolonial West Africa to emancipation in the midnineteenth century. Topics include the African slave trade, the economics and politics of slavery, gender and culture in the slave community, and the free black experience in both the north and south.

**Hist 344. AFRICAN-AMERICAN HISTORY II (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Introduction to African-American history from the midnineteenth century to the present. Covers race relations and the civil rights movement, as well as migration, black social and political thought, gender roles, and class formation.

**Hist 345. COMMUNICATION THROUGH THE AGES (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Modes of communication, ancient and modern, in their social and cultural context—from cave painting to computers. Topics include literacy and economic development in the West; the technological revolution in media beginning with Daguerre, Morse, and Bell; the institutional development of mass media and popular culture; and contemporary trends in world communication and interaction.

**Hist 351. ANCIENT GREECE AND THE PERSIAN EMPIRE (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

The political, institutional, and cultural developments of Ancient Greece and the Persian Empire from the Mycenaean period to the King's Peace (386 B.C.).

**Hist 352. THE HELLENISTIC STATES AND THE ROMAN REPUBLIC (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

The political and cultural developments of the Hellenistic states and their influence on the Republic of Rome to 30 B.C.

**Hist 359. HISTORY OF THE MIDDLE EAST I (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

The political, cultural, and institutional developments in the Middle East from the Parthians to the capture of Constantinople by the Ottoman Turks. Four periods will be analyzed: the Parthian, the Sassanid Persian, the Caliphate, and the Seljuk and Ottoman Turks.

**Hist 360. HISTORY OF THE MIDDLE EAST II (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

The political, cultural, and institutional developments in the Middle East from the capture of Constantinople by the Ottoman Turks to the impact of the Arab-Israeli conflict on the world today.

**Hist 361. THE FOUNDING OF THE AMERICAN NATION (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

North America in the colonial and revolutionary periods, with emphasis on patterns of cultural and institutional development from early settlement through the ratification of the Constitution.



**Hist 363. THE UNITED STATES AS A WORLD POWER (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

American domestic and foreign policy in the twentieth century. Topics include imperialism, the Progressive Era, the Depression, the New Deal, World Wars I and II, the Cold War, America and the world today.

**Hist 365. COMPARATIVE COLONIAL HISTORY (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Comparative analysis of the relationship between expanding Western nations and selected regions of Africa, Asia, and South America, from 1500 to 1970. Case study approach illuminates key historical processes, with emphasis on economic development and cultural change in colonial settings. Topics include European perceptions of culturally different peoples, race relations in colonial societies, forms of rebellion and resistance to European rule, nationalist movements.

**Hist 366. GENDER, RACE, AND IDENTITY IN AMERICAN HISTORY (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Surveys social construction of gender in American from the seventeenth century to the present. Examines changing gender roles and relations that have characterized and structured the historical experiences of different racial and ethnic groups. In a multicultural framework, covers impact that colonization, industrialization, slavery, immigration and migration, urbanization, war, and social movements have had on the ways that women and men think of themselves in terms of gender, as well as their respective roles in families and larger social networks.

**Hist 367. LEGAL HISTORY (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Examines the interaction of law and society and the role of law in political and cultural change. Regions, themes, and time periods covered vary and may include American Constitutional law, gender and law in American history, and comparative legal history.

**Hist 368. COMPARATIVE ECONOMIC HISTORY (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

A comparative analysis of the history of economic development, with particular attention to industrialization, shifting patterns of global trade, and changing labor markets. Topics include the Industrial Revolution, the rise of the world economy, the transformation of non-Western economies, labor migration, and newly industrializing countries.

**Hist 372. CONTEMPORARY EUROPE (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

European society in the twentieth century, Nationalism, imperialism, totalitarianism, movements toward European unity, and prominent cultural developments.

**Hist 374. MODERN RUSSIAN CIVILIZATION (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Russia under the last tsars, the 1917 upheavals, rise of the Soviet state to world power under Lenin, Stalin, and others, until the collapse of the communist dictatorship.

**Hist 377. CITIES IN HISTORY (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Examines social, cultural, and economic changes in urban areas. Regions and themes vary and may include urbanization in Europe, the rise of cities in Latin America, and urban change in contemporary America.

**Hist 379. HISTORY OF MEDICINE (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Focuses on the evolving institutions, values, concepts, and techniques through which doctors attempted to control the impact of disease and preserve the health of Americans, beginning with the shaman and colonial physician through post-World War II changes in the medical care system.

**Hist 382. WAR AND SOCIETY (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

The evolution of warfare and the impact of war on political, economic, cultural, and social institutions, including the two World Wars and post-1945 conflicts.

**Hist 383. THE MAKING OF MODERN THOUGHT (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

The formation of contemporary images of human nature since the midnineteenth century. Emphasis on Marx, Darwin, and Freud and their legacy to twentieth-century thought. Theories of the family, sexuality, and the changing role of women in society are explored.

**Hist 385. TECHNOLOGY AND SOCIETY IN EUROPEAN AND WORLD HISTORY (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Introduction to the social history of European and global technology from the Middle Ages to the second Industrial Revolution of the late nineteenth century. Emphasis on such themes as the process of technological innovation, the nature of technological systems, the diffusion of technology, the interaction of Western and non-Western technology, the changing relations of science and technology, and the role of technology in broader historical movements.

**Hist 386. TECHNOLOGY IN AMERICAN HISTORY (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Survey of the history of American technology emphasizing the social and economic environments of technological change. Topics include transfer of technology in building canals and cities, rise of the factory system, emergence of the American system of manufacture, and development of major technological systems such as the railroad, telegraph, electric light and power, and automobile production and use. Focus on the professionalization of engineering practice, the industrialization of invention, and the growing links between engineers and corporate capitalism in the twentieth century.

**Hist 388. BRITAIN IN THE TWENTIETH CENTURY (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Survey of British history from the death of Queen Victoria to 1964, with emphasis on the social and political transformation resulting from Britain's declining economy and world position. Topics include: the causes and impact of the two World Wars, the transition from liberal democracy to welfare state, the turn from Empire to Europe, social and economic trends, as well as foreign relations.

**Hist 390. HISTORICAL PROBLEMS OF THE TWENTIETH CENTURY THROUGH FILM (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Study of selected problems in the twentieth century using film as a "window into history." Such topics as the rise of Nazi Germany, America in the thirties, World War II and American society, the development of cities, and the emergence of the "Third World" will be considered. Only two topics will be selected for study in any one term. The material for the course will include documentary films, newsreels, TV news films, and theatrical feature films, as well as selected readings.



### **Hist 401,402. INDEPENDENT STUDIES IN HISTORY (3-0-3)**

*Prerequisites: Junior or senior standing; and before registering, permission from one of the following: Federated History Department chairperson, associate chairperson, history major adviser, history minor adviser.*

Pursuit of special interests in history not covered in a regular elective course. A history faculty member provides guidance and assigns readings and papers.

### **Hist 489H. SENIOR HISTORY HONORS SEMINAR:**

#### **READINGS (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Limited to senior history majors who are enrolled in the Albert Dorman Honors College or who receive permission from the undergraduate history adviser. Meets with 21&62:510:489, but includes more advanced readings.

### **Hist 490H. SENIOR HISTORY HONORS SEMINAR:**

#### **RESEARCH (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Limited to senior history majors who are enrolled in the Albert Dorman Honors College or who receive permission from the undergraduate history adviser. Meets with 21&62:510:490, but includes more rigorous research and writing requirements.

## **HONORS 525**

### **21:525:250,252,254. HONORS SEMINARS (3,3,3)**

*Open to Honors College students only by permission of the director. Students enrolled in the NCAS Honors College are required to take at least two of three special topic seminars.*

Provides instruction in specific topics and familiarizes students with the research and inquiry methods of the three broadly defined academic divisions. 21:525:250 emphasizes the sciences; 21:525:252, the humanities; and 21:525:254, the social sciences.

### **21:525:395-396. JUNIOR SCHOLARS INQUIRY METHODS (1,1)**

*Open to Honors College juniors only by permission of the director.*

Focuses on a different theme each year and gives students opportunities to work as teams and as independent researchers. Includes multimedia experimentation, as well as more traditional research methods.

### **21:525:497-498. SENIOR HONORS PROJECT (3,3)**

*Open to Honors College seniors only by permission of the director. Both terms must be completed to receive credit. The capstone of the Honors College requirements.*

Completed over the course of the entire senior year, the project may be focused on a student's major area of study or may give expression to a subject or activity outside the student's major. These projects are often of either publishable or of exhibition quality. Credit is given only upon completion of the project.

### **62:525:497-498. SENIOR HONORS PROJECT (3,3)**

*Open to UC-N Honors College seniors only by permission of the director.*

An inquiry-methods course. The first term of the course is theme-based and includes several speakers' presentations on the theme. Students then work collaboratively, with special attention to research methods. In the second term, students work independently on research projects and gain experience in traditional research methods, as well as multimedia techniques.

## **INTERNATIONAL AFFAIRS**

The minor in international affairs, an interdisciplinary program administered by the Department of Political Science and the Department of Classical and Modern Languages and Literatures, is offered at NCAS.

## **Minor Requirements**

The minor in international affairs requires 21 credits as follows:

1. Prerequisite:  
Foreign language: successful completion of the intermediate course 132 or its equivalent preparation, demonstrated through a proficiency examination.
2. Core Courses:
  - a. 21&62:220:335 International Economic Relations (3)  
or 21&62:790:317 International Political Economy (3)
  - b. 21&62:512:398 American Foreign Affairs (3)
  - c. 21&62:790:321 World Politics (3)
  - d. 6 credits in foreign literature at the 205,206 level.
3. Two additional courses at the 300 or 400 level, in one of the cooperating disciplines, selected in consultation with an adviser (6 credits).
4. The civilization course in the target foreign language area or study abroad with an approved college program is strongly recommended.

*Note:* The student majoring in one of the cooperating disciplines may count no more than 6 credits of this minor toward the major.

## **ITALIAN 560**

*Department of Classical and Modern Languages and Literatures  
Conklin Hall (973/353-5498)*

The Italian major and minor are offered at NCAS.

The department offers major programs in ancient Mediterranean civilizations (Classics 190, Greek 490, Hebraic Studies 500, Latin 580), French 420, German 470, Italian 560, Slavic 860, and Spanish 940. Students majoring in one language area may concurrently major or minor in another language area. The department also participates in the interdisciplinary major, a multi-disciplinary minor in International Affairs, the Rutgers Study Abroad Program, and offers courses in Portuguese.

## **Major Requirements**

The requirements for a major in Italian are the following:

1. 30 credits in Italian language and literature, which may include the intermediate courses 21:560:131,132 Intermediate Italian (or equivalent preparation as demonstrated by proficiency examination). Any of the Italian language and literature courses numbered 200 or higher may be taken to satisfy this requirement, with the exception of 21:560:311,312 Italian Literature in English Translation. The prerequisite for advanced literature courses is 21:560:205,206 Introduction to Italian Literature.
2. 9 credits in other courses within the department, at least three of which must be in literature in the original language or in translation.
3. 6 credits from one or more of the following as approved by an adviser: English literature courses numbered higher than 215,216; philosophy; music history; art history.

## Minor Requirements

A minor in Italian requires 18 credits in Italian language and literature, which may include the intermediate course 21:560:131,132 Intermediate Italian (or equivalent preparation as demonstrated by proficiency examination). Any of the Italian language and literature courses numbered 200 or higher may be taken to satisfy this requirement, with the exception of 21:560:311,312 Italian Literature in English Translation.

The Department of Classical and Modern Languages and Literatures also offers minors in ancient Mediterranean civilizations, French, German, Slavic, and Spanish. Students may pursue one or more minor concentrations.

## Courses

### 21:560:101-102. ELEMENTARY ITALIAN (3,3)

*Intended for students with little or no previous knowledge of Italian. Both terms must be completed to receive credit.*

The fundamentals of grammar with drill in speaking and reading. A minimum total of ten hours of language laboratory work per term is required in NCAS elementary language courses.

### 21:560:131,132. INTERMEDIATE ITALIAN (3,3)

*Prerequisite: 21:560:102 or equivalent as determined by placement examination.*

Review of grammar, readings in literature, and other cultural areas.

### 21:560:203. GRAMMAR AND COMPOSITION (3)

Advanced grammar review, composition, diction, special problems as required.

### 21:560:204. COMPOSITION AND CONVERSATION (3)

*Prerequisite: 21:560:203 or permission of instructor.*

Intensive practice in oral and written Italian.

### 21:560:205,206. INTRODUCTION TO ITALIAN LITERATURE (3,3)

*Prerequisite: 21:560:132 or equivalent. 21:560:205,206 is prerequisite for advanced courses in Italian literature. All courses above 21:560:206 are offered in alternate years.*

The development of Italian literature traced from its origins through the contemporary period; readings from important works, reports, and discussions. Conducted, as far as is practicable, in Italian.

### 21:560:301. ADVANCED GRAMMAR AND COMPOSITION (3)

*Prerequisites: 21:560:203, 204. Recommended for Italian majors and students planning to teach Italian.*

Special stress on unusual points of grammar and syntax.

### 21:560:311,312. ITALIAN LITERATURE IN ENGLISH TRANSLATION (3,3)

*Not open to Italian majors.*

Literary examination of representative works of Italian literature; writers such as Dante, Petrarca, Boccaccio, Ariosto, Machiavelli, Goldoni, Alfieri, Manzoni, Leopardi, Verga, Carducci, Deledda, Pirandello, Ungaretti, and Montale are discussed.

### 21:560:343. ITALIAN CIVILIZATION (3)

The relationships between Italian society, literature, art, and music in selected historical periods. Taught in English.

### 21:560:344. HISTORY OF THE ITALIAN LANGUAGE (3)

Development of the Italian language from the Vulgar Latin period (fifth to ninth centuries) to the present; phonetic, morphological, and lexical changes in light of historical and social significance; "la questione della lingua."

### 21:560:353,354. INDIVIDUAL STUDY IN ITALIAN (3,3)

*Prerequisite: Permission of department chairperson or instructor.*

Individual study or research in Italian language or literature.

### 21:560:415,416. DANTE (3,3)

Dante's life and works, with emphasis on the *Divina Commedia*, which is read in its entirety.

### 21:560:421,422. ITALIAN LITERATURE OF THE RENAISSANCE (3,3)

The development of humanism and the Renaissance in Italy; readings from Petrarca, Boccaccio, Alberti, Lorenzo de' Medici, Poliziano, Pulci, Boiardo, Machiavelli, Ariosto, Michelangelo, and Tasso.

### 21:560:432. ITALIAN LITERATURE OF THE SEVENTEENTH AND EIGHTEENTH CENTURIES (3)

Intensive study of *Secentismo*, *Illuminismo*, and *Neoclassicismo*; readings of works of Marino, Galileo, Bruno, Campanella, Vico, Metastasio, Goldoni, Alfieri, Parini, and Beccaria.

### 21:560:433. ITALIAN SHORT STORY (3)

Intensive study of the *novella* in Italy from the *conti* of the thirteenth century to the *racconti* of the twentieth century; literary concepts of genre and movement; the problems of the short story as a reflection of changing social values in Italy through the past eight centuries.

### 21:560:434. ITALIAN DRAMA (3)

History of Italian theater from the early Renaissance discovery and imitation of Greek and Roman tragedies and comedies, through the sixteenth-century emergence of original Italian dramatic forms, down to modern and contemporary playwriting. Representative plays of each historical period will be read and discussed: comedies by Machiavelli, Ruzante, Arentino; tragedies by Giraldo Cinzio and Tasso; scenarios of the *Commedia dell'Arte*, melodramas by Metastasio; comedies by Goldoni; tragedies by Alfieri; modern works by Verga, Pirandello, Betti, and others.

### 21:560:435. ITALIAN LITERARY CRITICISM (3)

*Open to seniors and juniors with permission of instructor.*

The development of Italian criticism from the early eighteenth century to the present; analysis of representative writings by Vico, Foscolo, De Sanctis, Carducci, Croce, and the post-Croceans.

### 21:560:451,452. ITALIAN LITERATURE OF THE TWENTIETH CENTURY (3,3)

*First term:* major currents in poetry from the turn of the century to the period following World War II; traces the generational development of poetics such as *crepuscolarismo*, poetry of evanescent twilight zones of the mind; *futurismo*, poetry of clamorous revolt and exaltation of ultramodern beats and tempos; *ermetismo*, poetry of deep human secrets discovered by the magic of essential words. Reading and discussion of poems by Gozzano, Marinetti, Saba, Ungaretti, Montale, Quasimodo, and others. *Second term:* continuity of tradition and rebellion against present and past; survey of literary polemics and criticism, amidst the socioeconomic and political turbulence of two world wars; fascism and *resistenza*. Reading of major novels by Pirandello, Deledda, Brancati, Vittorini, Moravia, Pavese, Cassola, and Calvino.

### 21:560:477,478. ITALIAN LITERATURE OF THE NINETEENTH CENTURY (3,3)

Neoclassicism, romanticism, and *verismo*; readings from the most significant authors of these movements. *First term:* a study of the outstanding poets of the century—Foscolo, Leopardi, Carducci, Pascoli, and D'Annunzio. *Second term:* a study of the representative novelists—Manzoni, Fogazzaro, Verga, D'Annunzio, and Suevo.

## LATIN 580 (See Ancient Mediterranean Civilizations)

## LEGAL STUDIES

The minor in legal studies, an interdisciplinary program administered by the Department of History and the Department of Political Science, is offered at NCAS.

### Minor Requirements

The legal studies minor requires 21 credits as follows:

1. Required course: 21:790:304 Introduction to Law and Legal Research
2. Electives: 18 credits, with no more than 11 from a single department; no more than 6 credits may be applied to both a major and a minor program.

#### Classics

21:190:335,336 Ancient Law

#### History

21&62:510:346 Medieval Legal History  
21&62:512:365,366 American Legal History  
21&62:512:452 Topics in Legal History

#### Political Science

21&62:790:302 Governments of Continental Europe  
21&62:790:367 Jurisprudence and Legal Theory  
21&62:790:375,376 American Political Theory  
21&62:790:387 International Law  
21&62:790:401-402 American Constitutional Law and Politics

#### Sociology

21&62:920:349 Law and Society

## MATHEMATICS (Mathematics 640, Statistics 960)

### Department of Mathematics and Computer Science

Smith Hall (973/353-5156)

The major in mathematics is offered at NCAS. The minor in mathematics is offered at NCAS and at UC-N. The major in applied mathematics is offered at NCAS and at UC-N.

### Major Requirements: NCAS

#### Mathematics

A total of 51 credits is required for the mathematics major. The following are required courses:

21&62:640:135 Calculus I  
21&62:640:136 Calculus II  
21&62:640:235 Calculus III  
21&62:640:236 Calculus IV  
21&62:640:238 Foundations of Modern Mathematics  
21&62:640:251 Linear Algebra  
21&62:640:311 Advanced Calculus I  
21&62:640:312 Advanced Calculus II  
21&62:640:314 Elementary Differential Equations  
21&62:640:491 or 492 Mathematics Seminar

In addition, 12 credits are required in mathematics courses at the 300 or 400 level, 6 credits of which must be at the 400 level. The following courses are also required:

21&62:198:101 Computers and Programming I  
21&62:750:213 Elements of Physics I  
21&62:750:214 Elements of Physics II

The following is a recommended sequence for completing the courses required for a mathematics major. Additional courses are required by the student's college of matriculation for graduation.

### First Year

#### Fall Term

21&62:198:101 Computers and Programming I  
21&62:640:135 Calculus I

#### Spring Term

21&62:640:136 Calculus II

### Sophomore Year

#### Fall Term

21&62:640:236 Calculus IV  
21&62:640:238 Foundations of Modern Mathematics  
21&62:750:213 Elements of Physics I

#### Spring Term

21&62:640:235 Calculus III  
21&62:640:251 Linear Algebra  
21&62:750:214 Elements of Physics II

### Junior Year

#### Fall Term

21&62:640:311 Advanced Calculus I  
21&62:640:\_\_\_ Mathematics elective

#### Spring Term

21&62:640:312 Advanced Calculus II  
21&62:640:314 Elementary Differential Equations  
21&62:640:\_\_\_ Mathematics elective

### Senior Year

#### Fall Term

21&62:640:491 Mathematics Seminar  
21&62:640:\_\_\_ Mathematics elective

#### Spring Term

21&62:640:\_\_\_ Mathematics elective

### Applied Mathematics

The applied mathematics major is offered jointly by the Department of Mathematics and Computer Science at Rutgers-Newark and the Department of Mathematical Sciences at New Jersey Institute of Technology (NJIT). The program is designed to provide students with preparation for employment in technology-based industries or graduate study in a number of scientific fields, including applied mathematics and mathematics. Students may register for mathematics, computer science, and physics courses offered at NJIT under the prefixes 28:640, 28:198, 28:750, respectively. Thus, for example, the course listed as MATH 346 in the NJIT catalog becomes 28:640:346 for Rutgers students.

A total of 57 credits is required for the applied mathematics major.

Three sequences of courses are required:

1. 21&62:198:101,102 Computers and Programming I,II \*  
or 28:198:113,114 \*
2. 21&62:640:135,136, 235,236 Calculus I,II,III,IV \*  
or 28:640:111,112, 213
3. 21&62:750:213,214 Elements of Physics I,II †  
or 28:750:111, 121 †

\* Students must take all courses from one sequence, either all at Rutgers or all at NJIT.

† It is strongly recommended that both courses be taken from one sequence, either both at Rutgers or both at NJIT.

The following individual courses are also required:

21&62:640:238	Foundations of Modern Mathematics or 21&62:640:237 Discrete Structures (238 preferred)
21&62:640:251	Linear Algebra or 28:640:337
21&62:640:314	Elementary Differential Equations or 28:640:222
21&62:640:327	Probability and Statistics or 28:640:333
21&62:640:423	Elementary Partial Differential Equations or 28:640:331
21&62:640:473	Numerical Analysis or 28:198:421
21&62:640:475	Applied Mathematics I or 28:640:560
21&62:640:476	Applied Mathematics II or 28:640:561

In addition, three mathematics courses at the 300 or 400 level are required. Some recommended electives are:

21&62:640:311	Advanced Calculus I
21&62:640:312	Advanced Calculus II
28:640:344	Regression Analysis
28:640:346	Mathematics of Finance
28:640:371	Physiology and Medicine
21&62:640:403	Complex Variable or 28:640:332
21&62:640:410	Vector Analysis or 28:640:335

The following is a recommended sequence for completing the courses required for an applied mathematics major. Additional courses are required by the student's college of matriculation for graduation.

#### First Year

##### Fall Term

21&62:198:101	Computers and Programming I
21&62:640:135	Calculus I

##### Spring Term

21&62:198:102	Computers and Programming II
21&62:640:136	Calculus II

#### Sophomore Year

##### Fall Term

21&62:640:236	Calculus IV
21&62:640:238	Foundations of Modern Mathematics or 21&62:640:237 Discrete Structures
21&62:750:213	Elements of Physics I

##### Spring Term

21&62:640:235	Calculus III
21&62:640:251	Linear Algebra
21&62:750:214	Elements of Physics II

#### Junior Year

##### Fall Term

21&62:640:473	Numerical Analysis
21&62:640:___	Mathematics elective (21&62:640:311 is recommended)

##### Spring Term

21&62:640:314	Elementary Differential Equations
21&62:640:___	Mathematics elective (21&62:640:312 is recommended)

#### Senior Year

##### Fall Term

21&62:640:423	Elementary Partial Differential Equations
21&62:640:475	Applied Mathematics I
21&62:640:___	Mathematics elective

##### Spring Term

21&62:640:476	Applied Mathematics II
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## Minor Requirements: NCAS and UC-N

A mathematics minor requires the following courses:

21&62:640:136	Calculus II
21&62:640:235	Calculus III
21&62:640:236	Calculus IV
21&62:640:251	Linear Algebra
21&62:640:314	Elementary Differential Equations
21&62:640:327	Probability and Statistics
21&62:640:473	Numerical Analysis

## Teacher Certification

Students seeking teacher certification in mathematics must complete the requirements for a major in the mathematics department as well as satisfy other requirements for certification. For details regarding admission to the teacher education program and the requirements, students should consult both their department adviser and the chairperson of the education department.

## Courses (Mathematics 640)

### 21&62:640:037. STUDY SKILLS FOR MATHEMATICS DEVELOPMENT (N2)

*Prerequisite:* Placement by examination. *Corequisite:* 21&62:640:112.

### 21&62:640:112. COLLEGE ALGEBRA INTENSIVE (3)

*Prerequisite:* Placement by examination. *Corequisite:* 21&62:640:037. *Credit is not given for both 21&62:640:112 and 21&62:640:113. Successful completion of this course with a grade of C or better fulfills the mathematics proficiency requirement.*

Covers the same material as 21&62:640:113, but meets for three eighty-minute sessions each week. Intended for students who need extra class time and individualized attention to complete a course in college algebra.

### 21&62:640:113. COLLEGE ALGEBRA (3)

*Prerequisite:* Placement by examination. *Successful completion of this course with a grade of C or better fulfills the mathematics proficiency requirement.*

Functions and operations of functions; operations on polynomials, fractions; solution of linear and quadratic equations and inequalities; graphing of linear and quadratic functions; solution of word problems.

### 21&62:640:114. PRECALCULUS (3)

*Prerequisite:* 21&62:640:112 or 113 or placement by examination. *Intended for students who plan to enroll in additional courses in mathematics*

Algebraic, rational, trigonometric, logarithmic, and exponential functions; functions and inverse functions; solutions of nonlinear inequalities; advanced factoring techniques.

### 21&62:640:119. BASIC CALCULUS (3)

*Prerequisite:* 21&62:640:112 or 113 or placement by examination. *Credit not given for both 21&62:640:119 and 21&62:640:135. Intended for students majoring in business, social science, or the liberal arts.*

Intuitive approach to calculus, with emphasis on applications; differential and integral calculus, and multivariable calculus; algebraic techniques.

### 21&62:640:135. CALCULUS I (3)

*Prerequisite:* 21&62:640:114 or placement by examination. *Credit not given for both 21&62:640:135 and 21&62:640:119.*

Introduction to analytic geometry; inequalities, functions, limits, continuity, differentiation of algebraic functions, applications, and introduction to integration.

### 21&62:640:136. CALCULUS II (3)

*Prerequisite:* 21&62:640:135 or equivalent.

Analytic geometry; conic sections; calculus of elementary transcendental functions; formal integration; applications of calculus.



**21&62:640:155-156. HONORS CALCULUS (3,3)**

*Prerequisite: Invitation by department based on placement examination.*

*Open to all majors.*

Covers material selected from 21&62:640:135,136, 235,236 in greater depth with emphasis on mathematical rigor.

**21&62:640:235. CALCULUS III (3)**

*Prerequisite: 21&62:640:136 or equivalent.*

Introduction to vectors in the plane; polar coordinates; indeterminate forms; improper integrals; infinite series.

**21&62:640:236. CALCULUS IV (3)**

*Prerequisite: 21&62:640:136 or equivalent.*

Solid analytic geometry and vectors in three dimensions; partial differentiation; multiple integrals; applications.

**21&62:640:237. DISCRETE STRUCTURES (3)**

*Prerequisite: 21&62:640:119 or 135.*

Sets, relations, functions, graphs, trees, formal expressions, mathematical induction, and some algebraic structures; applications to probability and computer science and enumerative problems in combinatorial analysis.

**21&62:640:238. FOUNDATIONS OF MODERN MATHEMATICS (3)**

*Prerequisite: 21&62:640:136 or permission of instructor.*

Basic concepts on which modern mathematics is founded; language and logical structure of mathematics; elementary set theory, including set operations, relations, and mappings; the structure of the real number system and elements of real analysis. Proof techniques are stressed.

**21&62:640:251. LINEAR ALGEBRA (3)**

*Prerequisite: 21&62:640:119 or 135 or permission of instructor.*

The algebra and geometry of linear spaces; elementary arithmetic of matrices and determinants; systems of linear equations; other applications such as linear programming, Markov chains, and connectivity properties of graphs.

**21&62:640:311-312. ADVANCED CALCULUS I,II (3,3)**

*Prerequisites: 21&62:640:235,236, 238, and 251, or permission of instructor.*

The calculus of functions of one or more real variables; transformations and implicit functions; line and surface integrals.

**21&62:640:314. ELEMENTARY DIFFERENTIAL EQUATIONS (3)**

*Prerequisite: 21&62:640:136.*

Ordinary differential equations including solution by series and their applications; emphasis on linear equations.

**21&62:640:327. PROBABILITY AND STATISTICS (3)**

*Prerequisite: 21&62:640:119 or 135 or permission of instructor.*

Modern probability, statistics, and statistical inference; discrete and continuous distributions of random variables, statistical inference, hypothesis testing, linear regression, and correlation.

**21&62:640:353. THEORY OF EQUATIONS (3)**

*Prerequisite: 21&62:640:251.*

Algebraic equations, including methods of solving equations; introductory theory of solvability; transformations; algebraic invariants; the fundamental theorem of algebra.

**62:640:397,398. MATHEMATICS TEACHING APPRENTICESHIP (3,3)**

Practice in the teaching of mathematics supervised by members of the faculty.

**21&62:640:403. INTRODUCTORY THEORY OF FUNCTIONS OF A COMPLEX VARIABLE (3)**

*Prerequisite: 21&62:640:311 or permission of instructor.*

Analytic functions; Cauchy's integral theorem; contour integration; residues; series; and conformal mapping.

**21&62:640:410. VECTOR ANALYSIS (3)**

*Pre- or corequisite: 21&62:640:236.*

Vector algebra and vector calculus, including line and surface integrals and the theorems of Green, Gauss, and Stokes; applications to physics and geometry.

**21&62:640:423. ELEMENTARY PARTIAL DIFFERENTIAL EQUATIONS (3)**

*Prerequisite: 21&62:640:314.*

Partial differential equations of science and engineering. Topics include initial and boundary value problems for parabolic, hyperbolic, and elliptic second-order equations. Stress on separation of variables, special functions, transform methods, and numerical techniques.

**21&62:640:424. OPERATIONS RESEARCH (3)**

*Prerequisites: 21&62:640:235,236, or permission of instructor.*

Major topics and techniques in operations research; topics chosen from transportation problems, scheduling problems, linear programming, dynamic programming, mathematical inventory theory, and game theory.

**21&62:640:432. INTRODUCTORY DIFFERENTIAL GEOMETRY (3)**

*Prerequisites: 21&62:640:236, 238.*

Differential geometry; curves in Euclidean 3-space; regular surfaces in space; parametrization of surfaces; first fundamental form for surfaces; Gauss map and second fundamental form; intrinsic geometry of surfaces; intrinsic geometry of manifolds.

**21&62:640:433. PROJECTIVE GEOMETRY (3)**

*Prerequisite: 21&62:640:238.*

Projective and affine curves; polynomial rings; ideals; Hilbert's basis theorem; the *nullstellungssatz*; local rings; singularities.

**21&62:640:435-436. GEOMETRY I,II (3,3)**

*Prerequisites: 21&62:640:236, 251.*

Axiomatic systems; finite geometries; Euclidean geometry; non-Euclidean geometry.

**21&62:640:441,442. TOPOLOGY I,II (3,3)**

*Prerequisite: 21&62:640:238 or permission of instructor.*

General topological spaces and continuous mappings; linear point set theory and plane point set theory; separation, connectedness and compactness; localization; topological products and Tychonoff's Theorem; metric spaces and isometrics.

**21&62:640:450. VECTOR SPACES AND MATRICES (3)**

*Prerequisite: 21&62:640:251 or permission of instructor.*

Vector spaces; matrices and systems of linear equations; the algebra of matrices and canonical forms.

**21&62:640:451,452. ABSTRACT ALGEBRA (3,3)**

*Prerequisites: 21&62:640:238, 251, or permission of instructor.*

Elementary set theory; fundamental structures of algebra, including semigroups, groups, rings, and fields; homomorphisms and isomorphisms; factor group, rings of residue classes, and other factor structures.

**21&62:640:456. THEORY OF NUMBERS (3)**

*Prerequisite: 21&62:640:238 or permission of instructor.*

Divisibility of integers; the series of primes; number-theoretic functions; continued fractions; congruences; diophantine equations; quadratic residues; the Pell equation.

**21&62:640:473. NUMERICAL ANALYSIS (3)**

*Prerequisites: 21&62:198:101 and 21&62:640:136.*

Error analysis; interpolation theory; numerical solution of equations; polynomial approximations; numerical differentiation and integration; solution of differential equations.

**21&62:640:475,476. APPLIED MATHEMATICS I,II (3,3)**

*Prerequisite: 21&62:640:314 or permission of instructor.*

Fourier series and integrals; boundary value problems; matrices; finite differences; special functions; numerical methods.

**21&62:640:477. FUNDAMENTAL MATHEMATICAL PROBABILITY (3)**

*Prerequisite: 21&62:640:136 or permission of instructor.*

Fundamentals of probability theory for discrete and continuous distributions; random variables and probability distributions; Bayes's theorem; the Bernoulli and Poisson distributions; central limit theorem; strong law of large numbers.

**21&62:640:491,492. MATHEMATICS SEMINAR (3,3)**

*Prerequisite: Permission of instructor. Students may enroll in course more than one time.*

Selected topics in mathematics; individual study stressed.

**21&62:640:493,494. INDIVIDUAL STUDIES IN MATHEMATICS (3,3)**

*Prerequisite: Permission of instructor. Students may enroll in course more than one time.*

Individual studies of selected topics in mathematics.

**Courses (Statistics 960)****21&62:960:211-212. STATISTICS I,II (3,3)**

*Prerequisite: Mathematics proficiency.*

Principles, methods, and application of statistical methodology; includes frequency distributions, measures of central tendency and dispersion, simple probability, sampling, regression and correlation analysis, curve fitting, and tests of significance.

**MEDICAL TECHNOLOGY 660**

(See Clinical Laboratory Sciences 191)

**METEOROLOGY 670**

(See Geological Sciences)

**MICROBIOLOGY (See Biological Sciences)****MUSIC (Music 700, Music Performance 701)****Department of Visual and Performing Arts**

*Bradley Hall (973/353-5119)*

The music major and minor are offered at NCAS; an M.A. in jazz history and research is offered through the Graduate School–Newark.

The music faculty uniquely offers expertise in all types of music, including jazz, classical, and world music, integrating the varieties of musical experience wherever possible. Students have frequent contact with faculty advisers who aid in planning work and defining goals. The major is designed to assist the student to function easily with music. Today's musician should strive to be competent as a scholar, as a creator, and as a performer. The music offerings are designed to foster a broad view of music encompassing traditions around the world.

**Major Requirements**

The following courses are required:

- 21&62:700:101 Introduction to Music (3)
- 21&62:700:121 Music Theory I (3)
- 21&62:700:122 Music Theory II (3)
- 21&62:700:224 Applied Musicianship (3)
- 21&62:700:235 Harmony I (3)
- 21&62:700:236 Harmony II (3)
- 21&62:700:237 Survey of Western Music (3)
- 21&62:700:238 Survey of Western Music (3)
- 21&62:700:265 Jazz (3)
- 21&62:700:280 World Music (3)
- Four music performance (701) courses (4)

Students majoring in music are required to enroll each term in a departmental ensemble (chorus or band).

**Applied Music.** All students majoring in music are expected to study an instrument or voice each term. A secondary instrument, or voice, is also urged.

**Music Ensembles.** Membership in an instrumental ensemble (jazz, chamber music) or chorus is required each term (21&62:700:231,232, 234, 357,358, 359,360 Rutgers University Chorus; 21:701:255,256, 355,356, 455,456 Instrumental Ensemble I,II,III).

**Minor Requirements**

The music minor requires 18 credits, as follows:

- 21&62:700:101 Introduction to Music (3)
- 21&62:700:121 Music Theory I (3)
- 21&62:700:122 Music Theory II (3)
- 21&62:700:237,238 Survey of Western Music (3,3)  
or an approved substitution
- 6 credits in music performance (private lessons or ensemble [chorus or band])

**Teacher Certification**

Students seeking teacher certification in music must complete the requirements for a major in the music program as well as satisfy other requirements for certification. For details regarding admission to the teacher education program and the requirements, students should consult both their department adviser and the chairperson of the education department.

**Sequence in Arts Management**

The faculty of the Department of Visual and Performing Arts in conjunction with members of the Faculty of Management offers a sequence of six courses as preprofessional training for a wide spectrum of not-for-profit arts management opportunities. The sequence provides students with the opportunity to acquire specific business skills that can be applied to a profession in the arts. For practical experience, a wide variety of internships are available, some of which provide stipends. The sequence comprises the following 18 credits:

- 21&62:080:393,394 Internship in Art (3,3)
- 21&62:084:395,396 Issues in Arts Management I,II (3,3)
- 21&62:084:408,409,410,411 Topics in Arts Management I,II,III,IV (3,3,3,3)

**Courses (Music History 700)****21&62:700:101. INTRODUCTION TO MUSIC (3)**

A comprehensive view of music designed to develop critical ability as a listener; significant composers, representative works, forms, and styles.

**21&62:700:135. MUSIC AND FILM (3)**

Relationship between music and film from the silent era of live accompaniment to the modern era of synchronized soundtracks; philosophical relationship of music to visual arts.

**21&62:700:219. WOMEN IN MUSIC (3)**

Women in pop, jazz, and classical music; their lives and society's changing attitudes toward women performers and composers.

**21&62:700:229. AMERICAN MUSIC (3)**

*Previous musical knowledge not required.*

Survey of a representative sampling of U.S. musical traditions, including Native American, African-American, Ukrainian, Irish, Italian, Polish, Hispanic, and others; processes of change, development, and preservation, as well as musical features.

**21&62:700:237,238. SURVEY OF WESTERN MUSIC (3,3)**  
The forms and styles of Western music from the early medieval period to the present day.

**21&62:700:265. JAZZ (3)**  
A survey of jazz from its earliest roots to its present level of sophistication; lectures illustrated by recordings and live performances.

**21:700:280. WORLD MUSIC—AN INTRODUCTION (3)**  
World folk and ethnic musics, including Asian, African, European; musical instruments; methods of approach to diverse instrumental and vocal performance styles; lecture-demonstrations by visiting ethnic musicians.

**21:700:303. THE AGE OF BACH (3)**  
Discussion of vocal and instrumental forms of the early eighteenth century with emphasis on the works of Bach.

**21&62:700:304. THE AGE OF BEETHOVEN (3)**  
The evolution of the classical style; emphasis on the life and works of Beethoven.

**21:700:311,312. OPERA AND MUSIC DRAMA (3,3)**  
A study of the development of dramatic forms in music, based on a selection of significant operas.

**21&62:700:317. MUSIC IN THE ROMANTIC ERA (3)**  
A study of the period c. 1815 to 1900; works of Schubert, Schumann, Berlioz, Liszt, Brahms, Wagner, and Verdi.

**21&62:700:318. MUSIC IN THE TWENTIETH CENTURY (3)**  
Study of the principal stylistic tendencies from c. 1900 to the present; works of Debussy, Schoenberg, Stravinsky, Hindemith, and Bartók; experimental music and the contributions of American composers.

**21&62:700:319. TOPICS IN JAZZ (3)**  
Changing topics, which may include the work of a particular performer, or style, or the sociology of jazz.

**21&62:700:321. TOPICS IN MUSIC HISTORY (3)**  
Changing topics delving into intriguing aspects of music history.

## Courses (Music Theory 700)

**21&62:700:111. FUNDAMENTALS OF MUSIC I (3)**  
Music notation as it applies to melody, harmony, and rhythm. Scales and beginning harmony.

**21&62:700:112. FUNDAMENTALS OF MUSIC II (3)**  
*Prerequisite: 21&62:700:111 or permission of instructor.*  
Continuing study of harmony; exercises in elementary composition; analysis of musical examples.

**21&62:700:121. MUSIC THEORY I (3)**  
Review of scales, intervals, triads; elementary part-writing; analysis of pertinent music examples.

**21&62:700:122. MUSIC THEORY II (3)**  
*Prerequisite: 21&62:700:121 or permission of instructor.*  
Continuing study of harmony; exercises in elementary composition; analysis of musical examples.

**21&62:700:224. APPLIED MUSICIANSHIP (3)**  
*Prerequisite: 21&62:700:111 or permission of instructor.*  
Ear training, sight singing, and dictation; study of harmony at the keyboard.

**21&62:700:235. HARMONY I (3)**  
*Prerequisite: 21&62:700:112 or permission of instructor.*  
Study of common-practice harmony including altered and chromatic chords; written exercises; harmonic and formal analysis of selected compositions.

**21&62:700:236. HARMONY II (3)**  
*Prerequisite: 21&62:700:235.*  
Continuation of 21&62:700:235.

**21&62:700:325,326. STUDIES IN COUNTERPOINT (3,3)**  
Contrapuntal theory and practice based on analysis of the works of Renaissance and baroque masters; composition in the various contrapuntal forms.

**21&62:700:327,328. KEYBOARD HARMONY (2,2)**  
The application of music theory to the keyboard.

**21&62:700:342. ORCHESTRATION (2)**  
Application of the principles and techniques of orchestration; score reading.

**21&62:700:349. CONDUCTING (2)**  
Conducting and rehearsal techniques in theory and practice.

**21&62:700:365,366. JAZZ COMPOSITION AND ARRANGING (3,3)**  
*Prerequisite: 21&62:700:236 or permission of instructor.*  
Introduction to the techniques of composing and arranging for jazz ensemble (small combo, big band, and studio orchestra); emphasis on original creative work in the contemporary jazz idiom as well as the study of classic compositions from the jazz repertoire; studio and other commercial applications considered.

**21&62:700:419,420. SPECIAL STUDIES IN MUSIC HISTORY AND COMPOSITION (3,3)**  
Problems of music history with reports of individual inquiry; concentrated studies in creative composition.

**21&62:700:435,436. ADVANCED STUDIES IN THEORY AND COMPOSITION (3,3)**  
*Prerequisite: 21&62:700:236.*  
Analysis of late romantic and contemporary compositions; creative composition in small forms.

## Courses (Music Ensembles 700, 701)

**21&62:700:231,232. RUTGERS UNIVERSITY CHORUS (2,2)**  
*Students may enroll in terms in any order. Prerequisite: Permission of instructor.*  
Intensive study of choral literature and its forms from the sixteenth century to the present. Emphasis on group vocal training, with at least one major performance each term.

**21&62:700:234. RUTGERS UNIVERSITY CHORUS (2)**  
Continuation of 21&62:700:231,232.

**21&62:700:241,242. VOICE TRAINING (1,1)**  
Fundamentals of singing, tone production, diction, breathing.

**21&62:700:357,358. RUTGERS UNIVERSITY CHORUS (1,1)**

**21&62:700:359,360. RUTGERS UNIVERSITY CHORUS (2,2)**

**21:701:255,256. INSTRUMENTAL ENSEMBLE I (2,2)**  
*Prerequisite: Permission of instructor.*  
Study and performance of music for instrumental ensembles, including jazz and popular music. On occasion singers may join this ensemble.

**21&62:701:263,264. JAZZ IMPROVISATION (BA,BA)**  
*Prerequisite: 21&62:700:121 or permission of instructor.*  
An introduction to the art of jazz improvisation, applicable to all instruments and voice; relationship of improvisation to musical form and structure; improvising in small groups.

**21:701:355,356. INSTRUMENTAL ENSEMBLE II (1,1)**

**21:701:455,456. INSTRUMENTAL ENSEMBLE III (1,1)**

## Courses (Music Performance 701)

### Individual Instruction

Individual instruction is offered to any qualified student in the college. Students should contact the department chairperson for information. Courses are to be taken in sequence, beginning with the 100 level. Lessons must be arranged with the instructor prior to or during the first week of classes.

#### First Year

21&62:701:109,110	SAXOPHONE (1,1)
21&62:701:141,142	GUITAR (1,1)
21&62:701:161,162	PIANO (1,1)
21&62:701:165,166	ORGAN (1,1)
21&62:701:169,170	VOICE (1,1)
21&62:701:171,172	PERCUSSION (1,1)
21&62:701:173,174	VIOLIN (1,1)
21&62:701:177,178	VIOLA (1,1)
21&62:701:181,182	VIOLONCELLO (1,1)
21&62:701:183,184	DOUBLE BASS (1,1)
21&62:701:185,186	FLUTE (1,1)
21&62:701:187,188	OBOE (1,1)
21&62:701:189,190	CLARINET (1,1)
21&62:701:191,192	BASSOON (1,1)
21&62:701:193,194	FRENCH HORN (1,1)
21&62:701:195,196	TRUMPET (1,1)
21&62:701:197,198	TROMBONE OR TUBA (1,1)

#### Second Year

21&62:701:209,210	SAXOPHONE (1,1)
21&62:701:241,242	GUITAR (1,1)
21&62:701:261,262	PIANO (1,1)
21&62:701:265,266	ORGAN (1,1)
21&62:701:269,270	VOICE (1,1)
21&62:701:271,272	PERCUSSION (1,1)
21&62:701:273,274	VIOLIN (1,1)
21&62:701:277,278	VIOLA (1,1)
21&62:701:281,282	VIOLONCELLO (1,1)
21&62:701:283,284	DOUBLE BASS (1,1)
21&62:701:285,286	FLUTE (1,1)
21&62:701:287,288	OBOE (1,1)
21&62:701:289,290	CLARINET (1,1)
21&62:701:291,292	BASSOON (1,1)
21&62:701:293,294	FRENCH HORN (1,1)
21&62:701:295,296	TRUMPET (1,1)
21&62:701:297,298	TROMBONE OR TUBA (1,1)

#### Third Year

21&62:701:309,310	SAXOPHONE (1,1)
21&62:701:341,342	GUITAR (1,1)
21&62:701:361,362	PIANO (1,1)
21&62:701:365,366	ORGAN (1,1)
21&62:701:369,370	VOICE (1,1)
21&62:701:371,372	PERCUSSION (1,1)
21&62:701:373,374	VIOLIN (1,1)
21&62:701:377,378	VIOLA (1,1)

21&62:701:381,382	VIOLONCELLO (1,1)
21&62:701:383,384	DOUBLE BASS (1,1)
21&62:701:385,386	FLUTE (1,1)
21&62:701:387,388	OBOE (1,1)
21&62:701:389,390	CLARINET (1,1)
21&62:701:391,392	BASSOON (1,1)
21&62:701:393,394	FRENCH HORN (1,1)
21&62:701:395,396	TRUMPET (1,1)
21&62:701:397,398	TROMBONE OR TUBA (1,1)

#### Fourth Year

21&62:701:409,410	SAXOPHONE (1,1)
21&62:701:441,442	GUITAR (1,1)
21&62:701:461,462	PIANO (1,1)
21&62:701:465,466	ORGAN (1,1)
21&62:701:469,470	VOICE (1,1)
21&62:701:471,472	PERCUSSION (1,1)
21&62:701:473,474	VIOLIN (1,1)
21&62:701:477,478	VIOLA (1,1)
21&62:701:481,482	VIOLONCELLO (1,1)
21&62:701:483,484	DOUBLE BASS (1,1)
21&62:701:485,486	FLUTE (1,1)
21&62:701:487,488	OBOE (1,1)
21&62:701:489,490	CLARINET (1,1)
21&62:701:491,492	BASSOON (1,1)
21&62:701:493,494	FRENCH HORN (1,1)
21&62:701:495,496	TRUMPET (1,1)
21&62:701:497,498	TROMBONE OR TUBA (1,1)

## PHILOSOPHY 730

### Department of Philosophy

Conklin Hall (973/353-5029)

The philosophy major and minor are offered at NCAS and UC-N.

### Major Requirements

The philosophy major is designed to give students an understanding of the historical development of philosophic concepts and to introduce students to the logical tools applicable to philosophical work. A variety of electives are offered, which are intended to enrich the student's understanding of the field.

#### Philosophy Major

The major requires 30 credits in philosophy courses which must include the following:

21&62:730:201	Introduction to Logic
21&62:730:206	Introduction to Greek Philosophy
21&62:730:207	Introduction to Modern Philosophy

Subject to the approval of the philosophy department, up to 6 of the 30 philosophy credits required for the philosophy major may be taken in upper-level (300 level or above) courses dealing with theoretical issues from the following disciplines: Economics 220; History 510; Mathematics 640; Political Science 790; Psychology 830; and Sociology 920. The following are some examples of acceptable courses:



- 21&62:510:335,336 History of Socialism and Communism
- 21&62:640:393 Development of Mathematics
- 21&62:790:372 Modern Political Theory
- 21&62:840:398 Topics in Religious Studies
- 21&62:920:409 Classical Sociological Theory
- 21&62:920:415 Contemporary Sociological Theory

## Minor Requirements

### **Philosophy Minor**

A student may minor in philosophy by taking a program of 18 credits to be developed in consultation with the philosophy department.

### **Applied Ethics Minor**

A minor in applied ethics requires 18 credits, which must include:

- 21&62:730:105 Current Moral and Social Issues
- 21&62:730:112 Introduction to Ethics

At least 12 credits from the following:

#### **NCAS**

- 21&62:730:243 Philosophical Issues in Punishment and Human Rights
- 21&62:730:251 Business and Professional Ethics
- 21&62:730:258 Philosophy and the Black Experience
- 21&62:730:327 Philosophical Issues in Feminism
- 21&62:730:328 Social and Political Philosophy
- 21&62:730:350 Decision Theory and Ethics

#### **NJIT**

- Phil 334 Engineering Ethics and Technological Practice
- Phil 346 Ethical Issues in Public Policy
- Phil 351 Biomedical Ethics
- STS 360 Ethics and the Environment

A student may petition the department to substitute courses other than those mentioned above to satisfy any of the major or minor requirements in philosophy.

## Courses (Philosophy 730)

### **21&62:730:103. INTRODUCTION TO PHILOSOPHY (3)**

Introduction, for beginners, to central philosophical problems, primarily in the Western tradition, including such topics as morality, truth, knowledge, mind, reality, and the existence of God.

### **21&62:730:105. CURRENT MORAL AND SOCIAL ISSUES (3)**

Examines such issues as sexual morality and abortion, capital punishment, sexism, racism and affirmative action, censorship, privacy, drug abuse and drug laws, economic distribution and justice, and consumption and scarcity of natural resources.

### **62:730:107. CRITICAL THINKING (3)**

*Intended primarily for first-year students and sophomores.*

Develops and improves fundamental skills of clear, coherent, and critical thinking, speaking, and writing. Aims to foster confidence in the student's ability to solve problems by reasoning. Emphasizes rules of critical reasoning and techniques for applying them to real-world problems in science, management, law, aesthetics, and politics.

### **21&62:730:112. INTRODUCTION TO ETHICS (3)**

Principal ethical theories, primarily in the Western philosophical tradition, advanced by theorists from Plato to twentieth-century philosophers.

### **21&62:730:201. INTRODUCTION TO LOGIC (3)**

Introduction to the concepts of valid reasoning and proof in modern logic.

### **21&62:730:206. INTRODUCTION TO GREEK PHILOSOPHY (3)**

Origins and development of Western philosophy among the ancient Greeks; study of the pre-Socratics, Socrates, Plato, Aristotle, and later Greek and Roman philosophers.

### **21&62:730:207. INTRODUCTION TO MODERN PHILOSOPHY (3)**

The formative period of modern Western philosophy from its emergence out of medieval thought; emphasis on works of major philosophers of the sixteenth to eighteenth centuries from Montaigne to Kant.

### **21&62:730:208. EXISTENTIALISM AND CONTINENTAL PHILOSOPHY (3)**

The philosophical roots and dimensions of existentialism and its relations with phenomenology and the contemporary continental tradition; works by Kierkegaard, Nietzsche, Husserl, Heidegger, Sartre, Habermas, and Derrida.

### **21&62:730:225. PHILOSOPHY OF SCIENCE (3)**

Classical problems of induction and interpretation. The idealized picture of scientific method as fallible but self-correcting, converging to truth in the long run, is examined in the light of elementary probability theory. The problem of interpretation is introduced in the context of the theoretician's dilemma and illustrated by the case of geometric theory. The realist and instrumentalist interpretations are contrasted in the light of elementary concepts of logical theory.

### **21&62:730:227. PHILOSOPHY OF RELIGION (3)**

Major controversies over the nature of religious belief, the "logic" of religious language, and the justification of religious claims; contemporary and traditional positions considered, but primary emphasis given to those aspects of religion open to rational argument.

### **21&62:730:228. PHILOSOPHY OF THE ARTS (3)**

The nature of aesthetic experience as a significant form of human activity; aesthetic analysis, meaning and truth in the arts, the foundation of value judgment, and criticism in the arts.

### **21&62:730:243. PHILOSOPHICAL ISSUES IN PUNISHMENT AND HUMAN RIGHTS (3)**

The reason(s) for which punishment is justified, and the conduct for which punishment is appropriate; examines relationships between punishment, justice, and human rights. Uses cases from American law as well as writings by philosophers on the legitimacy of punishment.

### **21&62:730:251. BUSINESS AND PROFESSIONAL ETHICS (3)**

*Not open to first-year students.*

Ways of thinking about moral issues that arise in business and the professions: conflicts of interest and obligation, professional responsibility, whistle-blowing and loyalty, corporate social responsibility, dealing with local practices overseas, corporate culture, employees' rights, and the moral status of capitalism and other economic systems.

### **21&62:730:258. PHILOSOPHY AND THE BLACK EXPERIENCE (3)**

An analysis of what constitutes the black experience; issues in the black experience, e.g., racial integration, racial separatism, racism, and black values.

### **21&62:730:260. PHILOSOPHICAL IDEAS IN LITERATURE (3)**

Philosophical issues in literary works, primarily in the Western tradition; freedom and determinism, conceptions and reality of the self, the quest for meaning, the existence of evil.

**21&62:730:262. EASTERN PHILOSOPHY (3)**

A comparative analysis of Eastern, mainly Indian, and Western perspectives on key issues, e.g., God, self, and universe; explores the role of reason vis à vis contemplation; studies philosophies including Vedanta, Buddhism, Jainism, and others.

**21&62:730:272. METAPHYSICS AND PHILOSOPHY OF MIND (3)**

Analyzes such topics as time, universals, identity, causation and freedom, mind and body, and the relation of thought and reality in classical and contemporary texts primarily in the Western philosophical tradition.

**21&62:730:309. CONTEMPORARY ANALYTICAL PHILOSOPHY (3)**

Introduction to the origins and directions of present-day philosophy and its recent accomplishments, especially in the English-speaking world: the giants of the early twentieth century, positivism and ordinary language philosophy; major postwar figures; and the present generation (Rorty, Putnam, Davidson). Emphasis on understanding what philosophers are doing now and why.

**21&62:730:312. PHILOSOPHICAL IDEAS IN THE UNITED STATES (3)**

American contributions to idealism, realism, and pragmatism; readings from Royce, Dewey, James, and Rorty.

**21&62:730:327. PHILOSOPHICAL ISSUES OF FEMINISM (3)**

Examines different theories of nature and source of women's oppression; liberal, radical, Marxist, and socialist feminism; the concept of oppression, woman's nature, individual rights and social justice, the meaning of equality, the role of the family (actually and ideally), and the importance of biological, social, and economic categories.

**21&62:730:328. SOCIAL AND POLITICAL PHILOSOPHY (3)**

The interrelationship of the state, law, and morality; examination of the interdependence of ideology and political obligation; the equivocal meanings of liberty, rights, and justice; major approaches such as Social Contract Theory and Marxism.

**21&62:730:332. FORMAL LOGIC (3)**

*Prerequisite: 21&62:730:201 or permission of instructor.*  
Completeness and consistency of classical sentential and predicate logic; the problem of decidability and elementary model theory.

**21&62:730:342. THEORIES OF KNOWLEDGE (3)**

The nature and limits of knowledge; the problems of rationalism and empiricism, realism and idealism, and meaning and truth.

**21&62:730:348. PHILOSOPHY OF LANGUAGE (3)**

Currently disputed issues arising from the philosophical study of language: its use, structure, and limitation; contemporary theories of meaning, speech acts, the relevance of transformational grammar, and exploratory consideration of the role of analogies; readings from Frege, Chomsky, Austin, and Davidson.

**21&62:730:350. DECISION THEORY AND ETHICS (3)**

Introduction to Bayesian decision theory and two-person game theory, with applications to ethical, ecological, and economic problems. Alternative foundations for the theory of utility and subjective probability are studied, and their philosophical significance examined. Alternative solutions to the cooperative game are studied and their philosophical foundations examined.

**21&62:730:441,442. INDIVIDUAL STUDY IN PHILOSOPHY (BA,BA)**

*Enrollment only by permission of department.*

**21&62:730:451,452. ADVANCED SEMINAR IN PHILOSOPHY (3,3)**

*Prerequisites: Four courses in philosophy or permission of program adviser.*  
The focus may be a concentrated study of a particular text, philosopher, or school of thought or an examination of a particular philosophic concept, methodology, or problem.

**Other Related Course****21&62:310:415. INTRODUCTION TO PHILOSOPHY OF EDUCATION (3)**

*See Education 310.*

Students who major in philosophy may enroll in this course for elective credit.

**Courses (Religious Studies 840)****21&62:840:105,106. INTRODUCTION TO RELIGION (3,3)**

The basic religious concerns of humanity and the ways in which religions have developed in Eastern and Western history, giving intellectual, moral, and institutional expression to the meaning of human existence and its relationship to the transcendent.

*First term:* folk religions and the religions of the East. *Second term:* religions of the West and modern religious developments.

**21&62:840:202. BIBLICAL STUDIES: NEW TESTAMENT (3)**

*Recommended: 21:500:205.*

Analysis of the New Testament and contemporary methods of interpretation; theological development of earliest Christianity and the problem of the historical Jesus.

**21&62:840:204. SEMINAR ON RELIGION AND CULTURE (3)**

*Prerequisites: 21&62:840:105,106. Designed for religious studies minors; others with permission of instructor.*

Interdisciplinary survey of religious themes in literature and the fine arts and of religious concerns as they relate to other academic disciplines.

**21&62:840:398,399. TOPICS IN RELIGIOUS STUDIES (3,3)**

Each term the course will offer a different topic for intensive, interdisciplinary study in a seminar format.

**PHYSICS 750****Department of Physics**

*Smith Hall (973/353-5250)*

The major and minor in physics and the major in applied physics are offered at NCAS.

**Major Requirements****Physics 750**

The program in physics is designed to enable a major to graduate with a sound and thorough preparation in basic physics. The student is prepared either for subsequent graduate study in physics or for employment in physics or allied fields at a level commensurate with a good undergraduate physics background. Individual study and participation in ongoing research within the department are encouraged for those interested and qualified. Research opportunities also exist in undergraduate research programs organized or sponsored by the American Institute of Physics and the National Science Foundation, on a competitive basis.

The physics major may be combined with undergraduate programs or selected course work in the areas of pre-medicine, prebusiness, and prelaw; this provides excellent credentials and background for entrance into professional programs in these fields. A modified physics program is also available to students in the field of education, which leads to certification for high school teaching in the area of physical science.

The requirements for the major include 37 credits in physics with a grade-point average of 2.5. The following courses are required for the major.

- 21&62:750:205,206 Introductory Physics Laboratory  
 21&62:750:213,214 Elements of Physics\*  
 (21&62:750:203,204 may be substituted under special circumstances)  
 21&62:750:315 Introductory Thermodynamics  
 21&62:750:316 Introduction to Modern Physics  
 21&62:750:333 Applications of Mathematics to Physics  
 21&62:750:361,362 Mechanics I,II  
 21&62:750:385,386 Electromagnetic Fields and Waves  
 21&62:750:403 Introduction to Atomic and Nuclear Physics  
 21&62:750:404 Quantum Mechanics  
 21&62:750:407,408 Advanced Physics Laboratory I,II

The major also requires the following courses in mathematics:

- 21&62:640:135,136 Calculus I,II  
 21&62:640:236 Calculus IV  
 21&62:640:314 Elementary Differential Equations

In addition, two courses from the following list are required:

- 21&62:640:251 Linear Algebra (or MATH 337 †)  
 21&62:640:375 Fourier Series and Boundary Value Problems  
 21&62:640:410 Vector Analysis (or MATH 335 †)  
 21&62:640:473 Numerical Analysis  
 21&62:640:475,476 Applied Mathematics I,II  
 21&62:750:461 Computational Methods in Applied Physics  
 21&62:750:462 Mathematical Methods of Theoretical Physics  
 Math 331 Introduction to Partial Differential Equations †

Courses recommended, but not required, include:

- 21&62:160:115,116 General Chemistry  
 21&62:640:403 Introductory Theory of Functions of a Complex Variable  
 21&62:750:406 Introductory Solid-State Physics  
 21:750:410 Physical Electronics  
 21&62:750:411 Physical Optics  
 21&62:750:491,492 Physics Seminar  
 EE 251 Digital Design †

It is strongly recommended that students who intend to pursue a Ph.D. in physics acquire a reading knowledge of French, German, or Russian.

### Applied Physics 755

The applied physics program is offered jointly by the physics departments of the Faculty of Arts and Sciences–Newark (FAS–N) and the New Jersey Institute of Technology (NJIT). It is designed to provide students with a broad background in physics and, at the same time, to relate that background to work in many high-technology industries, such as microelectronics, laser technology, and systems design/control. The program also prepares students for graduate studies in applied physics or, with some additional courses for specific requirements, in engineering or computer science.

The applied physics program consists of a common core of basic physics and mathematics courses and currently offers two tracks, one in computational physics and one in microelectronics. The computational physics track addresses

industry's current need for personnel in scientific computing, software design, modeling, and simulation. The microelectronics track augments standard training in microchip engineering with the fundamental physics and mathematics underlying the technology necessary for research and development.

The course requirements for successful completion of this program are:

#### Physics courses:

- 21&62:750:205,206 Introductory Physics Laboratory  
 21&62:750:213,214 Elements of Physics\*  
 (21&62:750:203,204 may be substituted under special circumstances)  
 21&62:750:315 Introductory Thermodynamics  
 21&62:750:316 Introduction to Modern Physics  
 21&62:750:333 Applications of Mathematics to Physics  
 21&62:750:361 Mechanics I  
 21&62:750:385,386 Electromagnetic Fields and Waves I,II  
 21&62:750:404 Quantum Mechanics  
 21&62:750:406 Introductory Solid-State Physics  
 21&62:750:407,408 Advanced Physics Laboratory I,II  
 21&62:750:461 Computational Methods in Applied Physics  
 EE 251 Digital Design †

#### Mathematics and Computer Science courses:

- 21&62:198:101,102 Computers and Programming I,II  
 21&62:640:135,136, 236 Calculus I,II, IV  
 21&62:640:314 Elementary Differential Equations

#### Electrical Engineering courses:

- EE 231,232 Circuits and Systems I,II †  
 EE 291 Electrical Engineering Laboratory †

#### Additional computer science courses required for the computational physics track:

- CIS 438 Computer Graphics †  
 CIS 461 Systems Simulations †

#### Additional physics courses required for the microelectronics track:

- Phys 481,482 Microelectronics I,II †

The following courses are recommended, not required, as electives:

- 21&62:198:453 Microcomputers  
 21&62:640:251 Linear Algebra  
 21&62:640:327 Probability and Statistics  
 21&62:640:375 Fourier Series and Boundary Value Problems  
 21&62:640:403 Introductory Theory of Functions of a Complex Variable  
 21&62:750:362 Mechanics II  
 21&62:750:403 Introduction to Atomic and Nuclear Physics  
 21:750:410 Physical Electronics  
 21&62:750:411 Physical Optics  
 21&62:750:462 Mathematical Methods of Theoretical Physics  
 21&62:750:491 Physics Seminar  
 CIS 421 Numerical Calculus †  
 CIS 438 Programming for Interactive Computer Graphics †

\* Entering students with a grade of 4 or 5 on the Advanced Placement Examination may receive credit for 21&62:750:213,214.

† Course available through cross-registration with the New Jersey Institute of Technology (NJIT).



## Minor Requirements

A total of 18 credits is required for the physics minor. The following courses are required:

- 21&62:750:203,204 General Physics or 21&62:750:213,214  
Elements of Physics  
21&62:750:205,206 Introductory Physics Laboratory

In addition, 10 credits must be earned from among the following courses:

- 21&62:750:109 Astronomy and Cosmology (3)  
21&62:750:307 Computer Electronics (4)  
21&62:750:315 Introductory Thermodynamics (3)  
21&62:750:316 Introduction to Modern Physics (3)  
21&62:750:333 Applications of Mathematics  
to Physics (3)  
21&62:750:407 Advanced Physics Laboratory I (1)  
21&62:750:408 Advanced Physics Laboratory II (1)  
21:750:410 Physical Electronics (2)

## Teacher Certification

Students seeking teacher certification in comprehensive science must complete the requirements for a major in the physics department and satisfy other requirements for certification. For details regarding admission to the teacher education program and the requirements, students should consult both their department adviser and the chairperson of the education department.

## Courses

### 21&62:750:109. ASTRONOMY AND COSMOLOGY (3)

*Recommended for nonscience majors.*

A nonmathematical presentation of contemporary views of the origin, evolution, and structure of the solar system, stars, galaxies, and the universe; the current understanding of neutron stars, quasars, black holes, and other celestial objects.

### 21&62:750:202. PHYSICS AS A LIBERAL ART (3)

*Recommended for nonscience majors.*

Nonmathematical treatment of the major ideas in physics from ancient times to the present: relativity, the uncertainty principle, quantum theory, cosmology, and the atom as viewed by classical and modern physics; atomic energy; impact on culture and society.

### 21&62:750:203,204. GENERAL PHYSICS I,II (3,3)

*Prerequisite: 21&62:640:114. Students who major in physics and mathematics are advised to enroll in 21&62:750:213,214 instead of this course.*

An algebra-based course treating the basic concepts of mechanics, sound, electricity and magnetism, light, and atomic and nuclear physics.

### 21&62:750:205,206. INTRODUCTORY PHYSICS LABORATORY (1,1)

*Lab. 3 hrs. Pre- or corequisites: 21&62:750:203,204 or 21&62:750:213,214.*

The laboratory for 21&62:750:203,204 or 21&62:750:213,214.

### 21&62:750:209. GENERAL PHYSICS III (3)

*Prerequisites: 21&62:750:203,204 or equivalent.*

Supplements the general physics sequence: fluids, thermal physics, physical optics, and modern physics.

### 21&62:750:213,214. ELEMENTS OF PHYSICS (3,3)

*Pre- or corequisites: 21&62:640:135,136. Intended for physics and mathematics majors and preengineering students, but open to all qualified students.*

A calculus-based introductory course in physics. Topics include mechanics, wave phenomena, electricity and magnetism, and optics.

### 21&62:750:315. INTRODUCTORY THERMODYNAMICS (3)

*Prerequisites: 21&62:750:203,204 or 213,214 and one year of introductory calculus.*

Concludes the introductory sequence in physics. Interpretation and application of the laws of thermodynamics, kinetic theory, and statistical physics.

### 21&62:750:316. INTRODUCTION TO MODERN PHYSICS (3)

*Prerequisites: 21&62:750:203,204 or 213,214.*

Interaction of radiation with matter; elementary quantum theory; atomic and nuclear physics; relativity; solid-state physics.

### 21&62:750:333. APPLICATIONS OF MATHEMATICS TO PHYSICS (3)

*Prerequisites: 21&62:750:213,214 (or 21&62:750:203,204); 21&62:640:136.*

Emphasis on applications of mathematical techniques to physical problems: infinite series, matrices, determinants, partial differentiation, multiple integrals, vector analysis, and Fourier series.

### 21&62:750:361,362. MECHANICS I,II (3,3)

*Prerequisites: 21&62:640:314; 21&62:750:315,316,333; or permission of instructor.*

Dynamics of particles and systems; theory of small oscillations and mechanical waves; rigid bodies; Lagrange and Hamilton formalism.

### 21&62:750:385,386. ELECTROMAGNETIC FIELDS AND WAVES (3,3)

*Prerequisites: 21&62:750:315,316, 333; 21&62:640:314; or permission of instructor.*

Electrostatics; magnetostatics; Maxwell's equations with applications; electrodynamics.

### 21&62:750:402. STATISTICAL MECHANICS (3)

*Prerequisites: 21&62:750:315, 361,362.*

Statistical thermodynamics, classical and quantum statistical mechanics, and elementary transport theory.

### 21&62:750:403. INTRODUCTION TO ATOMIC AND NUCLEAR PHYSICS (3)

*Prerequisites: 21&62:750:361,362, 385,386 or permission of instructor.*

Discussion of experiments that led to the quantum theory; atomic spectra; atomic structure; and nuclear physics.

### 21&62:750:404. QUANTUM MECHANICS (3)

*Prerequisites: 21&62:750:361, 385,386 or permission of instructor.*

Schrodinger equation; operators; correspondence principle; uncertainty principle; the harmonic oscillator; the hydrogen atom; elementary scattering theory; elements of matrix mechanics; perturbation theory.

### 21&62:750:406. INTRODUCTORY SOLID-STATE PHYSICS (3)

*Prerequisites: 21&62:750:361, 385,386 or permission of instructor.*

Crystallography and structure of crystals; bonding of atoms; structure and properties of metals, semiconductors, and insulators; luminescence and fluorescence of crystals, photoconductivity; solid-state devices.

### 21&62:750:407. ADVANCED PHYSICS LABORATORY I (1)

*Corequisites: 21&62:750:315,316, 333 or permission of instructor.*

Design of experiments and instrumentation techniques; data acquisition and analysis; graphic representation of experimental data; study of errors and reliability of results; AC and DC circuit theory.

### 21&62:750:408. ADVANCED PHYSICS LABORATORY II (1)

*Lab. 3 hrs. Corequisites: 21&62:750:315,316 or permission of instructor.*

Detailed examination of design concepts and measurement techniques; experiments in physical and geometric optics, coherent optics, acoustics, microwave signal propagation, and atomic and nuclear physics.



**21:750:410. PHYSICAL ELECTRONICS (2)**

*Lec. 1 hr., lab. 3 hrs. Prerequisites: 21&62:640:135,136; 21&62:750:213,214 (or 203,204).*

Development of physical models for nonlinear devices (diodes, transistors) used in modern electronic circuits; analysis of practical circuits; construction and examination of rectifiers, signal generators, basic digital circuits, and measurement systems.

**21&62:750:411. PHYSICAL OPTICS (3)**

*Prerequisites: 21&62:750:385,386 or permission of instructor.*

Electromagnetic theory of light, interference, diffraction, polarization, double refraction, absorption, scattering, dispersion, and introduction to quantum optics.

**21&62:750:461. COMPUTATIONAL METHODS IN APPLIED PHYSICS (3)**

*Prerequisite: 21&62:640:314. Pre- or corequisite: 21&62:750:404.*

General computer programming modeling methods and techniques; numerical solutions to integro-differential equations; eigenvalue problems; applications of computer-aided design and other packages.

**21&62:750:462. MATHEMATICAL METHODS OF THEORETICAL PHYSICS (3)**

*Prerequisites: 21&62:640:314; 21&62:750:361; or permission of instructor.*

Vector and tensor analysis; matrix methods; complex variables; Sturm-Liouville theory; special functions; Fourier series and integrals; integral equations; numerical solutions of differential equations.

**21&62:750:471. INTRODUCTORY RELATIVITY THEORY (3)**

*Prerequisite: Permission of instructor.*

Special Theory: simultaneity, Lorentz transformations, four vectors, and electromagnetic field transformation; General Theory: principle of equivalence, parallel displacements, and geodesics.

**21&62:750:485,486. INDIVIDUAL RESEARCH IN PHYSICS (BA,BA)**

Qualified students may undertake individual research under the supervision of a member of the department.

**21&62:750:491,492. PHYSICS SEMINAR (1,1)**

*Prerequisite: Permission of instructor.*

Group discussions of selected current topics in physics.

**21&62:750:493,494. READINGS IN PHYSICS (BA,BA)**

*Prerequisite: Permission of instructor.*

Independent study supervised by a member of the department. For qualified students who wish to investigate a specific area or topic in physics in greater depth than is normally covered elsewhere in the curriculum.

## POLITICAL SCIENCE 790

**Department of Political Science**

Hill Hall (973/353-5105)

The major and minor in political science are offered at NCAS and UC-N.

**Major Requirements**

The undergraduate political science major is designed to give students a well-rounded background in the social sciences and to prepare them for a variety of fields that require a thorough knowledge of politics. These fields include law, government service (federal, state, local), teaching, business, publishing, social service, and others. The department also offers graduate work leading to the master's degree.

The major at NCAS requires 36 credits in political science that must include:

- 21&62:790:201 American National Government
- 21&62:790:202 America and the World
- 21&62:790:203 Introduction to Comparative Politics

At least 3 additional credits in each of four fields:

- (a) American government and politics,
- (b) comparative politics, (c) international politics, and (d) political theory (21&62:790:371, 372, 375, or 376). A list of which courses fall under each field is available in the department office.

Enough additional credits in political science to make a total of 36 credits.

At least 12 additional credits from three of the following fields: anthropology, economics, history, psychology, sociology. However, no more than 3 of these credits may be in history, and those credits must be in addition to the general history credit requirement at NCAS and UC-N.

The major at UC-N is identical to the one at NCAS except that the number of credits required is 33.

**Minor Requirements**

The minor requires 21 credits in political science, which must include:

- 21&62:790:201 American National Government
- 21&62:790:203 Introduction to Comparative Politics
- 3 credits in international relations
- 3 credits in political theory

See also International Affairs and Legal Studies.

**Certificate in Public Administration and Policy Studies**

A certificate in public administration and policy studies is offered at NCAS and UC-N.

*Program Director: Frank Fischer*

The Department of Political Science administers an interdisciplinary certificate program in public administration and policy analysis. A 24-credit upper-division course of study, the certificate may be earned in conjunction with other majors, such as management, economics, sociology, and urban studies.

The certificate requirements consist of:

- 15 credits of core requirements
- 21&62:220:231 Statistical Methods (or equivalent)
- 21&62:620:318 Management Fundamentals
- 21&62:790:201 American National Government
- 21&62:790:307 Public Policy Analysis
- 21&62:790:341 Public Administration

9 approved elective credits. Recommended courses include:

- 21&62:010:443 Governmental Accounting and Auditing
- 29:522:334 Business, Government, and Society
- 29:620:325 Leading Individuals and Teams in Organizations
- 21&62:790:310 Science, Technology, and Public Policy
- 21&62:790:360 Urban Politics and Public Policy
- 21&62:790:499 Individual Study of Government

For further information, see Professor Frank Fischer, political science department.

## Courses

### *Prerequisites for Political Science Courses*

Course 21&62:790:201 is prerequisite for all other political science courses. Some courses carry additional prerequisites.

#### **21&62:790:201. AMERICAN NATIONAL GOVERNMENT (3)**

Concepts and theory regarding the policy-making process in American national government. Topics include political ideas; constitutional development and law; institutions of government; political parties, elections, and voting behavior; the significance of interest groups divided along race, gender, class, or other lines; and the role of the media and public opinion. Comparisons with other political systems and generalizations are applied to several policy issues.

#### **21&62:790:202. AMERICA AND THE WORLD (3)**

Basics of international relations (sources of national power, sovereignty, security, international law and organization, international economics), and factors (historical, political, economic, social, governmental) in the formation of American foreign policy. Extensive attention to current problems.

#### **21&62:790:203. INTRODUCTION TO COMPARATIVE POLITICS (3)**

Aspects of government and politics of several countries; introduces students to the techniques of comparative analysis; democratic, totalitarian, and developing political systems.

#### **21&62:790:301. WESTERN EUROPEAN POLITICS (3)**

Comparative study of the governments and politics of France, Germany, Great Britain, Italy, and other European countries. Emphasis on electoral systems, constitutional orders, political parties, interest groups, ethnicity, and nationalism.

#### **21&62:790:302. POLITICS OF THE EUROPEAN UNION (3)**

Analysis of the development of European integration from the immediate postwar period through the Single European Act and the Maastricht Treaty; emphasis on economic integration and monetary union, legal integration; and the question of sovereignty, intergovernmental cooperation regarding interior and justice affairs, common foreign policy, and defense.

#### **21&62:790:304. INTRODUCTION TO LAW AND LEGAL RESEARCH (3)**

The nature and function of law, the process of legal growth, the roles of judges and lawyers, and the decision-making process; the use and retrieval of law-related materials.

#### **21&62:790:305. AMERICAN STATE AND LOCAL GOVERNMENT (3)**

Organization, functions, and administration of state and local governments in the U.S.; analysis of state constitutions and city charters; the political, administrative, and judicial processes; examination of various types of intergovernmental relationships.

#### **21&62:790:306. POLITICS AND LITERATURE (3)**

*Prerequisite: Junior standing or permission of instructor.*  
Political elements in American and/or European novels and plays; consideration of works such as *The Octopus*, *In Dubious Battle*, *All the King's Men*, *Brave New World*, *1984*.

#### **21&62:790:307. PUBLIC POLICY ANALYSIS (3)**

Perspectives utilized in the analysis and evaluation of public policy making and policy results; topics include the public interest, cost-benefit allocations, normative constraints, uncertainty, and the political implications of systematic policy analysis.

#### **21&62:790:310. SCIENCE, TECHNOLOGY, AND PUBLIC POLICY (3)**

*This course fulfills the technology course requirement in the teacher certification program.*  
Study of political issues that involve science and technology, such as arms control, energy resources, environmental pollution, public health, occupational safety, and technology transfer.

#### **21&62:790:311. GOVERNMENT AND POLITICS OF LATIN AMERICA (3)**

*Prerequisite: 21&62:790:203.*

The political process in Latin America; emphasis on the role of political parties, social sectors, and special groups such as the military, labor, and students; specific problems of Latin-American political development and government economic and social policymaking in an era of modernization.

#### **21&62:790:316. GOVERNMENTS AND POLITICS OF THE FAR EAST (3)**

Governments and politics of the Far East with particular stress on China and Japan. Political culture, party systems, political development, economics, social change, foreign policies. The role of the region in world politics.

#### **21&62:790:317. INTERNATIONAL POLITICAL ECONOMY (3)**

The interdependence of political and economic structures and processes in the development and management of the modern world economy.

#### **21&62:790:318. GOVERNMENT AND POLITICS OF AFRICA (3)**

*Prerequisite: 21&62:790:203.*

Major political systems in Africa; the development of states and the modification of social and political systems; general survey of the area and focus on selected countries.

#### **21&62:790:321. WORLD POLITICS (3)**

*Prerequisite: 21&62:790:202.*

Approaches to the analysis of politics from local to global, emphasizing a range of actors, from individuals to firms to international regimes; the role of nations as distinct from states; and simultaneous processes of integration and fragmentation. Attention to the changing nature of security concerns, increasing globalization of the world economy, and the evolution of transnational norms.

#### **21&62:790:325. MUNICIPAL GOVERNMENT (3)**

Analysis of modern urban government; social and political problems of the city; types of governmental organization and the relations of the city to other units of local government.

#### **21&62:790:326. MUNICIPAL ADMINISTRATION (3)**

*Prerequisite: 21&62:790:325 or permission of instructor.*

Study of the problems of public administration in municipal government; the functional services peculiar to urban government.

#### **21&62:790:329. FOREIGN POLICY OF THE FORMER SOVIET UNION (3)**

Aims and methods of Russian foreign policy and its ideological and practical determinants as applied to the Western world, the underdeveloped countries, the former Soviet republics and Communist bloc, and international organizations.

#### **21&62:790:330. EASTERN EUROPEAN GOVERNMENTS AND POLITICS (3)**

*Prerequisite: 21&62:790:203.*

Politics and governments of East Europe, including Poland, Yugoslavia, Hungary, Czechoslovakia, Bulgaria, and East Germany; policy as the outcome of ideological and situational influences on the political needs of the regimes and the basic human needs of the people.

#### **21&62:790:333. GOVERNMENTS AND POLITICS OF THE MIDDLE EAST (3)**

*Prerequisite: 21&62:790:203.*

Political, social, economic, and cultural problems of the Middle East as a region and in selected individual countries; problems arising from the area's relations to the European powers, from the social revolution it shares with other developing areas, and from its own internal and historical situation.

**21&62:790:334. INTERNATIONAL RELATIONS OF THE MIDDLE EAST (3)**

*Prerequisite: 21&62:790:202.*

Role of international factors in influencing the development of a critical area of the world and affecting world order and stability; the Arab-Israeli dispute, great-power politics, and the role of oil.

**21&62:790:337. GOVERNMENTS AND POLITICS OF SOUTHEAST ASIA (3)**

*Prerequisite: 21&62:790:203.*

Contemporary problems of government, politics, social and economic forces, and foreign relations of the states in Southeast Asia.

**21&62:790:338. POLITICAL ECONOMY OF GOVERNMENT-BUSINESS RELATIONS (3)**

Government-business relations within advanced market economies; focus on the U.S. Empirical and normative questions raised that range from the actual to the desirable ordering of relations between public and private authorities.

**21&62:790:341,342. PUBLIC ADMINISTRATION (3,3)**

Structure and organization of administration machinery; fiscal and personnel management; methods of law enforcement; responsibility of administrators to voters, legislatures, and the courts.

**21&62:790:345. INTERNATIONAL RELATIONS OF LATIN AMERICA (3)**

*Prerequisite: 21&62:790:202.*

International relations of Latin America from independence to the present; emphasis on evolving policies of leading hemisphere governments including the U.S., as well as on patterns and problems of inter- and intra-American association since World War II.

**21&62:790:351. POLITICAL PARTIES IN THE UNITED STATES (3)**

The development of American political parties; party functions, organization, and methods; the nominating process, campaigns, and elections; money and politics.

**21&62:790:352. POLITICS, ELECTIONS, AND PUBLIC POLICY (3)**

Elections and voting behavior; political attitudes and opinions; the role of parties and interest groups in policymaking and government; party reform.

**21&62:790:356. SEX, LAW, AND PUBLIC POLICY (3)**

Political issues in the U.S. related to gender differentiation; sex-based discrimination in law and public policy, differences in political participation according to gender, ideological justifications for such differences, and political movements designed to rectify discrimination.

**21&62:790:358. PUBLIC OPINION (3)**

The formation of public opinion, opinion measurement, opinion change, and the relationships between public opinion and public policy; field work in which students prepare their own survey and conduct an opinion poll; processing and analysis of data.

**21&62:790:359. GOVERNMENT AND POLITICS OF NEW JERSEY (3)**

Organization, functions, and administration of the state government; emphasis on significant state problems.

**21&62:790:360. URBAN POLITICS AND PUBLIC POLICY (3)**

Analysis of urban policy issues; municipal public policy areas—poverty, unemployment, education, housing, health, crime, transportation, and the environment; policy as an instrument of social change.

**21&62:790:363. AMERICAN FEDERALISM (3)**

Constitutional, political, and institutional relationships among federal, state, and local governments in the U.S.; grants-in-aid, revenue sharing, interstate compacts, and intergovernmental cooperation.

**21&62:790:364. POLITICS OF MINORITY GROUPS (3)**

Tactics, goals, and impact of organized minorities in the American political arena; groups studied include blacks, Chicanos, and various ethnic groups; selected third-party movements.

**21&62:790:367. JURISPRUDENCE AND LEGAL THEORY (3)**

Major traditions in jurisprudence—positivism, natural law, and legal realism; analysis of selected theoretical questions that arise within the framework of law and law enforcement—justice, punishment, civil disobedience, human rights, the rule of law, the enforcement of morals; definition of law and of a legal system, the relationship between law and morality, and the notion of legalism as an ideology.

**21&62:790:371. EARLY POLITICAL THEORY (3)**

*Prerequisite: Junior standing or permission of instructor.*

Selected writers and doctrines in the tradition of Western thought on politics and society, from Greece through the Reformation.

**21&62:790:372. MODERN POLITICAL THEORY (3)**

*Prerequisite: Junior standing or permission of instructor.*

Selected writers and doctrines in the tradition of Western thought on politics and society, from Hobbes through Marx.

**21&62:790:375,376. AMERICAN POLITICAL THEORY (3,3)**

Leading American political thinkers, their ideas, and their contributions to the development of the American political system. *First term:* political ideas from colonial times to the 1880s. *Second term:* political thoughts in America since the Civil War.

**21&62:790:377. IDEOLOGY AND POLITICS (3)**

*Prerequisite: Junior standing or permission of instructor.*

Major ideologies involved in the political conflicts of the twentieth century; topics include mass movements, fascism, Marxism, nationalism, and democratic theory.

**21&62:790:379. GOVERNMENT AND POLITICS OF THE COMMONWEALTH OF INDEPENDENT STATES (3)**

*Prerequisite: 21&62:790:203.*

Evolution and current status of the first Communist government from a multifactor point of view; interrelationship of Marxist ideology, personality and historic influences, and the pressures of basic human needs.

**21&62:790:381. JUDICIAL PROCESS (3)**

Judicial decision making in the U.S.; the process of litigation, the recruitment of judges, the influences and limits on judicial decisions, and the impact of judicial policies within the political system; findings of recent empirical research and the application of the scientific method to the study of judicial behavior.

**21&62:790:382. ENVIRONMENTAL POLITICS AND POLICY (3)**

Examination of the environmental movement and the politics of specific issues, from air and water pollution to biodiversity and global warming. American policy is assessed from comparative perspective.

**21&62:790:385. RELIGION, POLITICS, AND PUBLIC POLICY (3)**

The influence of religious activities on politics and public policy. The influence of conservative evangelicals and fundamentalists, concerns of Muslims and Jews, efforts of religious groups to shape public policy, constitutional issues of religious liberty and church-state separation, global fundamentalism.

**21&62:790:387. INTERNATIONAL LAW (3)**

*Prerequisite: 21&62:790:202.*

Basic principles and practices governing legal relations between states; relations of law to politics explored to highlight the strengths and shortcomings of international law in dealing with contemporary world problems.



**21&62:790:395. CONTEMPORARY AMERICAN FOREIGN POLICY (3)**

*Prerequisite: 21&62:790:321 or permission of instructor.*

Analysis of the formulation and administration of American foreign policy; political, economic, and social forces influencing the decision-making process; the background, alternatives, and principal issues since World War II.

**21&62:790:397. WASHINGTON INTERNSHIP (BA)**

**21&62:790:401,402. AMERICAN CONSTITUTIONAL LAW AND POLITICS (3,3)**

The decision-making and policymaking roles of the Supreme Court in selected areas, including the executive and legislative branches, federal-state relations, the economy, reapportionment, welfare, civil liberties, and civil rights.

**21&62:790:405. THE UNITED STATES AND ASIA (3)**

*Prerequisite: 21&62:790:321 or permission of instructor.*

The relations and role that the U.S. has played in Asia, through examination of topics such as the characteristics of revolution and modernization in Asia, the U.S. Asian policy, and the Asian response to the U.S.; present-day problems of American involvement.

**21&62:790:408. SEMINAR IN POLITICAL PHILOSOPHY (3)**

*Open only to juniors and seniors.*

Joint discussion and analysis of selected readings in the literature of political philosophy.

**21&62:790:409. LAW AND PUBLIC POLICY (3)**

Impact of law on the political process and public policy in selected areas such as legislation, civil rights, civil liberties, and constitutional interpretation; the use of law as an instrument of social change.

**21&62:790:415. SEMINAR IN POLITICAL DEVELOPMENT (3)**

*Open only to juniors and seniors.*

Problems encountered by developing nations as they seek to become viable, independent societies; problems of political and social modernization.

**21&62:790:417. PROBLEMS IN INTERNATIONAL RELATIONS (3)**

*Prerequisite: 21&62:790:321.*

Focus on specific issues in global politics of current interest and importance.

**21&62:790:418. SEMINAR IN INTERNATIONAL RELATIONS (3)**

*Open only to juniors and seniors. Prerequisite: 21&62:790:321.*

Analysis, research, and writing on selected topics of enduring and/or major contemporary interest in the field of international relations. Students normally explore the utility of theory in the field as a tool for the analysis of foreign policymaking or the evolution of particular international issues.

**21&62:790:420. COMPARATIVE FOREIGN POLICIES (3)**

Study, from the perspective of several states, of the intrasocietal and extrasocietal factors that shape the external behavior of states; states represent major powers, all regions of the world, collectivist and noncollectivist political systems, new states, and those with a longer tradition of participation in world affairs.

**21&62:790:421. THEORY AND PRACTICE OF MARXISM (3)**

Transformation of Marxist theory due to the practical exigencies of sociopolitical conditions; analysis of Marx's writings and selected theorists of the Second and Third Internationals; relations between Leninism and Stalinism; role of Marxism today.

**21&62:790:431. PUBLIC ADMINISTRATION AND ORGANIZATIONAL BEHAVIOR (3)**

Theoretical perspectives on administrative decision making, budgeting, labor relations, and organizational politics in the public context.

**21&62:790:435. THE AMERICAN PRESIDENCY (3)**

The dynamics of the presidency: the president's powers and how they are used; the executive's relations with Congress, the court, and the public; various presidents' conceptions of their role.

**21&62:790:436. LEGISLATURES AND THE LEGISLATIVE PROCESS (3)**

Survey of the organization of the legislative power; working facilities; principles, procedures, and problems of statute making; the legislature as arbiter of conflicting interests; the relationship between the legislature and the executive.

**21&62:790:441. CIVIL LIBERTIES (3)**

*Prerequisite: 21&62:790:401 or 402 or permission of instructor.*

Ways that the American political system balances individual liberty against the necessity to maintain a stable society; consideration of a few problems, e.g., censorship, racial equality, and church and state; role of the federal courts.

**21&62:790:446. COMPARATIVE POLITICAL PARTIES (3)**

*Prerequisites: 21&62:790:201, 301; or permission of instructor.*

Comparative study of political parties and interest groups in Canada, Great Britain, and the U.S.; evaluation of different approaches to comparative analysis.

**21&62:790:450. CHINESE FOREIGN POLICY (3)**

Study of Chinese foreign policy through the examination of the tradition of foreign relations; ideology; strategies; capabilities; relations with the West, the former Communist nations, and the third world; China's role in international organization.

**21&62:790:452. SEMINAR IN LAW AND SOCIAL CHANGE (3)**

*Open only to juniors and seniors.*

Analysis of topics relating to law and social and political change drawn from legal history, jurisprudence, legal systems and institutions, law and public policy, and law and politics.

**21&62:790:454. SEMINAR IN PROBLEMS OF AMERICAN GOVERNMENT (3)**

*Open only to juniors and seniors.*

Selected problems of American government with respect to labor, business, agriculture, social welfare, and governmental reform.

**21&62:790:457. SEMINAR IN POLITICAL PARTIES (3)**

*Open only to juniors and seniors.*

Selected problems of political parties and political behavior in the U.S.

**21&62:790:459. SEMINAR IN PROBLEMS OF MUNICIPAL GOVERNMENT (3)**

*Open only to juniors and seniors.*

Problems of municipal government, including the various functional activities and intergovernmental relationships of present concern.

**21&62:790:460,461. TOPICS IN POLITICAL SCIENCE (3,3)**

*Open only to juniors and seniors.*

Advanced study and research on a political problem that either is not covered in the curriculum or that deserves more in-depth treatment than is possible in a regular course.

**21&62:790:462. SEMINAR IN POLITICAL IDEAS AND INSTITUTIONS (3)**

*Open only to juniors and seniors.*

Problems in the theory and practice of modern government.

**21&62:790:467. PSYCHOLOGY AND POLITICS (3)**

The psychological roots of political behavior; theoretical formulations and applied studies; analyses of leaders (revolutionary leaders, American presidents, and movements); political implications of personality theories.

**21&62:790:485. SEMINAR IN PROBLEMS OF STATE GOVERNMENT (3)**

*Open only to juniors and seniors.*

Problems of state government, including administrative reorganization, legislative and judicial reform, intergovernmental relationships, and functional activities performed by the state that are of present concern.



**21&62:790:491. RESEARCH METHODS IN POLITICAL SCIENCE (3)**  
Based on the assumption that the method of observation often creates the phenomena or influences the conclusions, the student uses a number of political science methodologies to study one subject; methodological approaches may include survey analysis of public opinion including questionnaire construction and validation, use of computer and quantitative methods, content analysis, planning, programming, and budgeting (PPB), decision-making theory, game theory, and communications theory.

**21&62:790:492. READINGS IN POLITICAL SCIENCE (BA)**

*Prerequisite: Permission of instructor.*  
Closely supervised exploration of political subjects through the outstanding readings in the field; a tutorial relationship with the instructor; credits fixed according to the outline of work adopted by student and instructor.

**21&62:790:494. WASHINGTON RESEARCH (6)**

**21&62:790:495,496. SENIOR HONORS SEMINAR (3,3)**

*Open to seniors by department invitation. Intended for candidates for special honors in political science.*  
Readings, research, and critical writing in selected fields of political science.

**21&62:790:497,498. INTERNSHIP IN POLITICAL SCIENCE (3,3)**

*Prerequisites: 21&62:790:201, 6 additional credits in political science, junior or senior standing, department approval, and acceptance by employing agency.*  
Placement in an appropriate governmental or other agency of political organization for eight to ten hours work per week; a log on each working day's activities and a paper to be agreed upon by the intern and the academic supervisor are required.

**21&62:790:499. INDIVIDUAL STUDY OF GOVERNMENT (BA)**

*Prerequisites: Permission of department chairperson and instructor.*  
Individual study and research on selected problems in political science.

## PORTUGUESE 810

*Department of Classical and Modern Languages and Literatures  
Conklin Hall (973/353-5498)*

**21&62:810:101-102. ELEMENTARY PORTUGUESE (3,3)**

*Not open to students who have had two or more years of secondary school Portuguese or are near-native speakers of the language. These students must take a placement test in the department for proper advisement. Both terms must be completed to receive credit.*  
Fundamentals of grammar; drill in speaking and writing. A minimum total of ten hours of language laboratory work per term is required of all students in NCAS elementary language courses and is recommended for UC-N and NJIT students.

**21&62:810:131,132. INTERMEDIATE PORTUGUESE (3,3)**

*After examination, students may be placed in a section for nonnative or native speakers. Successful completion of both terms may be accredited for a major/minor option.*  
Grammar review and vocabulary expansion. Continued development of speaking and reading skills; intensive practice in reading and composition based on short literary and journalistic texts.

**21&62:810:207. INTRODUCTION TO PORTUGUESE LITERATURE (3)**

*Prerequisites: 21&62:810:131,132 or demonstrable reading/writing knowledge of the language. Fulfills literature requirement. Conducted in Portuguese.*  
Survey of Portuguese literature, with emphasis on reading and discussion of literary texts representative of significant literary movements and authors of Portugal.

**21&62:810:208. INTRODUCTION TO BRAZILIAN LITERATURE (3)**

*Prerequisites: 21&62:810:131,132 or demonstrable reading/writing knowledge of the language. Conducted in Portuguese.*  
Survey of Brazilian literature, with emphasis on reading and discussion of literary texts representative of significant literary movements and authors of Brazil.

**21&62:810:311. PORTUGUESE LITERATURE IN ENGLISH TRANSLATION (3)**

*Fulfills literature requirement.*  
Reading and discussion of major authors and texts representative of Portugal's rich literary tradition. Emphasis on the epic production of de Camoes and on nineteenth-century romantic and realism traditions.

**21&62:810:315. PORTUGUESE FOR BUSINESS AND COMMERCE (3)**

*Open to students who can demonstrate adequate reading/writing/conversational skills at the level of 21&62:810:132 Intermediate Portuguese. This includes NJIT students and students from graduate programs and NCAS. Conducted in Portuguese.*  
Intensive study of business and commercial Portuguese. Emphasis on practical business terminology and procedures used in business letters and documents, banking, trade, export and import, stock market, and modern-day global economic institutions. Familiarization with Portuguese business practices and cultural differences.

**21&62:810:318. LUSO-BRAZILIAN LITERATURE IN ENGLISH TRANSLATION (3)**

*Fulfills literature requirement.*  
Reading and discussion of literary works representative of the different literary trends, movements, and authors of the Portuguese-speaking world (Angola, Mozambique, the Madeiran and the Cape islands), with emphasis on Brazil. The best poets and fiction writers of the twentieth century explored.

**21&62:810:342,343. INTRODUCTION TO PORTUGUESE AND BRAZILIAN CIVILIZATION AND CULTURE (3,3)**

*Conducted in Portuguese.*  
Discussion of significant historical, social, and cultural trends in the Portuguese-speaking world. The first term emphasizes Portugal, Portuguese Africa, and the Portuguese in the United States; second term focuses on Brazil.

**21&62:810:440,441. TOPICS IN PORTUGUESE AND BRAZILIAN CULTURE (3,3)**

*Conducted in Portuguese and English.*  
Explores significant themes, topics, concepts, movements, trends, and complex issues with regard to the diverse Portuguese and Brazilian societies and cultures. The first term deals with Portugal; the second with Brazil and the Luso-phone world.

These courses are taught alternatively through the fall, spring terms and the Summer Session. Literature courses fulfill the college's literature requirement; elementary and intermediate courses may be used to fulfill the foreign language requirement. Intermediate courses may be offered for nonnative and native speakers. Literature in translation courses (taught in English) may be used as a partial requirement for a major in another foreign language. All these other courses related to Portuguese studies offered by other departments can be used to fulfill requirements in an Interdisciplinary major (558) and for the International Affairs minor (551). Students should procure the approval of the chair of the Department of Classical and Modern Languages and Literatures before registering for courses intended for any of these programs.

## PSYCHOLOGY 830

### Department of Psychology

Smith Hall (973/353-5440)

The major and minor in psychology are offered at NCAS and UC-N.

### Major Requirements

Psychology is the study of the behavior of the individual. It is a multifaceted discipline ranging from the study of the biological basis of behavior to the study of the individual in a social context.

A minimum of 38 credits for the major in psychology is required. The credits must include:

#### Core Courses

- 21&62:830:209 Principles of Psychology (first or sophomore year)
- 21&62:830:301 Statistical Methods for the Cognitive and Behavioral Sciences (sophomore or junior year)
- 21&62:830:302 Experimental Methods for the Cognitive and Behavioral Sciences
- 21&62:830:423 History and Modern Viewpoints in Psychology

#### Area Requirements

- 21&62:830:304 Cognitive Processes *or* 21&62:830:330 Psychology of Learning *or* 21&62:830:372 Perception
- 21&62:830:323 Child Psychology *or* 21&62:830:354 The Psychology of Adulthood and Aging
- 21&62:830:363 Abnormal Psychology *or* 21&62:830:371 Psychology of Personality
- 21&62:830:481 Comparative Psychology *or* 21&62:830:484 Physiological Psychology

#### Electives

12 additional elective credits in psychology.

A grade-point average of 2.5 or better in the major is required.

### Interdisciplinary Option in Psychology and Sociology

As an alternative to the psychology major, students may select an interdisciplinary option in psychology and sociology that is designed to give the student insight into the interaction between individual behavior and the social setting in which it occurs.

The requirements for the interdisciplinary option include the following:

A grade-point average of 2.5 or better in the major. A minimum of 30 credits in psychology and sociology courses that must include:

- 21&62:830:209 Principles of Psychology
- 21&62:830:301 Statistical Methods for the Cognitive and Behavioral Sciences *and* 21&62:830:302 Experimental Methods for the Cognitive and Behavioral Sciences *or* 21&62:920:301-302 Introduction to Social Research I,II
- 21&62:830:423 History and Modern Viewpoints in Psychology

- 21&62:920:201,202 Sociology I,II
- 21&62:920:409 Classical Sociological Theory *or* 21&62:920:415 Contemporary Sociological Theory

Additional elective courses are arranged in consultation with the departmental adviser. Students interested in pursuing this option should contact the chairpersons of the Department of Psychology and the Department of Anthropology, Sociology, and Criminal Justice, who will arrange a written contract specifying the requirements for the interdisciplinary option.

### Minor Requirements

The psychology minor requires 18-21 credits. Students are required to enroll in 21&62:830:209 Principles of Psychology. Other courses in the department are chosen in a conference between the student and department chairperson. Written contracts specifying the requirements for the minor are drawn.

### Courses

#### 21&62:830:209. PRINCIPLES OF PSYCHOLOGY (3)

Human behavior and mental functions examined from a scientific point of view; biological foundations of behavior; perception—how we organize our world; learning and forgetting; frustration and conflict; the formation of personality; some applications of psychological principles.

#### 21&62:830:301. STATISTICAL METHODS FOR THE COGNITIVE AND BEHAVIORAL SCIENCES (4)

*Prerequisite:* 21&62:640:113 *or* equivalent.

Basic statistical methods in the psychological sciences, starting with basic probability, descriptive statistics, and inferential statistics. Methods are put in the context of basic experimental research in the cognitive and behavioral sciences. Includes such methods as z-tests, t-tests, ANOVA, regression and correlation.

#### 21&62:830:302. EXPERIMENTAL METHODS FOR THE COGNITIVE AND BEHAVIORAL SCIENCES (4)

*Prerequisite:* 21&62:830:301.

Basic methods and paradigms in the cognitive and behavioral sciences. Research from areas of psychology in psychophysics, learning, memory, and perception are used to illustrate basic paradigms used in the cognitive and behavioral sciences. Students conduct experiments, analyze data, and write reports in standard psychology formats.

#### 21&62:830:304. COGNITIVE PROCESSES (3)

*Prerequisite:* 21&62:830:209.

Introduces the study of human cognition. Topics include perception, attention, memory, knowledge representation, language, problem solving, thinking, and reasoning. How is the world represented and what are the processes underlying those representations? Considers the real-world implications of laboratory findings.

#### 21&62:830:323. CHILD PSYCHOLOGY (3)

*Prerequisite:* 21&62:830:209 *or* permission of instructor.

Child behavior and development; motor abilities, language, intelligence, social and emotional behavior and attitudes; prevention of maladjustment; relevant research findings; practical questions of child care and child rearing.

#### 21&62:830:327. COGNITIVE DEVELOPMENT (3)

*Prerequisite:* 21&62:830:209. *Intended for psychology majors.*

Development of human capacities, with emphasis on the growth patterns of perception and thought.

**21&62:830:330. PSYCHOLOGY OF LEARNING (3)**

*Prerequisite: 21&62:830:209.*

Current thought concerning the learning process; historical review of learning theory from Pavlov to Hull and Tolman; examination of the recent literature, chiefly in the areas of human learning and memory.

**21&62:830:335. SOCIAL PSYCHOLOGY (3)**

*Prerequisite: 21&62:830:209.*

Psychological study of the individual's social interaction; theories of interaction and the empirical research employed in the investigation of topics such as attitude formation and change, group structure and process, motivation, learning, and perception in a social context.

**21&62:830:346. PSYCHOLOGY OF LANGUAGE (3)**

*Prerequisites: 21&62:830:209 and either 304, 330, or 372.*

Research investigations of language behavior as an aspect of intellectual functioning; comparative study of human and animal communication; biological and neurological determinants of language; innate vs. acquired mechanisms; information theory; encoding and decoding phonological skills; language models and theories evaluated, including mathematical models, learning theorists (e.g., Skinner, Osgood), and the transformational linguistics of Chomsky.

**21&62:830:354. THE PSYCHOLOGY OF ADULTHOOD AND AGING (3)**

*Prerequisite: 21&62:830:209. Recommended: 21&62:830:323.*

Psychological, biological, and cultural aspects of the life cycle from young adulthood to the later years; becoming a person and becoming partners; experimenting with life styles; deciding about children and how to relate to them; middle years—changes, crises, new opportunities; retirement and leisure compared with the work ethic; facts and fallacies about old age; death and how we deal with it.

**21&62:830:358. INTRODUCTION TO CLINICAL PSYCHOLOGY (3)**

*Prerequisites: 21&62:830:209 and either 363 or 371.*

Short stories, plays, projective testing, paintings, and material from clinical interviews to introduce normal, creative, and pathological personalities; increases sensitivity to the situational, psychological, and historical determinants of human personality.

**21&62:830:363. ABNORMAL PSYCHOLOGY (3)**

*Prerequisite: 21&62:830:209.*

Psychopathologies, their probable causes, and usual behavioral manifestations; theories of pathology and research techniques employed in the investigation of abnormality.

**21&62:830:369,370. FIELDWORK IN PSYCHOLOGY (3,3)**

*Prerequisites: 21&62:830:209, junior or senior standing, and permission of instructor.*

Fieldwork at accredited agencies under the supervision of a departmental faculty member and an agency supervisor. Consult the advisers to determine the number of hours required for participation at an agency; advisers have a current listing of accredited agencies participating in this program.

**21&62:830:371. PSYCHOLOGY OF PERSONALITY (3)**

*Prerequisite: 21&62:830:209.*

Major theoretical and experimental contributions to the understanding of normal personality and its development; relative adequacy of different theories in dealing with specific empirical data.

**21&62:830:372. PERCEPTION (3)**

*Prerequisite: 21&62:830:209.*

Classical problems of perception—the constancies, form perception and the illusions, the perception of movement, neutral color, direction, and orientation; important theoretical issues of perception.

**21&62:830:373. PSYCHOLOGY OF WOMEN (3)**

*Prerequisites: 21&62:830:209 and either 323 or 354.*

Psychological roles of women in the human situation, traditional and contemporary; functions fulfilled by, and problems inherent in, the subordination of Eve to Adam; wider social-psychological implications of the new feminism; novels, films, and journalistic, social-philosophic, psychoanalytic, and anthropological materials.

**21&62:830:378. ADVANCED ABNORMAL PSYCHOLOGY (3)**

*Prerequisites: 21&62:830:363 and permission of instructor.*

Current theory and research in abnormal psychology; psychological and biochemical theories of psychopathology; examination of methods and findings of relevant experimental data.

**21&62:830:409. SPECIAL TOPICS IN PSYCHOLOGY:  
HUMAN SEXUALITY (3)**

A broad-spectrum course that approaches the study of human sexuality from a psychobiological perspective. All aspects of sexuality across the life span and between cultures are explored, with emphasis on current issues relating to sexuality.

**21&62:830:423. HISTORY AND MODERN VIEWPOINTS  
IN PSYCHOLOGY (3)**

*Prerequisite: Junior or senior standing in the major.*

Critical study, with historical background, of several schools of psychological thought and theory; behaviorism and learning theory, psychoanalysis, Gestalt psychology, cognitive psychology, existentialism, and Russian psychology.

**21&62:830:477. BIOPSYCHOLOGY OF PARENTAL CARE (3)**

Exploring the evolution of the biological and psychological basis of parental care and parental behavior among animals—how the mode of reproduction sets the stage for different patterns of parental care, and how these are adapted to the ecological niche of the species. Of particular interest will be the evolution of mechanisms mediating behavioral interactions between parents and offspring, with special reference to the mammals, including humans.

**21&62:830:481. COMPARATIVE PSYCHOLOGY (3)**

*Prerequisite: 21&62:830:209 or 21&62:120:102.*

Comparative study of animal behavior; organization of behavior, and the relations between structure, physiology, and behavior at representative levels in the animal kingdom; comparative ontogeny of behavior and the question of learned and unlearned components; the evolution of behavior in the formation of species.

**21&62:830:484. PHYSIOLOGICAL PSYCHOLOGY (3)**

*Prerequisite: 21&62:830:209 or 21&62:120:102.*

Physiological basis of behavior; basic structure and function of the nervous system; physiological basis of motivation and emotions; relations between hormones and behavior; physiological aspects of perception and learning; organization of the cerebral cortex; psychosomatics.

**21&62:830:491,492. RESEARCH IN PSYCHOLOGY (BA,BA)**

*Prerequisites: Junior or senior standing and permission of instructor or department chairperson.*

Design and execution of an original research project under supervision; project may be a psychological experiment, an attitude survey, or a library study; learning how to do research by means of firsthand experience.

**21&62:830:493,494. INDIVIDUAL STUDY IN PSYCHOLOGY (BA,BA)**

*Prerequisites: Junior or senior standing and permission of instructor.*

Exploration of contemporary and classical problems in psychology through planned readings and discussions with a faculty member; emphasis on going beyond textbooks and learning to think about psychological issues in depth. Choice of participating in either a seminar class or reading independently and preparing a written report.



## Other Related Courses

**21&62:070:305. CULTURE AND PERSONALITY (3)**  
*See Anthropology 070.*

**21&62:070:340. COMPARATIVE ROLES OF WOMEN (3)**  
*See Anthropology 070.*

**21&62:300:381. EDUCATIONAL PSYCHOLOGY AND  
SOPHOMORE PRACTICUM (3)**  
*See Education 300.*

Students who major in psychology may enroll in this course for elective credit.

**21&62:730:342. THEORIES OF KNOWLEDGE (3)**  
*See Philosophy 730.*

**21&62:920:315. SELF AND SOCIETY (3)**  
*See Sociology 920.*

**21&62:920:337. SOCIOLOGY OF SEX AND ROLES (3)**  
*See Sociology 920.*

**21&62:920:357. SOCIAL INTERACTION (3)**  
*See Sociology 920.*

## PUERTO RICAN STUDIES 836

***Puerto Rican Studies Program***  
*Conklin Hall (973/353-1052)*

The Puerto Rican studies major and minor are offered at NCAS.

The Puerto Rican studies program at NCAS offers an interdisciplinary and cross-cultural major and minor in order to provide an opportunity for Rutgers students to understand the Puerto Rican community of New Jersey, the United States, and Puerto Rico. To achieve this goal, the courses adopt a comparative approach, making sure to place discussion of Puerto Rican topics in the broader context of the Caribbean and Latin America, and in terms of the complex relationship that has existed since 1898 between Puerto Rico and the United States. Except for the two literature courses, which are offered in Spanish, all other courses are taught in English. Students with interests in the fields of law, medicine, social work, and criminal justice, among others, or in careers in the public sector find many courses very useful.

### Major Requirements

Thirty credits are required for the major. Language training in Spanish to meet course prerequisites does not count toward the major.

- The required core courses include 18 credits as follows:
  - 21&62:014:301 African Cultural Retentions in the Americas
  - 21&62:510:317 History of the Caribbean
  - 21&62:510:323,324 History of Puerto Rico
  - 21:940:270 Puerto Rican Literature
  - 21:940:324 Puerto Rican Narrative
- The elective courses include 12 credits that are selected under advisement:
  - 21&62:070:352 Peoples and Cultures of Latin America
  - 21&62:510:207,208 History of Latin America
  - 21&62:510:364 Contemporary Issues in Puerto Rican History
  - 21&62:790:311,312 Government and Politics of Latin America

- 21:836:488 Independent Study in Puerto Rican Topics
- 21:940:304 Race, Slavery, and the Black Experience in Spanish-American Literature
- 21:940:383 or 384 Ibero-American Thought

### Minor Requirements

- Four of the following courses are required for the minor:
  - 21&62:510:317 History of the Caribbean
  - 21&62:510:323 or 324 History of Puerto Rico
  - 21:836:488 Independent Study in Puerto Rican Topics
  - 21:940:270 Puerto Rican Literature or 21:940:324 Puerto Rican Narrative
- The remaining 6 credits may be selected from the following courses:
  - 21&62:014:301 African Cultural Retentions in the Americas
  - 21&62:070:352 Peoples and Cultures of Latin America
  - 21&62:510:207 or 208 History of Latin America
  - 21&62:510:364 Contemporary Issues in Puerto Rican History
  - 21&62:790:311 or 312 Government and Politics of Latin America
  - 21:940:304 Race, Slavery, and the Black Experience in Spanish-American Literature
  - 21:940:383 or 384 Ibero-American Thought

### Course

**21:836:488. INDEPENDENT STUDY IN PUERTO RICAN TOPICS (3)**  
Independent reading or research under the direction of a faculty member affiliated with the program.

### Other Related Courses

**21&62:014:301. AFRICAN CULTURAL RETENTIONS  
IN THE AMERICAS (3)**  
*See Afro-American and African Studies 014.*

**21&62:510:207,208. HISTORY OF LATIN AMERICA (3,3)**  
*See History 510.*

**21&62:510:317. HISTORY OF THE CARIBBEAN (3)**  
*See History 510.*

**21&62:510:323,324. HISTORY OF PUERTO RICO (3,3)**  
*See History 510.*

**21&62:510:364. CONTEMPORARY ISSUES IN  
PUERTO RICAN HISTORY (3)**  
*See History 510.*

**21:940:270. PUERTO RICAN LITERATURE (3)**  
*See Spanish 940.*

**21:940:324. PUERTO RICAN NARRATIVE (3)**  
*See Spanish 940.*

**21:940:383 OR 384. IBERO-AMERICAN THOUGHT (3)**  
*See Spanish 940.*

## RELIGIOUS STUDIES 840 (See courses under Philosophy 730)



## SCIENCE, TECHNOLOGY, AND SOCIETY 880

The major and minor in science, technology, and society are offered at NCAS.

*Program Coordinator: Gary Roth  
Hill Hall (973/353-5001)*

Science, technology, and society, a collaborative program with the New Jersey Institute of Technology (NJIT), explores the foundations and impacts of science and technology in the modern world. The bachelor's degree gives the student a global, multicultural, and environmental perspective, and prepares the student to integrate the scientific and technical disciplines with the humanities and social sciences. Through its cross-disciplinary perspective, the program in science, technology, and society explores the relations between the world of the scientist, the engineer, the politician, and the citizen.

Science, technology, and society graduates find employment in law, government, corporate planning, science policy, urban development, transportation studies, technology assessment, technical communications, and environmental policy and planning.

### Major Requirements

All students majoring in science, technology, and society are required to fulfill the core requirements (24 credits) and concentration requirements (15 credits). Additional requirements in related disciplines may reach 36 credits. All courses beginning with the prefix "STS" are offered only at NJIT.

### Core Courses

The core courses introduce students to the connections between civilization, technology, and the global environment. Individual core courses focus on historical and cultural foundations, basic ideas and values, dominant institutions, environmental viewpoints, policy developments, and sustainable development.

The senior seminar and project is the capstone course for science, technology, and society majors. Students work closely with the senior seminar director and a faculty adviser to identify a topic, investigate it in depth, and compose a senior thesis. Seniors also take the lead in monthly faculty-student colloquia on major technological, scientific, and environmental issues.

21&62:512:395,396 History of Science or His 485-486

History of Technology (at NJIT)

21&62:790:310 Science, Technology, and Public Policy  
STS 308 Technology and Global Development:

Introduction to STS

STS 310 Technology and Human Values

STS 490-491 Senior Seminar and Project

### Requirements in Related Disciplines

In order to develop competence in science, technology, and society, students must have an adequate background in quantitative reasoning, social sciences, and the principles of science and technology.

1. 9 credits in calculus, computer science, statistics. (These courses may be used to fulfill the general college requirement.)
2. 9 credits in economics, political science, sociology. (These courses may be used to fulfill the general college requirement.)

3. 19 credits in science and technology. Courses selected should either fulfill the requirements for a minor in one of the science or technology disciplines, or be a coherent group of courses related to the student's area of interest, worked out with an adviser.

### Concentration Requirement

Fulfilling the concentration requirement allows science, technology, and society majors to specialize in areas such as history and philosophy of science, environmental studies, and science and technology policy studies. Courses must be selected in consultation with a faculty adviser and should comprise a coherent combination that focuses on some area of study.

The following courses are available for completing the science, technology, and society concentration requirement:

#### American Studies

21&62:050:305 Nuclear Weapons in America

21:050:395 Nuclear War and Literature

21&62:050:403,404 Technology and Culture in America

#### Anthropology

21&62:070:309 Medical Anthropology

21&62:070:350 Cultural Ecology

#### Biology

21&62:120:204 Economic Botany

21&62:120:205 Environmental Issues

#### Chemistry

21&62:160:101,102 World of Chemistry

#### Classics

21&62:190:310 Ancient Technology

21:190:312 Ancient Warfare

#### Criminal Justice

62:202:203 Scientific Applications in Criminal Justice

#### Economics

21&62:220:316 Economics of Health

#### English

21&62:350:377 Science Fiction, Technology, and Society

21&62:350:379 Computers and Literature

#### Geology

21&62:460:215 The Physical Environment and Man

#### History

21&62:510:321 Military History of the Western World

21&62:512:395,396 History of Science

#### Philosophy

21&62:730:225 Philosophy of Science

#### Physics

21&62:750:202 Physics as a Liberal Art

#### Political Science

21&62:790:310 Science, Technology, and Public Policy

#### Psychology

21&62:830:423 History and Modern Viewpoints  
in Psychology

#### Science, Technology, and Society

21&62:880:331,332 Topics in Science, Technology,  
and Society

#### Sociology

21&62:920:311 Sociology of Industry

21&62:920:318 Sociology of Health Care

21&62:920:338 Sociology of Death and Dying

21&62:920:475 Sociology of Psychotherapies in America

## Minor Requirements

All courses in Group I are required of each student minoring in science, technology, and society.

*Science majors* must take two courses from Group II.

*Nonscience majors* must take two courses from Group III.

### Group I

- 21&62:512:395,396 History of Science *or* HIS 485-486  
History of Technology (at NJIT)
- 21&62:790:310 Science, Technology, and Public Policy  
STS 308 Technology and Global Development:  
Introduction to STS
- STS 310 Technology and Human Values

### Group II

- 21&62:050:403,404 Technology and Culture in America
- 21&62:730:225 Philosophy of Science
- 21&62:880:331,332 Topics in Science, Technology,  
and Society
- STS 304 Writing about Science, Technology,  
and Society
- STS 316 Mass Communications, Technology,  
and Culture

### Group III

- 21&62:120:204 Economic Botany
- 21&62:120:205 Environmental Issues
- 21&62:160:101,102 World of Chemistry
- 21&62:160:215 The Physical Environment and Man
- 21&62:750:202 Physics as a Liberal Art
- 21&62:880:331,332 Topics in Science, Technology,  
and Society

## Courses

### 21&62:880:331,332. TOPICS IN SCIENCE, TECHNOLOGY, AND SOCIETY (3,3)

*Fulfills the technology course requirement in the teacher certification program.*  
An interdisciplinary approach to issues that face the world,  
examined from the perspectives of the natural sciences, the social  
sciences, and the humanities.

## SLAVIC 861 (Russian 860)

*Department of Classical and Modern Languages and Literatures*  
Conklin Hall (973/353-5498)

*Program Director:* Myroslava T. Znayenko

The Slavic major and minor are offered at NCAS.

The department offers major programs in ancient Mediterranean civilizations (Classics 190, Greek 490, Hebraic Studies 500, Latin 580), French 420, German 470, Italian 560, Slavic 860, and Spanish 940. Students majoring in one language area may concurrently major or minor in another language area. The department also participates in the interdisciplinary major, the minor in International Affairs, the Rutgers Study Abroad Program, and offers courses in Portuguese.

## Major Requirements

There are two concentrations available to Slavic majors:  
(a) Slavic languages and literatures and (b) Slavic languages  
and civilizations. Majors in Slavic develop, with the  
assistance of a faculty adviser, a coherent course of study

that meets the needs and special qualifications of the  
student. Each concentration requires the approval of the  
program director.

### *Slavic Languages and Literatures*

The requirements for a major in Slavic languages and  
literatures are the following:

1. 30 credits in Slavic languages and literatures, which  
may include the intermediate courses 21:860:131,132  
Intermediate Russian (or equivalent preparation as  
demonstrated by proficiency examination). Any of the  
Slavic language and literature courses numbered 200  
or higher may be taken to satisfy this requirement.
2. 9 credits in other courses within the department, at least  
3 of which must be in literature in the original language  
or in translation.
3. 6 credits from one or more of the following as approved  
by an adviser: English literature courses numbered higher  
than 215, 216, philosophy, music history, art history.

### *Slavic Languages and Civilizations*

The Slavic languages and civilizations concentration is an  
interdisciplinary Slavic and East European program offered  
by the Department of Classical and Modern Languages and  
Literatures in conjunction with the Department of History  
and the Department of Political Science. This concentration  
offers an introduction to the countries of Eastern Europe.  
The major requires proficiency in at least one of the Slavic  
or East European languages and intensive study of the  
literature, history, economy, and politics of Eastern Europe.  
Students with a strong interest in Polish, Russian, and  
Ukrainian are especially encouraged to participate.

Forty-two credits are required in Slavic area courses  
to complete the major. The following course of study  
is required:

1. 21 credits in Slavic languages and literatures, which  
may include 21:860:131,132 Intermediate Russian (or  
equivalent preparation as demonstrated by proficiency  
examination in Russian or another East European  
language). Any of the Slavic language and literature  
courses numbered 200 or higher may be taken to satisfy  
this requirement.
2. 12 credits in history selected from among the  
following courses:  
21&62:510:366 History of Poland  
21&62:510:367,368 History of Russia  
21&62:510:369 Modern Eastern Europe  
21&62:510:370 History of Modern Ukraine
3. 9 credits in political science and/or economics and/or  
business courses dealing with Eastern Europe to be  
selected with the approval of the student's adviser.

## Minor Requirements

A minor in Slavic languages and literatures requires  
18 credits in Slavic languages and literatures, which may  
include 21:860:131,132 Intermediate Russian (or equivalent  
preparation as demonstrated by proficiency examinations  
in Russian or other East European languages). Any of the  
Slavic language and literature courses numbered 200 or  
higher may be taken to satisfy this requirement.

A minor in Slavic languages and civilizations requires  
21 credits, which may include 21:860:131,132 Intermediate  
Russian (or equivalent preparation as demonstrated by  
proficiency examinations in Russian or other East European  
languages), any of the Slavic language and literature

courses numbered 200 or higher, and at least two courses in either history, politics, business, or economics of Eastern Europe. Each minor concentration requires the approval of the program director.

## Courses (Russian 860)

### 21:860:101-102. ELEMENTARY RUSSIAN (3,3)

*Intended for students with little or no previous knowledge of Russian. Both terms must be completed to receive credit.*

Training in pronunciation, grammar, simple composition, and reading of elementary prose.

### 21:860:131,132. INTERMEDIATE RUSSIAN (3,3)

*Prerequisite: 21:860:102 or equivalent as determined by a placement examination.*

Grammar review and selected reading in literature and other cultural areas.

### 21:860:203. RUSSIAN GRAMMAR AND COMPOSITION (3)

Advanced grammar review, composition, and diction.

### 21:860:204. RUSSIAN COMPOSITION AND CONVERSATION (3)

*Prerequisite: 21:860:203 or permission of instructor.*

Intensive practice in oral and written Russian.

### 21:860:205,206. INTRODUCTION TO RUSSIAN LITERATURE (3,3)

*Prerequisite: 21:860:132 or equivalent.*

Russian literary history; some major authors are analyzed; readings in the original language.

### 21:860:269. DOSTOEVSKY AND TOLSTOY IN ENGLISH TRANSLATION (3)

A multidimensional examination of the principal works in the context of the historical, intellectual, and aesthetic forces and influences of the nineteenth century.

### 21:860:307. ADVANCED RUSSIAN GRAMMAR, CONVERSATION, AND COMPOSITION (3)

*Prerequisites: 21:860:203, 204.*

For prospective teachers and others who wish to acquire more fluency in spoken and written Russian.

### 21:860:311,312. RUSSIAN LITERATURE IN ENGLISH TRANSLATION (3,3)

*Prerequisite: 21&62:350:101-102.*

Literary analysis of representative works of Russian literature: Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, Tolstoy, Chekhov, and Zamyatin.

### 21:860:313,314. SLAVIC LITERATURE IN ENGLISH TRANSLATION (3,3)

*Prerequisites: 21&62:350:101-102.*

Analysis of representative works of Czech, Polish, Serbo-Croatian, and Ukrainian writers.

### 21:860:322. RUSSIAN SHORT STORY (3)

Reading, analysis, and discussion of nineteenth- and twentieth-century Russian short stories.

### 21:860:323. RUSSIAN CIVILIZATION (3)

Relationships between Russian society, literature, art, and music in the nineteenth and twentieth centuries.

### 21:860:324. HISTORY OF SLAVIC LANGUAGES (3)

Development of the Slavic languages from Old Church Slavonic, with particular emphasis on the development of the Russian language.

### 21:860:332. RUSSIAN POETRY (3)

Selected poetry from the eighteenth to the twentieth century.

### 21:860:341,342. THE RUSSIAN NOVEL (3,3)

Representative novellas and major novels of the nineteenth century.

### 21:860:347. RUSSIAN DRAMA (3)

Reading and analysis of the major works of Russian drama, from the eighteenth century to the present, in Russian and English.

### 21:860:355,356. INDIVIDUAL STUDY IN SLAVIC (3,3)

*Prerequisite: Permission of department chairperson or instructor.*

Individual study for students interested in specialized study or research in Slavic languages or literatures.

### 21:860:485. SEMINAR IN SLAVIC (3)

Reading and research in a specific aspect of Slavic languages, literatures, and cultures; presentation of a critical paper.

### 21:860:486. SEMINAR IN RUSSIAN LITERATURE (3)

Reading and research in a specific aspect of Russian literature; presentation of an analytic and critical paper.

## SOCIAL WORK 910

### Department of Social Work

Hill Hall (973/353-5145)

The major and minor in social work/social welfare are offered at NCAS and UC-N. \*

### Major Requirements

The social work major prepares students to enter a profession that has a long tradition of concern and action for the well-being of individuals, families, groups, and communities. Students are prepared for beginning level, generalist practice, with emphasis on special populations such as the oppressed, the at-risk, and the vulnerable.

The department is accredited by the Council on Social Work Education and includes academic course work and professionally supervised field practice. Graduates are eligible for advanced standing if they pursue graduate study in social work.

The major may be declared after completing at least 24 credits, including one of the following courses, with a minimum grade of C: 21&62:910:220, 341, or 342. Students are required to have a minimum overall grade-point average of 2.0. Prospective students should contact the department for advisement as soon as possible.

The requirements for the social work major include the following:

#### 1. Social Work

21&62:910:220	Introduction to Social Work and Social Welfare
21&62:910:322	Human Behavior and the Social Environment
21&62:910:324	Social Work Practice Laboratory
21&62:910:341	Social Welfare Policies through 1930s
21&62:910:342	Contemporary Social Welfare Policies
21&62:910:345	Human Diversity
21&62:910:346	Social Work Theory and Methods I
21:910:411	Social Work Theory and Methods II
21:910:412	Social Work Theory and Methods III
21&62:910:413	Social Work Senior Seminar I
21&62:910:414	Social Work Senior Seminar II
21:910:471	Field Practice in Social Work I
21:910:472	Field Practice in Social Work II

\* Availability of advanced methods courses and field practice cannot be guaranteed in the evening.



2. *Sociology* (one of the following)
  - 21&62:920:201 Sociology I: Contemporary Society
  - 21&62:920:202 Sociology II: Organization and Interaction
3. *Psychology*
  - 21&62:830:209 Principles of Psychology
4. *Political Science*
  - 21&62:790:201 American National Government
5. *Research*
  - 21&62:920:301-302 Introduction to Social Research *or*
  - 21&62:830:301 Statistical Methods for the Cognitive and Behavioral Sciences *and*
  - 21&62:830:302 Experimental Methods for the Cognitive and Behavioral Sciences
6. *Biology* (one of the following)
  - 21:120:101-102 General Biology;
  - UC–N students: 62:120:104 Human Health and Disease *or* 62:120:208 Human Sexuality
7. *Economics* (one of the following)
  - 21&62:220:101 Introduction to Economics, Micro
  - 21&62:220:102 Introduction to Economics, Macro
  - 21&62:220:200 Economic Analysis of Social Problems

## Minor Requirements

The minor in social welfare requires 18 credits to be completed with a grade of C or better. Completion of the minor does not fulfill New Jersey state requirements for social work certification.

1. 21&62:910:220 Introduction to Social Work and Social Welfare
- 21&62:910:322 Human Behavior and the Social Environment
- 21&62:910:341 Social Welfare Policies through 1930s
- 21&62:910:342 Contemporary Social Welfare Policies
- 21&62:910:345 Human Diversity
2. 3 credits from a social work elective or social work independent study

## Courses

### 21&62:910:220. INTRODUCTION TO SOCIAL WORK AND SOCIAL WELFARE (3)

Introduction to history, values, and ethical and theoretical foundations of social work and social welfare. Exploration of fields of practice through agency visits, volunteer experiences, and special presentations.

### 21&62:910:322. HUMAN BEHAVIOR AND THE SOCIAL ENVIRONMENT (3)

*Prerequisites: 21&62:120:101; 21&62:830:209; 21&62:910:220.*  
Study of the individual across the life cycle with emphasis on understanding and integrating biological, psychological, and sociological theories and using this knowledge to influence and change behaviors in client and interacting systems; application of human behavior theories to life situations.

### 21&62:910:324. SOCIAL WORK PRACTICE LABORATORY (3)

*Corequisite: 21&62:910:346.*  
Provides experiences to complement the theoretical conceptualizations discussed in 21&62:910:346. Emphasis on the development of skills in relation to the knowledge base.

### 21&62:910:341. SOCIAL WELFARE POLICIES THROUGH 1930S (3)

*Prerequisite: 21&62:910:220.*  
Examines the early history of American social welfare and social work through the interplay of values, tradition, politics, economics, and social changes that affected the American response to social needs and social problems.

### 21&62:910:342. CONTEMPORARY SOCIAL WELFARE POLICIES (3)

*Prerequisite: 21&62:910:220.*  
American social welfare policies and programs and the profession of social work since the late 1930s examined. Analysis made of the impact of changing social conditions on contemporary policies and programs and in turn their impact on the most vulnerable members of American society. Alternative responses to social need and directions for future social policy explored.

### 21&62:910:345. HUMAN DIVERSITY (3)

*Prerequisites: 21&62:830:209; 21&62:920:201 or 202.*  
Focus on theories, knowledge, action, groups, organizations, and communities as related to diverse populations and diversity issues; ways systems promote or deter well-being. Students apply and evaluate theory to client situations.

### 21&62:910:346. SOCIAL WORK THEORY AND METHODS I (3)

*Prerequisites: 21&62:910:220 and either 322 or 345. Corequisite: 21&62:910:324.*  
First of a three-term, upper-level sequence that builds upon systems theory and the generalist social work problem-solving method. Emphasizes the knowledge components of problem identification and assessment, goal setting, social work values, conscious use of self, and communication with a variety of client systems.

### 21&910:411. SOCIAL WORK THEORY AND METHODS II (3)

*Prerequisites: 21&62:910:324 and 346. Corequisites: 21&62:910:413, 471.*  
Emphasis placed on the skills and theoretical implications of planning and intervention techniques in relation to values of social justice, confidentiality, right of client self-determination, and respect for the privacy of the client. Focus on utilization of groups as a method of intervention and termination skills.

### 21&910:412. SOCIAL WORK THEORY AND METHODS III (3)

*Prerequisite: 21&62:910:411. Corequisites: 21&62:910:414, 472.*  
Emphasis on macro-level theory and practice, including evaluation and analysis of practice, programs/policies, and research. Communities, bureaucratic functioning, role of advocacy, and effective use of supervision. International component of social work also explored.

### 21&62:910:413. SOCIAL WORK SENIOR SEMINAR I (2)

*Prerequisites: All department required courses through the 300 level. Corequisites: 21&62:910:411 and 471.*  
Forum in which progress in field agency assignments is monitored and potential incongruencies in learning experiences and expectations addressed. Analyze and synthesize application of social work theories and methods content to practice settings.

### 21&62:910:414. SOCIAL WORK SENIOR SEMINAR II (2)

*Prerequisites: 21&62:910:411, 413, and 471. Corequisites: 21&62:910:412 and 472.*  
Forum in which progress in field agency assignments is monitored and potential incongruencies in learning experiences and expectations addressed. Analyze and synthesize application of social work theories and methods content to practice settings.

### 21&62:910:457,458. ISSUES IN SOCIAL WORK (3,3)

Examination of various topical subjects in social work.

### 21&62:910:467,468. INDEPENDENT STUDY IN SOCIAL WORK (3,3)

*Prerequisite: Permission of department chairperson. Social work major.*  
Independent research or project under faculty supervision.

### 21&910:471-472. FIELD PRACTICE IN SOCIAL WORK (4,4)

*Prerequisites: 21&62:910:324, 346. Corequisites: 21&62:910:411,412 and 413,414.*  
Field experience in social work agency under supervision of the agency and university. Placement must be arranged term prior to practice.



**21&62:910:473,474. ADVANCED PRACTICUM IN SOCIAL WORK (BA,BA)**

*Prerequisites: 21&62:910:471-472; permission of instructor.*

Develop skill and expand knowledge in a specific social work method or field of practice under the professional guidance that accompanies all forms of field instruction.

## **SOCIOLOGY 920**

*Department of Sociology and Anthropology*

*Hill Hall (973/353-5255)*

### **Major Requirements: NCAS and UC-N**

A major in sociology provides the student with a basic understanding of the causes and consequences of the ways people behave in terms of one another. It is a pertinent field of study for anyone whose work focuses on human social behavior, whether that work is in sales, politics, law, management, instruction, advertising, journalism, research, criminal justice, or social welfare.

The requirements for the major include:

1. 38 credits in Sociology 920, Anthropology 070, and/or Criminal Justice 202 *or* Social Work 910 (maximum of 3 credits) courses, which must include 21&62:920:201 Introduction to Sociology I and 21&62:920:202 Introduction to Sociology II
2. Competence in research methodology, basic sociological theory, and elementary statistics to be demonstrated by completion of:  
21&62:920:301-302 Social Research I,II  
21&62:920:409 Classical Sociological Theory  
21&62:920:415 Contemporary Sociological Theory

Candidates for graduate school are advised to take German, French, or, in the case of students interested in Latin American studies, Spanish.

### **Minor Requirements: NCAS and UC-N**

The minor requires a minimum of 24 credits in sociology including one theory course, either 21&62:920:409 *or* 415.

### **Courses**

**21&62:920:201. INTRODUCTION TO SOCIOLOGY I (3)**

Study of society: social structure, culture, and social interaction; the nature and historical developments of modern forms of social organization and social relationships.

**21&62:920:202. INTRODUCTION TO SOCIOLOGY II (3)**

Critical themes in modern sociology. Emphasis on communities, minorities, education, religion, leisure, the family, and the economy.

**21&62:920:209. CRIME AND JUSTICE IN AMERICAN SOCIETY (3)**

Analysis of major criminal justice institutions in American society; the function of courts, police, and judicial systems in helping or impairing the fair administration of criminal law.

**21&62:920:301-302. SOCIAL RESEARCH I,II (4,4)**

*Lec. 3 hrs., lab. 3 hrs. Prerequisites: 21&62:920:201, 202, or equivalent.*

The art and the science of doing research; how to develop a researchable question (hypothesis construction and causal modelling); how to collect (observation, surveys, experiments, and secondary analysis) and analyze data (statistics); and how to write a scientific report. Independent research project required.

**21&62:920:303. SOCIAL CHANGE AND GLOBALIZATION (3)**

Causes and consequences of change, as it touches individuals, small groups, communities, organizations, and societies; analyzes intended and unforeseen changes in both current social relations and the history of social structures.

**21&62:920:304. SOCIAL PROBLEMS (3)**

Social problems facing Americans today; causes and processes underlying these problems; evaluation of proposed solutions.

**21&62:920:306. MARRIAGE AND THE FAMILY (3)**

The institution of the family; emphasis on the modern American family and the current search for alternatives to the traditional monogamous family.

**21&62:920:307. SOCIAL PROTEST AND REVOLUTION (3)**

Problem of order in social groups and entire societies; the production and enforcement of norms; the role of authority in social life; institutional integration and disintegration; oppression, revolution, and normative reconstruction.

**21&62:920:308. SOCIAL PROTEST AND REVOLUTION (3)**

The manifestations of social change as they appear in diffuse collective behavior and subsequent reintegrative social movements.

**21&62:920:310. OCCUPATIONS AND PROFESSIONS (3)**

Variations in cultural definitions of work, attitudes toward careers, and the social environment of work; the development of professions; occupational and professional recruitment.

**21&62:920:311. SOCIOLOGY OF THE ECONOMY AND INDUSTRY (3)**

Development and significance of modern industry and bureaucracy; division of labor; growth of corporations; interplay of formal and informal organization; sources of labor supply; the role of labor unions in industrial conflict; economic classes and status positions in large-scale organizations.

**21&62:920:313. CRIMINOLOGY (3)**

Crime and criminals in modern society, including causes of crime; machinery of justice; penal and correctional institutions; probation and parole; theories of crime and punishment.

**21&62:920:314. BUREAUCRACY AND SOCIETY (3)**

Causes and consequences of organizations; internal arrangements; effects of environment; organizational performances and effects on people.

**21&62:920:315. THE PERSON IN SOCIETY (3)**

The interaction between the development of the self and the social environment in which it occurs.

**21&62:920:316. RACE AND ETHNICITY IN MULTICULTURAL SOCIETIES (3)**

Comparative view of ethnic relations; origins in migration and mixture of populations; social-psychological consequences of stratification along racial and ethnic lines; prejudice; special emphasis on black Americans.

**21&62:920:318. SOCIOLOGY OF HEALTH CARE (3)**

The health care system in the U.S.; social behavior of patients and providers within the system; the role of the patient in the delivery of health care; the health professions; health service organizations.

**21&62:920:321. SUBURBS, CITIES, AND INNER CITIES (3)**

The city as a mosaic of communities; persistence and change in the structure of urban neighborhoods; city life and the urban personality; the sociology of community planning; the future of neighborhood, suburb, and city.

**21&62:920:327. PUBLIC OPINION AND COMMUNICATION (3)**

Content and transmission of popular culture from a sociological perspective; evaluation of selected forms of popular art and their place in American culture; theories on the social evolution of popular forms from folk and elite cultures; methods employed in analysis of mass culture.

**21&62:920:332. CLASS, STATUS, AND POWER (3)**

Theories of inequality, social ranking, and the distribution of resources and opportunity as they affect individuals and groups in terms of crime, health, family life, and value systems.

**21&62:920:333. JUNIOR READINGS IN SOCIOLOGY (3)**

*Prerequisites: Junior or senior standing, and permission of instructor.*

Critical readings and discussions of a group of classic works in the field of sociology and social research.

**21&62:920:336. PUNISHMENT AND PRISONS (3)**

Examines and analyzes major types of custodial and community-based criminal corrections in contemporary America. Discusses purposes of corrections, correctional organization, impact of corrections, and contemporary issues facing the field.

**21&62:920:337. SOCIOLOGY OF SEX AND GENDER (3)**

Relative statuses and roles of men and women in American society, including socialization; historical overview of sex statuses; differentials between males and females in educational and occupational sectors; personal relationships; sexuality.

**21&62:920:338. SOCIOLOGY OF DEATH AND DYING (3)**

Social factors that influence death and dying in the U.S.; characteristics of patients, professional staff, and institutions as these relate to the dying process and the definition of death; the routinization of death; the impact of technology on dying; current issues in the field.

**21&62:920:340. SOCIOLOGY OF RELIGION (3)**

Social influences on religious organizations and religious beliefs; aims and methods in the study of churches, sects, cults, and civil religions.

**21&62:920:344. SOCIOLOGY OF DEVIANCE (3)**

Forms of social deviance; theories of deviant behavior; the amount and distribution of deviance in society; societal reaction to deviants and deviant behavior.

**21&62:920:345. SOCIOLOGY OF EDUCATION (3)**

The interaction between schools and society; basic social concepts such as stratification, social role, and bureaucratic organization as they relate to the educational system; the system in relation to the larger institutions in the society, with emphasis on both stated objectives and actual social functions.

**21&62:920:346. POLITICAL SOCIOLOGY (3)**

Perspectives on the nature, organization, and historical development of power in society; social dimensions of the state, democratic politics, and political change; consequences of the social organization of power for other elements of society.

**21&62:920:349. LAW AND SOCIETY (3)**

Law as a social institution; social processes in the creation and enforcement of law; the professions of law; law as product and producer of social change; ancient and modern legal institutions; modern societies and their legal systems.

**21&62:920:354. APPLYING SOCIOLOGY (3)**

Sociological practicum; the sociological meaning of the practical experiences in work, internships, volunteer programs, and other "real world" organizational settings.

**21&62:920:375. POVERTY AND GROWTH IN AFRICA, ASIA, AND LATIN AMERICA (3)**

Comparative study of the developed and the less-developed nations, and of what separates the two; the growth of nationalism; the emergence of new elites; the roles of higher education and the military in development; the sociological determinants of economic growth; modernity as an individual and societal characteristic.

**21&62:920:380. CIVIL CONFLICT AND VIOLENCE (3)**

Analyzes conflict as a normal process in social life; the emergence and dynamics of conflict; the effects of conflict on individual values and social structures; the processes of conflict resolution; individual, group, and inter-social conflicts.

**21&62:920:386. SOCIOLOGY OF SCIENCE (3)**

Social organization of scientific knowledge; organization of scientific communities; inequalities among scientists; effects of scientific knowledge on modern ways of life.

**62:920:393,394. TOPICAL ISSUES IN SOCIOLOGY (3,3)**

Topics vary each term. Consult department for current information.

**21&62:920:395. FIELD RESEARCH METHODS (3)**

Nonquantitative observational and participant-observational research techniques.

**21&62:920:408. SENIOR READING IN SOCIOLOGY (3)**

*Prerequisites: Senior standing and permission of instructor.*

Critical reading and discussion of monographs and journal literature dealing with selected issues in the field of sociology.

**21&62:920:409. CLASSICAL SOCIOLOGICAL THEORY (3)**

Foundations of social theory; Comte, Durkheim, Marx, Weber, and others—contributors to major orientations in the nature and historical development of modern society in the Western world.

**21&62:920:415. CONTEMPORARY SOCIOLOGICAL THEORY (3)**

*Prerequisite: 21&62:920:409 or permission of instructor.*

Current modes of theoretical analysis, and contemporary perspectives on the nature and historical development of modern forms of social organization and social relationships.

**21&62:920:454. TOPICS IN CRIMINAL JUSTICE (3)**

In-depth exploration of selected issues in criminal justice of general relevance and specific interest to course participants.

**21&62:920:491,492. RESEARCH IN SOCIOLOGY (3,3)**

*Prerequisites: Junior or senior standing, and permission of instructor.*

**21&62:920:493. SEMINAR IN SOCIOLOGY (3)**

*Prerequisites: Junior or senior standing, and permission of instructor.*

Individualized study of a sociological topic.

**21&62:920:494. CONFERENCE IN SOCIOLOGY (3)**

*Prerequisites: Junior or senior standing, and permission of instructor.*

Intensive study of one topic of sociology.

**21&62:920:495,496. HONORS SEMINAR IN SOCIOLOGY (3,3)**

*Prerequisites: Completion of 24 credits in sociology and selection by the department as an outstanding student. For seniors who intend to pursue graduate training in sociology.*

Intensive review of general sociology and a practicum in conceptualizing and teaching it.

**21&62:920:499. INDEPENDENT STUDY IN SOCIOLOGY (BA)**

*Prerequisites: Permission of instructor and department chairperson.*

## SPANISH 940

*Department of Classical and Modern Languages and Literatures  
Conklin Hall (973/353-5498)*

The Spanish major and minor are offered at NCAS.

The department offers major programs in ancient Mediterranean civilizations (Classics 190, Greek 490, Hebraic Studies 500, Latin 580), French 420, German 470, Italian 560, Slavic 860, and Spanish 940. Students majoring in one language area may concurrently major or minor in another language area. The department also participates in the interdisciplinary major, a multidisciplinary minor in International Affairs, the Rutgers Study Abroad Program, and offers courses in Portuguese.

### Major Requirements

There are two Spanish concentrations available to NCAS students: (a) Spanish language and literatures and (b) Hispanic civilization and language studies.

#### *Spanish Language and Literatures*

The requirements for a concentration in Spanish language and literatures are the following:

1. 30 credits in Spanish language and literatures, which may include 21&62:940:131,132 Intermediate Spanish (or equivalent preparation as demonstrated by proficiency examination). Any of the Spanish language and literature courses numbered 200 or higher may be taken to satisfy this requirement, with the exception of literature in English translation. The prerequisite for advanced literature courses is 21:940:205,206 Introduction to Spanish Literature.
2. 9 credits in other courses within the department, at least 3 of which must be in literature in the original language or in translation.
3. 6 credits from one or more of the following as approved by an adviser: English literature courses numbered higher than 215, 216, philosophy, music history, art history.

#### *Hispanic Civilization and Language Studies*

*Program Director: Asela Laguna*

The Hispanic civilization and language studies concentration is designed to serve students planning careers for which a thorough knowledge of countries and cultures in the Hispanic world is needed.

Proficiency in Spanish at the intermediate level (21:940:132 or equivalent) is required. The requirements for a major in Hispanic civilization and language studies consist of 39 credits as follows:

1. 12 credits in the following courses:  
6 credits in 21:940:205, 206, 207 Introduction to Spanish Literature, 21:940:208 Introduction to Latin American Literature, or higher-level Spanish literature courses;  
21:940:341,342 Hispanic Civilization
2. 12 credits in other Spanish (language and literature) courses at or above the 200 level, except 21:940:311,312 Spanish Literature in English Translation and 21:940:343,344 Latin American Literature in English Translation.
3. 15 credits chosen by the student in consultation with the Spanish adviser.

### Minor Requirements

Eighteen credits in Spanish language and literatures that may include 21&62:940:131,132 Intermediate Spanish (or equivalent preparation as demonstrated by proficiency examination). Any of the Spanish language and literature courses numbered 200 or higher may be taken to satisfy this requirement, with the exception of literature in English translation.

The Department of Classical and Modern Languages and Literatures also offers minors in ancient Mediterranean civilizations, French, German, Italian, and Slavic. Students may pursue one or more minor concentrations.

### Courses

#### **21&62:940:101-102. ELEMENTARY SPANISH (3,3)**

*Intended for students with little or no previous knowledge of Spanish.  
Both terms must be completed to receive credit.*

Fundamentals of grammar; drill in speaking and reading. A minimum total of ten hours of language laboratory work per term is required of all students in NCAS elementary language courses and is recommended for UC-N students.

#### **21&62:940:131,132. INTERMEDIATE SPANISH (3,3)**

*Prerequisite: 21&62:940:102 or equivalent as determined by a placement examination. NCAS offers sections for native and for nonnative students.*  
Review of grammar; selected readings in literature and other cultural areas.

#### **21:940:151. CONTEMPORARY SPANISH LANGUAGE AND CULTURE (3)**

Multidisciplinary course designed specifically to improve fluency in Spanish. Emphasis on the active use of the language and on contemporary Hispanic topics.

#### **21:940:203. GRAMMAR AND COMPOSITION (3)**

For prospective teachers and others who wish to acquire more fluency in oral and written Spanish.

#### **21:940:204. COMPOSITION AND ORAL COMMUNICATION (3)**

*Prerequisite: 21:940:203 or permission of instructor.*  
Intensive practice in oral and written Spanish.

#### **21:940:205,206. INTRODUCTION TO SPANISH LITERATURE (3,3)**

*21:940:205,206 are prerequisite to advanced courses in Spanish and Latin-American literature.*  
Development of Spanish literature from the Middle Ages to the present, with emphasis on literary traditions and culture; conducted in Spanish.

#### **21:940:207. INTRODUCTION TO SPANISH LITERATURE (3)**

Development of skills in reading literature. Reading of short works in the original and introduction to literary concepts. Recommended for nonnative speakers of Spanish; conducted in Spanish.

#### **21:940:208. INTRODUCTION TO LATIN AMERICAN LITERATURE (3)**

Development of Latin American literature from its colonial origins to the present; conducted in Spanish.

#### **21:940:270. PUERTO RICAN LITERATURE (3)**

History and development of Puerto Rican literature from its beginnings to the present. Selected readings in the novel, poetry, short story, essay, and theater; conducted in Spanish.

#### **21:940:304. SLAVERY, RACE, AND BLACK EXPERIENCE IN SPANISH-AMERICAN LITERATURE (3)**

Interdisciplinary examination and analysis of major literary themes in the history of the black experience in Spanish America, as seen in antislavery literature of the nineteenth century, and in many texts dealing with miscegenation, race relations, blackness, sexuality, discrimination, and the search for identity; conducted in Spanish.



**21:940:307. ADVANCED GRAMMAR AND COMPOSITION (3)**

*Prerequisites: 21:940:203, 204 or equivalent as determined by a placement examination.*

For students with a good command of the Spanish language who wish to perfect their knowledge of written and oral Spanish; grammar analysis includes study of orthography, morphology, and syntax; unusual points of grammar and syntax.

**21:940:311,312. SPANISH LITERATURE IN ENGLISH TRANSLATION (3,3)**

*Not open to Spanish majors.*

A chronological survey of Spanish literature from the Middle Ages to the twentieth century, with emphasis on literary traditions and culture.

**21:940:315. SPANISH FOR BUSINESS AND COMMERCE (3)**

*Prerequisites: 21:940:203,204 or equivalent.*

For students with a good command of the Spanish language who wish intensive study in commercial and business usage; practical vocabulary and procedures used in business letters and documents, banking, trade, and accounting as practiced in the Spanish-speaking world; conducted in Spanish.

**21:940:318. HISTORY OF THE SPANISH LANGUAGE (3)**

History of the Spanish language from its beginnings to the present; Modern Spanish (Peninsular and Spanish American), its geographical extension and varieties; conducted in Spanish.

**21:940:324. PUERTO RICAN NARRATIVE (3)**

Literary examination of the contemporary Puerto Rican short story and novel including representative works by Enrique Laguerre, Luis Rafael Sánchez, Rosario Ferré, and others; conducted in Spanish.

**21:940:331. THEMES IN SPANISH AND SPANISH-AMERICAN LITERATURES (3)**

Tracing and elaboration of a selected theme in Spanish and/or Spanish-American literary texts (e.g., the caudillo, solitude, mysticism, etc.); conducted in Spanish.

**21:940:333. THE LATIN AMERICAN SHORT STORY (3)**

Historical and theoretical examination of the Latin American short story from its precursors in colonial literature, to its formal inception in the nineteenth century, to modern masterpieces; conducted in Spanish.

**21:940:341,342. HISPANIC CIVILIZATION (3,3)**

Historical and cultural development of Spain and of Latin America.

**21:940:343,344. LATIN AMERICAN LITERATURE IN ENGLISH TRANSLATION (3,3)**

*Not open to Spanish majors.*

A chronological survey of Latin American literature from the period of the Conquest to the twentieth century, with emphasis on literary traditions and cultures.

**21:940:348. HISPANIC FILM AND LITERATURE (3)**

Analysis and comparison of films and written narratives from Spain and Latin America, grouped according to themes relevant to contemporary social, cultural, and aesthetic concerns; conducted in Spanish.

**21:940:350. U.S. HISPANIC LITERATURE (3)**

Survey of U.S. literature by Hispanic-American writers. Includes work by Chicanos, Puerto Ricans, and writers of Caribbean and Central and South American derivation; conducted in Spanish and English.

**21:940:353,354. INDIVIDUAL STUDY IN SPANISH (3,3)**

*Prerequisite: Permission of department chairperson or instructor.*

Individual study or research in Spanish language or literature.

**21:940:366. CONTEMPORARY HISPANIC POETRY (3)**

Examination of contemporary trends in the poetry of Spain and Spanish America. Reading and critical analysis of representative poets and tendencies from the fifties to the present; conducted in Spanish.

**21:940:370. CONTEMPORARY HISPANIC THEATER (3)**

Development of contemporary theater in Spain and Spanish America. Reading and critical examination of representative texts and dramatists from the fifties to the present; conducted in Spanish.

**21:940:373. LITERATURE AND CULTURE OF POST-FRANCO SPAIN (3)**

Reading and discussion of selected novelists, poets, essayists, and dramatists of Spain since Franco's death in 1975, with particular attention to the dramatic sociocultural and political changes and role of the country within the new economic order in Europe; conducted in Spanish.

**21:940:375. INDIGENOUS AND "INDIGENISTA" LITERATURE FROM LATIN AMERICA (3)**

Study of texts by and about Amerindian peoples of the Caribbean and Central and South America, from pre-Columbian and *indigenista* texts to modern testimonials; conducted in Spanish.

**21:940:379. NATIONAL LITERATURES OF SPANISH AMERICA (3)**

Study of one national literature, such as Argentinian, Colombian, Cuban, Dominican, or Mexican, treated in the context of the history, geography, and culture of the particular country; conducted in Spanish.

**21:940:383. IBERO-AMERICAN THOUGHT IN ENGLISH TRANSLATION (3)**

*Prerequisite: 21&62:350:102. Not open to Spanish majors.*

Development and reception of philosophical trends and ideas in Spain and Latin America extending from the sixteenth to the twentieth centuries, especially in the context of the essay as genre; conducted in English with English texts.

**21:940:384. IBERO-AMERICAN THOUGHT (3)**

*Prerequisite: Reading knowledge of Spanish. Open to majors.*

Development and reception of philosophical trends and ideas in Spain and Latin America extending from the sixteenth to the twentieth centuries, especially in the context of the essay as genre; conducted in Spanish with Spanish texts.

**21:940:415. MEDIEVAL SPANISH LITERATURE (3)**

The development of Spanish literature from its origins to 1500; reading of *Poema del Cid*, popular ballads, lyric poetry, exemplums, and *La Celestina*; conducted in Spanish.

**21:940:417,418. SEMINAR IN SPANISH AND LATIN AMERICAN LITERATURES (3,3)**

Explores significant themes and concepts as reflected in diverse genres of Spanish and Latin American literatures. Content varies according to the individual professor's specialization and the students' interests; conducted in Spanish.

**21:940:421. SPANISH THEATER OF THE GOLDEN AGE (3)**

Significance of the Golden Age in relation to the life and thought of the period; reading of works by Lope de Vega, Tirso de Molina, Calderón de la Barca, Juan Ruiz de Alarcón, and others; conducted in Spanish.

**21:940:422. SPANISH POETRY AND PROSE OF THE GOLDEN AGE (3)**

Readings and critical analysis of works by Santa Teresa de Jesús, Mateo Alemán, Quevedo, Fray Luis de León, San Juan de la Cruz, Gongóra, and others; conducted in Spanish.

**21:940:429. CERVANTES: DON QUIJOTE DE LA MANCHA (3)**

In-depth study of *Don Quijote de la Mancha*: its style, structure, main themes, and overall importance in Spanish literature; conducted in Spanish.



**21:940:432. SPANISH-AMERICAN LITERATURE OF THE POST-BOOM (3)**

Examination of intellectual and aesthetic currents in the narrative, poetry, and essay of the Post-Boom period (from 1975 to the present). To be studied in the context of ideas about postmodernism, postindustrialism, and postcolonialism; conducted in Spanish.

**21:940:441. NINETEENTH-CENTURY SPANISH LITERATURE: ROMANTICISM AND COSTUMBRISMO (3)**

Literary movements of the nineteenth century in Spain with special attention to romanticism and *costumbrismo*; representative essays, plays, and poems; conducted in Spanish.

**21:940:442. NINETEENTH-CENTURY SPANISH LITERATURE: REALISM AND NATURALISM (3)**

Literary movements of the second half of the nineteenth century in Spain with special attention to realism and naturalism; representative novels and poetry; conducted in Spanish.

**21:940:451. TWENTIETH-CENTURY SPANISH LITERATURE: THE GENERATION OF '98 (3)**

Critical study of the poetry and prose of the writers of the Generation of 1898; representative works by Unamuno, Azorin, Valle-Inclan, Benavente, Baroja, and others; conducted in Spanish.

**21:940:452. TWENTIETH-CENTURY SPANISH LITERATURE: CONTEMPORARY SPANISH POETRY AND PROSE (3)**

Prominent literary movements in Spain from *Postmodernismo* to the present; representative works by Garcia Lorca, Guillén, Miguel Hernández, Cela, Laforet, Buero Vallejo, and others; conducted in Spanish.

**21:940:453. HISPANIC WOMEN WRITERS (3)**

Prose, fiction, and poetry of distinguished women writers of Spain and Latin America, primarily of the twentieth century. Reading and discussion of literary texts and viewing of video tapes.

**21:940:454. CONTEMPORARY LATIN AMERICAN NOVEL (3)**

The development of the Latin American novel after 1940; representative works by Asturias, Carpentier, Fuentes, Garcia Marquez, and others; conducted in Spanish.

**21:940:460. EARLY SPANISH-AMERICAN LITERATURE (3)**

Development of Spanish-American literature from its colonial origins to the Independence movement; significant works including chronicles, poetry, prose with novelistic elements, and essays; conducted in Spanish.

**21:940:461. SPANISH-AMERICAN LITERATURE: NINETEENTH-CENTURY POETRY AND PROSE (3)**

Development of Spanish-American literature in the nineteenth century stressing literary trends, historical background, and sociopolitical problems as reflected in the works of representative authors; conducted in Spanish.

**21:940:462. SPANISH-AMERICAN LITERATURE: TWENTIETH-CENTURY POETRY AND PROSE (3)**

Development of Spanish-American literature in the twentieth century stressing literary trends, historical background, and contemporary problems as reflected in the works of representative authors; conducted in Spanish.

**21:940:498. THEORETICAL APPROACHES TO HISPANIC LITERATURE AND CULTURE (3)**

Study of theories of literature and civilization. At the discretion of the instructor, approaches may include psychoanalytic, sociological, phenomenological, post-structuralist, civilizational, and others. Studied in a comparative examination of applications both within and outside the Hispanic world; conducted in Spanish.

**21:940:499. SENIOR RESEARCH PROJECT IN SPANISH/SPANISH-AMERICAN LITERATURE OR CIVILIZATION (3)**

*Open only to Spanish and Hispanic civilization majors.*

## **SPEECH 950 (See Theater Arts and Television)**

## **TELEVISION (See Theater Arts and Television)**

## **THEATER ARTS AND TELEVISION (Theater Arts 965, Speech 950)**

### ***Department of Visual and Performing Arts***

*Bradley Hall (973/353-5119, ext. 10)*

The major and minor in theater arts and television is offered at NCAS.

### **Major Requirements**

The major in theater arts and television affords an opportunity to concentrate in one of two directions: theater or television. Theater provides fundamental experiences in performance and production necessary for professional goals. Television course work and production experience focus on public affairs, the analysis of the impact of this powerful medium on society, critical viewing skills, media literacy, and documentary production.

#### **1. Theater**

All students majoring in theater must complete two sets of course requirements: a core and *one* area of concentration.

#### ***Core requirements***

21&62:965:208 Movement for the Theater  
21&62:965:211 Living Theater—Introduction to Theater  
21&62:965:212 From Page to Stage  
21&62:965:271 Acting Fundamentals  
21&62:965:311 Theater History I  
21&62:965:312 Theater History II  
21&62:965:313 Theater Technology  
21&62:965:413 Directing I

3 credits from the Department of English offerings, chosen from *one* of the following:

21&62:350:319 *or* 320 Shakespeare  
21&62:350:345 *or* 346 Modern Drama  
21&62:350:365 World Drama to 1900

12 credits from department offerings with advisement

***Concentration requirements*** (Students choose *one* of the following concentrations and must complete all requirements for the particular concentration they choose):

#### ***Performance concentration***

21&62:965:209 Voice and Speech for the Theater I  
21&62:965:210 Voice and Speech for the Theater II  
21&62:965:261 Performance I  
21&62:965:262 Performance II  
21&62:965:315 Intermediate Acting  
21&62:965:411 Special Topics in Theater  
21&62:965:465 Performance III

### *Technical theater concentration*

- 21&62:965:209 Voice and Speech for the Theater I *or*  
21&62:965:210 Voice and Speech for the  
Theater II
- 21&62:965:259 Production I  
21&62:965:260 Production II  
21&62:965:350 Introduction to Scenic Art and  
Lighting Design
- 21&62:965:409 Stage Management  
21&62:965:411 Special Topics in Theater  
21&62:965:467 Production III

### *Arts management concentration*

- 21&62:084:395 Issues in Arts Management I  
21&62:084:396 Issues in Arts Management II  
21&62:965:209 Voice and Speech for the Theater I *or*  
21&62:965:210 Voice and Speech for the  
Theater II
- 21&62:965:259 Production I  
21&62:965:409 Stage Management  
21&62:965:413 Directing I
- 6 credits chosen from:  
21&62:084:408,409,410,411 Topics in Arts Management  
I,II,III,IV

## 2. Television

Major requirements include 50 credits as follows:

- 21&62:965:253 TV and Society: Image and Impact  
21&62:965:254 TV and Society: The Critical Viewer  
21&62:965:319 Studio Production I  
21&62:965:320 Studio Production II  
21&62:965:394 Internship in Television  
21&62:965:433 Field Production I  
21&62:965:434 Field Production II  
3 credits in film, with advisement  
3 credits in speech, with advisement

15 credits from the following offerings, with advisement:

### *Theater and Television*

- 21&62:965:211 Living Theater  
21&62:965:212 From Page to Stage  
21&62:965:271 Acting Fundamentals  
21&62:965:313 Theater Technology  
21&62:965:350 Introduction to Scenic Art and  
Lighting Design
- 21&62:965:410 Theory and Practice of Video Art  
21&62:965:413 Directing  
21&62:965:440 Topics in Television  
21&62:965:487 Independent Study in Television

### *Journalism*

- 21&62:570:201,202 Journalism and Mass Media  
21&62:570:337 Basic Reporting  
21&62:570:386 Television News Writing  
21&62:570:344 Journalism, Ethics, and the Law

### *Media Education*

- 21&62:014:180 History of Afro-American Education  
21&62:240:336 Communication Skills and Social  
Studies, Pre-K-8
- 21&62:250:487 Student Teaching and Seminar  
21&62:300:381 Educational Psychology and  
Sophomore Practicum
- 21&62:300:402 History of Education in the United States  
21&62:300:415 Introduction to Philosophy of Education  
21&62:310:410 Issues in Urban Education

### *Art*

- 21&62:080:245 Introduction to Computer Art  
6 credits from other department offerings,  
with advisement

## Minor Requirements

### 1. Theater

Minor requirements include 21 credits as follows:

- 21&62:965:211 Living Theater  
21&62:965:212 From Page to Stage  
21&62:965:271 Acting Fundamentals *or* 21&62:965:313  
Theater Technology  
21&62:965:311 Theater History I  
21&62:965:312 Theater History II  
*Plus* 6 credits selected from any two of the following:  
21&62:965:259 Production I  
21&62:965:260 Production II  
21&62:965:261 Performance I  
21&62:965:262 Performance II

### 2. Television

Minor requirements include 20 credits as follows:

- 21&62:965:253,254 TV and Society  
21&62:965:319 Studio Production I  
21&62:965:433 Field Production I  
6 credits chosen from the Theater and Television,  
Journalism, or Media Education offerings listed above  
in the requirements for the major

## Sequence in Arts Management

The faculty of the Department of Visual and Performing Arts in conjunction with members of the Faculty of Management offers a sequence of six courses as pre-professional training for a wide spectrum of not-for-profit arts management opportunities. The sequence provides students with the opportunity to acquire specific business skills that can be applied to a profession in the arts. For practical experience, a wide variety of internships are available, some of which provide stipends. The sequence comprises the following 24 credits:

- 21&62:084:393,394 Internship in Arts Management (3,3)  
21&62:084:395,396 Issues in Arts Management I,II (3,3)  
21&62:084:408,409,410,411 Topics in Arts Management  
I,II,III,IV (3,3,3,3)

## Courses (Theater Arts and Television 965)

### 21&62:965:208. MOVEMENT FOR THE THEATER (3)

Introductory skill-oriented movement exercises followed by an exploration of the physical nature of acting and character work.

### 21&62:965:209. VOICE AND SPEECH FOR THE THEATER I (3)

An introduction to the use of the voice as a vocal instrument. Beginning with breath control, students learn how to project the voice, the use of resonators, and the placement of the voice in space.

### 21&62:965:210. VOICE AND SPEECH FOR THE THEATER II (3)

Working with plays, poetry, and narrative, students learn to analyze texts vocally and to explore the relationship between physical and vocal expression.

### 21&62:965:211. LIVING THEATER—INTRODUCTION TO THEATER (3)

An introduction to the basic elements of theater through an examination of the roles of the playwright, director, designer, and actor. Attend select current plays.

**21&62:965:212. FROM PAGE TO STAGE (3)**

An introduction to understanding the relationship between the literary nature of plays and how they are produced for the stage. Attend select current plays.

**21&62:965:253. TV AND SOCIETY: IMAGE AND IMPACT (3)**

The basic foundations and cultural impact of broadcast development in the U.S.; history of radio and television, both commercial and noncommercial; cable, satellite communication, and other developing technologies; economics and public policy.

**21&62:965:254. TV AND SOCIETY: THE CRITICAL VIEWER (3)**

*Prerequisite: 21&62:965:253.*

Continuation of 21&62:965:253; fundamental tools of media aesthetics; understanding television as a medium and the role it plays in society; examples of excellence in all aspects of broadcasting.

**21&62:965:256,257. THE ART AND HISTORY OF THE FILM (3,3)**

Development of the film as an art form; its origins in stage techniques; the emergence of a film aesthetic through the contributions of various international artists.

**21&62:965:259. PRODUCTION I (3)**

*Recommended: 21&62:965:211,212, 313. Consult with instructor prior to registration.*

A lecture/workshop that combines classes with working in a technical or administrative capacity on a department production.

**21&62:965:260. PRODUCTION II (3)**

*Recommended: 21&62:965:211,212, 313. Consult with instructor prior to registration. Production I is not a prerequisite.*

A lecture/workshop that combines classes with working in a technical or administrative capacity on a department production.

**21&62:965:261. PERFORMANCE I (3)**

*Recommended: 21&62:965:211, 271, 313.*

A lecture/workshop that combines classes with a production. A different style or genre of theater is studied each term the course is offered.

**21&62:965:262. PERFORMANCE II (3)**

*Recommended: 21&62:965:211,212, 271. Performance I is not a prerequisite.*

A lecture/workshop that combines classes with a production. A different style or genre of theater is studied each term the course is offered.

**21&62:965:263,264. MODERN FILM (3,3)**

Selected examples of modern filmmaking, with emphasis on the changes and developments following World War II; examples of verisimo, imagination, and the relationship of film to other narrative art forms.

**21&62:965:271. ACTING FUNDAMENTALS (3)**

Fundamental principles of acting; theory and practice in improvisation emphasizing imagination, movements, rhythm, and group ensemble; basic techniques and exercises.

**21&62:965:311,312. THEATER HISTORY (3,3)**

*Recommended: 21&62:965:211 or 212.*

A study of Euro-American theater history with an emphasis on production rather than dramatic literature. *First term:* ancient Greece and Rome through early post-Renaissance Europe. *Second term:* post-Renaissance Europe to present.

**21&62:965:313. THEATER TECHNOLOGY (3)**

*Prerequisite: 21&62:965:211 or 212.*

Materials, equipment, and methods basic to construction of scenery for stage and/or television; properties, lighting, costumes, and makeup; laboratory work in the theater required.

**21&62:965:315. INTERMEDIATE ACTING (3)**

*Prerequisite: 21&62:965:271.*

Interpretation of scenes from selected dramas for stage performance; evaluation of practiced techniques in character portrayal through dialogue and action.

**21&62:965:319. STUDIO PRODUCTION I (4)**

*Prerequisites: 21&62:965:253,254 or junior standing.*

The television production process; practical technical exercises on cameras, camera control units, switcher, character generator, audio operations, floor plans, and studio lighting.

**21&62:965:320. STUDIO PRODUCTION II (3)**

*Prerequisites: 21&62:965:253,254 or junior standing; 21&62:965:319.*

Continuation of 21&62:965:319; production systems design and postproduction editing; principles of media communication applied to audience, content message, script format, personnel, studio equipment, and budget.

**21&62:965:350. INTRODUCTION TO SCENIC ART AND LIGHTING DESIGN (3)**

*Prerequisite: 21&62:965:313.*

An introduction to the basic components of set and lighting design for the theater. A lab component is required.

**21&62:965:351,352. TOPICS IN AMERICAN FILM (3,3)**

*Recommended: 21&62:965:256 or 257.*

Drawing upon the history of American film from the silent era through the studio-dominated 1940s to the present day, the instructor chooses a particular topic to focus upon each term.

**21&62:965:353. TRADITIONAL THEATERS OF ASIA (3)**

Asian theater forms from India, Japan, China, and Bali. Consideration of the theories underlying the forms as well as a discussion of their influence on the works of several leading contemporary theater artists.

**21&62:965:394. INTERNSHIP—TELEVISION (3)**

*Open to theater arts majors in junior or senior year. Prerequisites: Permission of department chairperson and instructor directing the study.*

**21&62:965:396. INTERNSHIP—THEATER (3)**

*Open to theater arts majors in junior or senior year. Prerequisites: Permission of department chairperson and instructor directing the study.*

**21&62:965:409. STAGE MANAGEMENT (3)**

*Prerequisite: 21&62:965:271 or 313.*

The fundamentals of stage management, including an understanding of rehearsal procedures, organizational methods, working with actors and technicians, and running a production from opening night to closing. Includes a lab component.

**21&62:965:410. THEORY AND PRACTICE OF VIDEO ART (3)**

*Open to nonmajors with permission of instructor. Prerequisites: 21&62:080:231 or 261 or 245 or 21&62:965:313 or 319.*

Introduction to contemporary theory and practice of video as an art form. Emphasis on the production of individual art works incorporating video technology and critical literature about video.

**21&62:965:411. SPECIAL TOPICS IN THEATER (3)**

*Prerequisite: Permission of instructor.*

Each time the course is offered, the instructor chooses a particular topic to focus upon that is not usually covered in general course work. Topics might include experimental theater, performance theory, collective creation, or the work of a particular director.

**21&62:965:413,414. DIRECTING (3,3)**

*Prerequisites: 21&62:965:212, 271, 313. Enrollment limited by laboratory space.*

Production of short plays or other workshop scenarios; emphasis on the process of synthesizing all theatrical elements toward a structured performance.

**21&62:965:415. PROBLEMS IN PERFORMANCE STYLES (3)**

*Prerequisite: 21&62:965:315.*

Continuing examination of patterns of visual and auditory stimuli, as they affect the problems of the performer.

**21&62:965:417,418. PROBLEMS IN THEATRICAL DESIGN (3,3)**

*Prerequisite: 21&62:965:313.*

Continuing examination of the temporal-spatial composition through problems and responsibilities in setting, lighting, or costuming.



**21&62:965:433. FIELD PRODUCTION I (4)**

*Prerequisites: 21&62:965:253,254 or junior standing.*

Technical and creative experience in the production of advanced television programming; practical experience in such formats as news, public affairs, drama, and commercials; technical aspects of advanced color television.

**21&62:965:434. FIELD PRODUCTION II (3)**

*Prerequisite: 21&62:965:433.*

Advanced course in the theory and practice of television production; special problems in production, direction, and performance.

**21&62:965:440,441. TOPICS IN TELEVISION (3,3)**

*Open to nonmajors. Prerequisite: 21&62:965:254 or permission of instructor.*

Contemporary issues concerning the functions and impact of television in the United States and related public policies, including the latest developments in programming, news, politics, advertising, and relationship of television to the "information superhighway."

**21:965:442. CORPORATE AND INSTRUCTIONAL TELEVISION (3)**

*Prerequisite: 21&62:965:433.*

Use of electronic communication in business and educational settings and by grass-roots organizations; training, employer-employee communications, and recruitment; topics for the corporate setting.

**21&62:965:451. AMERICAN THEATER (3)**

Theater in the United States from its beginnings to the present day. Areas covered include the beginnings in the colonies, the gradual shift in the early years from touring to the emergence of the theater centers of Philadelphia, Boston, and New York; major movements and figures; and the contribution of regional theaters.

**21&62:965:465. PERFORMANCE III (3)**

*Recommended: 21&62:965:211,212, 271. Performance I or II are not prerequisites.*

A lecture/workshop that combines classwork with a production. A different style or genre of theater is studied each term the course is offered.

**21&62:965:467. PRODUCTION III (3)**

*Recommended: 21&62:965:211,212, 313. Consult with instructor prior to registration. Production I or II are not prerequisites.*

A lecture/workshop that combines classes with working in a technical or administrative capacity on a department production.

**21&62:965:481,482. SEMINAR IN THEATER ART AND HISTORY (3,3)**

Research in theater (stage, film, television); may be arranged upon consultation with program coordinator.

**21&62:965:483,484. INDIVIDUAL STUDY IN THEATER (1-3,1-3)**

*Prerequisite: Permission of instructor.*

Problems in the theory and/or practice of theater; may be arranged upon consultation with department chairperson.

**21&62:965:487,488. INDIVIDUAL STUDY IN BROADCASTING (1-3,1-3)**

*Prerequisite: Permission of instructor.*

Special problems in the theory and/or practice of broadcasting; may be arranged upon consultation with department chairperson.

**Courses (Speech 950)****21&62:950:261. FUNDAMENTALS OF SPEECH (3)**

Effective oral communication and effective listening; practice in speech situations; oral organization and logic.

**21&62:950:271,272. VOICE AND ARTICULATION (3,3)**

The effective use of the voice and speech mechanism; guided ear training; use of the International Phonetic Alphabet.

**21&62:950:289,290. PRINCIPLES OF ORAL INTERPRETATION (3,3)**

Analysis and oral presentation of types of literature; development of vocal techniques and their use in conveying meaning; analysis of sound values, vocal emphasis, rhythm, poetic diction, prosody, and imagery in relation to oral reading.

**WOMEN'S STUDIES 988****Women's Studies Program**

*Hill Hall (973/353-5817)*

*Program Director: Frances Bartkowski*

The major in women's studies is offered at NCAS. The minor in women's studies is offered at NCAS and UC-N.

Women's history, with its distinctive culture, affects women's present status, education, and career development. New scholarship on the historical and contemporary contributions of women has influenced course offerings in many disciplines within the humanities, the social sciences, and the natural sciences. The interdisciplinary women's studies program provides a framework for the study of gender and the questions of culture, history, politics, and economics. The program is also committed to integrating new scholarship on race, ethnicity, and class together with perspectives on gender.

A variety of courses, including 21&62:988:201,202 Introduction to Women's Studies and 21&62:988:389,390 Topics in Women's Studies, are available to students who wish to direct their future career plans, studies, and research into fields requiring knowledge of the new scholarship on women.

Students are also required to pursue a final research project and/or an internship.

The final Independent Research in Women's Studies (21&62:988:401) requires a substantial research project, while the Women's Studies Internship (21&62:988:425) involves ongoing organizational work in the campus community or outside agencies.

**Major Requirements**

The major consists of 36 credits as follows:

12 credits of required core courses:

- 21&62:988:201 or 202 Introduction to Women's Studies
- or 21:988:325 Politics of Sexuality
- 21:988:301 Feminist History and Theory
- 21&62:988:389 or 390 Topics in Women's Studies
- 21&62:988:401 Independent Research in Women's Studies or 21&62:988:425 Women's Studies Internship

9 credits in humanities and social sciences from among the following:

- 21&62:350:362 Women in Literature
- 21&62:512:337 History of the Family in the United States
- 21&62:512:373,374 History of Women in the United States
- 21&62:790:356 Sex, Law, and Public Policy
- 21&62:830:373 Psychology of Women
- 21&62:920:306 Marriage and the Family
- 21&62:920:337 Sociology of Sex and Roles

15 credits from courses in a *minimum of three departments*, including:

- Afro-American Studies
- anthropology
- art
- classical and modern languages
- economics
- English
- history
- philosophy and religion
- political science
- psychology
- sociology



## Minor Requirements

The minor consists of 21 credits as follows:

3 credits from below:

21&62:988:201 or 202 Introduction to Women's Studies (3) or 21:988:325 Politics of Sexuality (3)

6 credits from below:

21&62:988:389,390 Topics in Women's Studies (3,3) and 21&62:988:401 Individual Research in Women's Studies (3) or 21&62:988:425 Women's Studies Internship (3)

In addition, students must choose 12 credits from related courses listed on this page.

## Courses

### 21&62:988:201,202. INTRODUCTION TO WOMEN'S STUDIES (3,3)

Addresses the historical influences that have defined women's roles and experiences and have contributed to current reevaluations of women's place in modern society; provides an overview of developments in various fields. 21&62:988:201 emphasizes the humanities. 21&62:988:202 emphasizes the social science perspectives.

### 21:988:301. FEMINIST HISTORY AND THEORY (3)

Focuses on understanding culture from a feminist perspective. Explores ways in which gender influences and is influenced by class, ethnicity, race, nationality, language, and religion.

### 21:988:325. POLITICS OF SEXUALITY (3)

Examines debates surrounding sex and sexuality in recent decades, while offering an historical perspective regarding other times and places. Addresses such realms as the family, state, church, school, and the law. Examines marginalized populations and their struggles regarding sexuality and its public and private expression.

### 21&62:988:389,390. TOPICS IN WOMEN'S STUDIES (3,3)

Varies each term.

### 21&62:988:401. INDIVIDUAL RESEARCH IN WOMEN'S STUDIES (3)

*Recommended for the minor in women's studies.*

Permits students to pursue further research in some aspect of women's studies with a faculty member. Requires a substantial research project.

### 21:988:425. WOMEN'S STUDIES INTERNSHIP (3)

*Recommended for the major or minor in women's studies.*

Permits students to take academic work into an activist arena on the campus and/or in the wider community.

## Related Courses

### 21&62:014:305. BLACK WOMEN IN THE UNITED STATES (3)

*See Afro-American and African Studies 014.*

### 21&62:070:340. COMPARATIVE ROLES OF WOMEN (3)

*See Anthropology 070.*

### 21&62:082:207. ART AND WOMEN (3)

*See Art History 082.*

### 21&62:220:312. WOMEN IN THE AMERICAN ECONOMY (3)

*See Economics 220.*

### 21&62:350:360. TOPICS IN WOMEN IN LITERATURE (3)

*See English 350.*

### 21&62:350:361,362. WOMEN IN LITERATURE (3,3)

*See English 350.*

### 21&62:420:311,312. FRENCH LITERATURE IN ENGLISH TRANSLATION: SEXUAL POLITICS IN THE NOVEL (3,3)\*

*See French 420.*

### 21&62:512:337. HISTORY OF THE FAMILY IN THE UNITED STATES (3)

*See American History 512.*

### 21&62:512:373,374. HISTORY OF WOMEN IN THE UNITED STATES (3,3)

*See American History 512.*

### 21&62:730:327. PHILOSOPHICAL ISSUES OF FEMINISM (3)

*See Philosophy 730.*

### 21&62:790:356. SEX, LAW, AND PUBLIC POLICY (3)

*See Political Science 790.*

### 21&62:830:323. CHILD PSYCHOLOGY (3)\*

*See Psychology 830.*

### 21&62:830:373. PSYCHOLOGY OF WOMEN (3)

*See Psychology 830.*

### 21&62:920:306. MARRIAGE AND THE FAMILY (3)

*See Sociology 920.*

### 21&62:920:337. SOCIOLOGY OF SEX AND ROLES (3)

*See Sociology 920.*

### 62:940:242. SPANISH LITERATURE IN TRANSLATION (3)

*See Spanish 940.*

\* Students wishing to enroll in this course should consult with the program director.

# Administration and Faculty

## Faculty of Arts and Sciences–Newark

Steven J. Diner, *Ph.D.*, *Dean of the Faculty*  
Edward G. Kirby III, *Ph.D.*, *Associate Dean for Academic Affairs and Dean of Instruction*  
Richard Da Silva, *B.A., M.I.M.*, *Associate Dean for Resources and Systems*  
Gerald Warshaver, *Ph.D.*, *Associate Dean for Administration*

## Newark College of Arts and Sciences and University College–Newark

Hill Hall (973/353-8500)

Steven J. Diner, *Ph.D.*, *Dean*  
Barbara Gossett, *Ph.D.*, *Dean of Student Affairs; Dean of Students (NCAS)*  
James I. Plummer, *M.S.W.*, *Dean of Students (UC–N)*  
Lydia Rodriguez, *M.S.W.*, *Associate Dean of Student Affairs*  
Thomas J. Hopkins, *M.A.*, *Director, Career Development Center*  
Michael Feder, *M.A.*, *Student Counselor*  
Barbara Moore, *B.S.*, *Student Counselor (UC–N)*  
Elizabeth Taylor, *B.S.*, *Student Counselor (NCAS)*  
Joseph H. Gardner III, *M.B.A.*, *Coordinator of Student Affairs*

## Academic Foundations Center

Conklin Hall (973/353-5604)

Janice S. Robinson, *M.A., Ed.M., J.D.*, *Associate Dean of Academic Affairs; Director of Academic Foundations Center*  
Concepcion Wibrowski, *M.A., Ph.D.*, *Assistant Dean; Associate Director of Academic Foundations Center*  
Dianne Hill, *M.A.*, *Assistant Director*  
Rose Bailey-Byers, *M.A.*, *Counselor*  
Elizabeth Hevia-McAllister, *M.S.W.*, *Counselor*  
Carl Milton, *M.A., M.S.E.*, *Counselor*  
Gloria Perez, *M.S.W.*, *Counselor*  
Brian Taylor, *B.A.*, *Counselor*  
Israel Rodriguez, *B.A.*, *Student Affairs and Enrollment Administrator*

## Department of Academic Foundations

Conklin Hall (973/353-5434)

*Acting Chairperson:* William Jones

*Associate Professors:*

William Jones, *B.A., Rutgers; M.A., Columbia*  
Arthur B. Powell, *B.A., Hampshire College; M.S., Michigan*

*Assistant Professors:*

Sol Magzamen, *B.S., CUNY; M.S., New York; M.Ph., Ph.D., CUNY*  
Roberta Shorr, *B.S., Brooklyn College; Ed.M., Ed.D., Rutgers*

## Department of Afro-American and African Studies

Conklin Hall (973/353-5528)

*Chairperson:* Clement Alexander Price

*Professor:*

Clement Alexander Price, *B.A., M.A., Bridgeport; Ph.D., Rutgers–Newark*

*Associate Professor:*

Wendell P. Holbrook, *B.A., Morgan State; Ph.D., Princeton*

*Assistant Professors:*

Belinda Edmondson, *B.A., Southern Illinois; M.A., Ph.D., Northwestern*  
Jesse A. Rhines, *B.A., Antioch; M.A., UCLA; M.A., Yale; Ph.D., California (Berkeley)*

## Department of Biological Sciences (Federated with New Jersey Institute of Technology)

Room 135, Smith Hall (973/353-5347)

*Acting Chairperson:* David Kafkewitz

*Associate Chairperson of Undergraduate Studies:* Douglas W. Morrison

*Professors:*

Ann Cali, *B.S., Florida; M.S., Ph.D., Ohio State*  
Harvey H. Feder, *B.S., CUNY (City College); Ph.D., Oregon Medical School*  
Gerald D. Frenkel, *B.A., Columbia; Ph.D., Harvard*  
Ronald P. Hart, *B.S., Connecticut; Ph.D., Michigan*  
G. Miller Jonakait, *A.B., Wellesley College; M.A., Chicago; Ph.D., Cornell Medical School*

David Kafkewitz, *B.S., CUNY (Brooklyn College); M.S., Ph.D., Cornell*

Edward G. Kirby III, *B.S., Michigan; M.S., Ph.D., Florida*

Judith S. Weis, *M.S., Ph.D., New York*

Daniel C. Wilhoft, *B.A., Rutgers; M.A., Ph.D., California (Berkeley)*

*Associate Professors:*

Edward M. Bonder, *B.A., Ph.D., Pennsylvania*  
Leonard I. Borack, *B.S., Tufts; M.S., Ph.D., New York*  
John H. Crow, *B.A., Whittier College; Ph.D., Washington State*  
Doina Ganea, *B.S., Bucharest; Ph.D., Illinois*  
Lion F. Gardiner, *B.S., Wheaton College; M.S., Michigan; Ph.D., Rhode Island*  
Andrew E. Kasper, *B.A., Duquesne; M.S., Ph.D., Connecticut*  
John M. Maiello, *B.A., CUNY (Hunter College); Ph.D., Rutgers*  
Douglas W. Morrison, *A.B., Rochester; Ph.D., Cornell*  
Danny J. Schnell, *B.S., Nebraska; Ph.D., California (Davis)*

*Assistant Professors:*

Erik P. Hamerlynck, *B.S., M.S., Wyoming; Ph.D., Kansas*  
Geoffrey M. Henebry, *B.A., St. Johns; M.S., Ph.D., Texas (Dallas)*  
Eric B. Knox, *B.S., Illinois; M.S., Wisconsin; Ph.D., Michigan*  
Farzan Nadim, *B.S., Northeastern; M.A., Ph.D., Boston*

## Department of Chemistry

Olson Hall (973/353-5329)

*Chairperson:* Frank Jordan

*Professors:*

R. Ian Fryer, *B.S., California (Los Angeles); Ph.D., Manchester (England)*  
Stan S. Hall, *B.S., Wisconsin; Ph.D., Massachusetts Institute of Technology*  
Frank Jordan, *B.S., Drexel; Ph.D., Pennsylvania*  
Rudolph W. Kluber, *B.S., Illinois; M.A., Columbia; Ph.D., Wisconsin*  
Roger A. Lalancette, *B.A., American International College; Ph.D., Fordham*  
Richard Mendelsohn, *B.S., McGill; Ph.D., Massachusetts Institute of Technology*  
Ernst U. Monse, *M.S., Ph.D., Mainz (Germany)*  
James M. Schlegel, *B.S., Pacific; Ph.D., Iowa State*  
Hugh W. Thompson, *B.A., Cornell; Ph.D., Massachusetts Institute of Technology*

*Associate Professors:*

W. Phillip Huskey, *B.S., Texas A&M; Ph.D., Kansas*  
Piotr Piotrowiak, *M.S., Wroclaw (Poland); Ph.D., Chicago*  
Susanne Raynor, *B.S., Duke; Ph.D., Georgetown*  
John B. Sheridan, *B.S., Ph.D., Bristol (England)*

*Assistant Professors:*

Ramy S. Farid, *B.S., Rochester; Ph.D., California Institute of Technology*  
Elena Galoppini, *M.S., Pisa (Italy); Ph.D., Chicago*

## Department of Classical and Modern Languages and Literatures

Conklin Hall (973/353-5498)

*Chairperson:* Elpidio Laguna-Diaz

*Program Director for Classical Civilization:* Gloria S. Merker

*Professors:*

Josephine B. Grieder, *French; B.A., Nevada; M.A., California; Ph.D., New York*  
Carmine A. Mezzacappa, *Italian; B.A., M.A., Ph.D., New York*  
Gloria S. Merker, *Classics; B.A., Queen's College; M.A., Missouri; Ph.D., Bryn Mawr*

Mary Plevich-Darretta, *Spanish; B.A., CUNY (Hunter College); M.A., Ph.D., Columbia*

Leonard J. Wang, *French; B.A., CUNY (City College); M.A., Ph.D., Columbia*  
Otto Zitzelsberger, *German; B.A., CUNY (City College); M.A., Ph.D., Columbia*

#### Associate Professors:

Marie M. Collins, *French; B.A., Trinity; M.A., Middlebury College; Ph.D., New York*  
Nancy G. Diaz, *Spanish; B.A., Illinois; M.A., CUNY; Ph.D., Rutgers*  
Elpidio Laguna-Díaz, *Spanish; B.A., Puerto Rico; M.A., St. John's; Ph.D., CUNY*  
Irwin L. Merker, *Classics; B.A., New York; M.A., Ph.D., Princeton*  
Asela Rodríguez de Laguna, *Spanish; B.A., Puerto Rico; M.A., Ph.D., Illinois*  
Robert R. Stieglitz, *Hebraic Studies; B.A., CUNY (City College); M.A., Ph.D., Brandeis*  
Myroslava T. Znayenko, *Slavic; B.A., California; M.A., Yale; Ph.D., Columbia*

## Criminal Justice Program

*S.I. Newhouse Center for Law and Justice (973/353-1300)*

#### Professors:

Freda Adler, *B.A., M.A., Ph.D., Pennsylvania*  
Ronald V. Clarke, *B.A., Bristol; M.A., Ph.D., London*  
Marcus Felson, *B.A., Chicago; M.A., Ph.D., Michigan*  
James O. Finckenaue, *B.A., Gettysburg; M.A., Ph.D., New York*  
Clayton A. Hartjen, *B.A., M.A., San Francisco State; Ph.D., New York*  
George L. Kelling, *B.A., St. Olaf; M.S., Wisconsin (Milwaukee); Ph.D., Wisconsin (Madison)*  
Leslie W. Kennedy, *B.A., McGill; M.A., Western Ontario; Ph.D., Toronto*  
Michael G. Maxfield, *B.A., Ohio State; M.A., Ph.D., Northwestern*  
Gerhard O.W. Mueller, *B.A., Castle of Plöen College; J.D., Chicago; L.L.M., Columbia; L.L.D. (hon.) Uppsala (Sweden)*  
Nathaniel J. Pallone, *A.B., A.M., Catholic; Ph.D., New York*

#### Associate Professors:

Ko-lin Chin, *B.A., National Taiwan; M.B.A., M.A., Houston; Ph.D., Pennsylvania*  
Candace McCoy, *B.A., Hiram College; J.D., Cincinnati; M.A., Ph.D., California (Berkeley)*  
Mercer L. Sullivan, *B.A., Yale; Ph.D., Columbia*

#### Assistant Professor:

Bonita M. Veysey, *B.A., M.S., Ph.D., SUNY (Albany)*

## Department of Economics

*Hill Hall (973/353-5259)*

*Chairperson:* Peter D. Loeb

#### Professors:

Douglas C. Coate, *B.A., Oregon; Ph.D., CUNY*  
John Graham, *B.A., Brown; Ph.D., Northwestern*  
Peter D. Loeb, *B.A., M.A., Ph.D., Rutgers*  
Leo Troy, *B.A., Pennsylvania State; M.A., Ph.D., Columbia*  
James H. VanderHoff, *B.S., Michigan State; Ph.D., North Carolina*

#### Associate Professors:

Alvaro Rodríguez, *B.A., Universidad de los Andes; Ph.D., Columbia*  
Carlos Seiglie, *B.A., Stanford; Ph.D., Chicago*

#### Assistant Professors:

Gabriella Cagliesi, *B.A., Ph.D., Pennsylvania*  
David Goldbaum, *B.A., Oberlin; M.S., Ph.D., Wisconsin*  
Yanni Tournas, *B.A., Athens; M.A., Illinois; Ph.D., Northwestern*

## Department of Education

*Conklin Hall (973/353-5245)*

*Chairperson:* Jean Anyon

#### Associate Professors:

Jean Anyon, *B.A., M.S., Pennsylvania; Ph.D., New York*  
James A. Scott, *B.A., Lincoln; B.D., Yale; M.C.R.P., Ph.D., Rutgers*

#### Director of Field and Laboratory Services:

Jane Califf, *B.S., Hofstra; M.S., Richmond College*

## Department of English

*Hill Hall (973/353-5279)*

*Chairperson:* Gabriel Miller

#### Professors:

Marianna DaVinci-Nichols, *B.A., Hunter College; Ph.D., New York*  
John G. Demaray, *B.A., Seton Hall; M.A., Ph.D., Columbia*  
Barbara Foley, *B.A., Harvard; M.A., Ph.D., Chicago*  
H. Bruce Franklin, *B.A., Amherst College; Ph.D., Stanford*  
Rachel Hadas, *B.A., Radcliffe College; M.A., Johns Hopkins; Ph.D., Princeton*

Carol F. Heffernan, *B.A., Barnard College; M.A., Wisconsin; Ph.D., New York*  
Michael C. Jaye, *B.A., CUNY (City College); M.A., Ph.D., New York*  
Gabriel Miller, *B.A., Queens College; Ph.D., Brown*  
Virginia M. Tiger, *B.A., Trinity; M.A., Ph.D., British Columbia*  
Allan L. Wolper, *B.A., New York*

#### Associate Professors:

Frances Bartkowski, *B.A., Montclair State College; M.A., Ph.D., Iowa*  
Louie Crew, *B.A., Baylor; M.A., Auburn; Ph.D., Alabama*  
George B. Davis, *B.A., Colgate; M.F.A., Columbia*  
Belinda Edmondson, *B.A., Southern Illinois; M.A., Ph.D., Northwestern*  
Heyward B. Ehrlich, *M.A., Chicago; Ph.D., New York*  
Stuart Hirschberg, *A.B., Columbia; M.A., Wagner College; Ph.D., New York*  
David A. Hoddeson, *B.A., Bard College; M.A., New York; Ph.D., SUNY*  
Malcolm Kiniry, *B.A., Tufts; M.A., Ph.D., Rutgers*  
Janet Louise Larson, *A.B., Valparaiso; M.A., Ph.D., Northwestern*  
Charles Russell, *B.A., Wesleyan; Ph.D., Cornell*  
Ann Watts, *B.A., Radcliffe College; M.A., Ph.D., Yale*

#### Assistant Professors:

David Baker, *B.A., Bennington College; M.A., Ph.D., Columbia*  
Sterling Bland, *B.A., M.A., Rutgers; Ph.D., New York*  
Jack Lynch, *B.A., Ph.D., Pennsylvania*  
S. Shankar, *B.A., M.A., Madras (India); Ph.D., Texas*

## Department of Geological Sciences

*Boyden Hall (973/353-5100)*

*Chairperson:* Andreas H. Vassiliou

#### Professors:

Warren Manspeizer, *B.S., CUNY (City College); M.S., West Virginia; Ph.D., Rutgers*  
John H. Puffer, *B.S., M.S., Michigan State; Ph.D., Stanford*  
Andreas H. Vassiliou, *B.S., M.A., Ph.D., Columbia*

#### Associate Professor:

Alexander E. Gates, *B.S., SUNY (Stony Brook); M.S., Ph.D., Virginia Polytechnic Institute*

#### Assistant Professors:

Victoria C. Hover, *B.A., Michigan; M.S., SUNY (Stony Brook); Ph.D., Michigan*  
Samuel T. Peavy, *B.S., McNeese State; M.S., Memorial; Ph.D., Virginia Polytechnic Institute*

## Department of History

(Federated with New Jersey Institute of Technology)

*Conklin Hall (973/353-5410)*

*Chairperson:* Lauren Benton

#### Professors:

Norma Basch, *B.A., Barnard; M.A., Ph.D., New York*  
Steven J. Diner, *B.A., SUNY (Binghamton); Ph.D., Chicago*  
Peter B. Golden, *B.A., Queen's College; Ph.D., Columbia*  
David Hosford, *B.A., Bates; Ph.D., Wisconsin*  
Taras Hunczak, *B.S., M.A., Fordham; Ph.D., Vienna*  
Warren F. Kimball, *B.A., Villanova; M.A., Ph.D., Georgetown*  
Jan E. Lewis, *B.A., Bryn Mawr; A.M., A.M., Ph.D., Michigan*  
Jonathan Lurie, *A.B., M.A.T., Harvard; Ph.D., Wisconsin*  
John O'Connor, *B.A., St. John's; M.A., Ph.D., CUNY*  
Clement Alexander Price, *B.A., M.A., Bridgeport; Ph.D., Rutgers*  
Said S. Samatar, *B.A., Goshen College; M.A., Ph.D., Northwestern*  
Richard Sher, *B.A., George Washington; M.A., Ph.D., Chicago*  
Odoric Y. Wou, *B.A., M.A., Hong Kong; Ph.D., Columbia*

#### Associate Professors:

Lauren Benton, *A.B., Harvard; M.A., Ph.D., Johns Hopkins*  
James Goodman, *B.A., Hobart College; M.A., New York; M.A., Ph.D., Princeton*  
Irwin L. Merker, *B.A., New York; M.A., Ph.D., Princeton*  
Frederick H. Russell, *B.A., Swarthmore College; M.A., Chicago; M.A., Ph.D., Johns Hopkins*  
Beryl Satter, *B.A., Barnard; M.T.S., Harvard; M.A., Ph.D., Yale*  
Gabor P. Vermes, *B.S., Budapest (Hungary); M.A., Ph.D., Stanford*  
Olga J. Wagenheim, *B.A., Inter-American University (Puerto Rico); M.A., SUNY (Buffalo); Ph.D., Rutgers*

#### Assistant Professors:

Jon Cowans, *B.S., Georgetown; M.A., Ph.D., Stanford*  
Lisa Herschbach, *B.A., M.A., Stanford; Ph.D., Harvard*  
Doris Sher, *B.A., CUNY (City College); M.A., Columbia*  
Martin Summers, *B.A., Hampton College; Ph.D., Rutgers*

## Department of Mathematics and Computer Science

Smith Hall (973/353-5156)

Chairperson: Ulrich Oertel

Undergraduate Program Director: Edward S. Boylan

Professors:

Jane Gilman, B.S., Chicago; Ph.D., Columbia

Lee Mosher, B.S., Michigan State; Ph.D., Princeton

Diana Shelstad, B.A., Tasmania; M.Sci., Monash; Ph.D., Yale

Associate Professors:

Edward S. Boylan, A.B., Columbia; M.A., Ph.D., Princeton; M.S., Stevens Institute of Technology

Mark Feighn, Sci.B., Brown; M.A., Ph.D., Columbia

William F. Keigher, B.A., Montclair State College; A.M., Ph.D., Illinois

C. David Keys, B.S., Louisiana State; M.S., Ph.D., Chicago

Henry W. Levinson, B.S., Columbia; M.S., Ph.D., New York

Ulrich Oertel, B.Sci., Edinburgh; M.A., Ph.D., UCLA

John Randall, B.A., Sidney Sussex College (Cambridge); M.Sc., Ph.D., Warwick (Great Britain)

Robert Szczech, Diploma, Dr. Nat., Bonn

Jacob Sturm, B.S., Columbia; Ph.D., Princeton

Assistant Professors:

Li Guo, B.S., Lanzhou (China); M.S., Wuhan (China); Ph.D., University of Washington

Zhengyu Mao, B.S., Shanghai Jiaotong; Ph.D., Columbia

Michah Sageev, B.S., Massachusetts Institute of Technology; Ph.D., California (Berkeley)

## Department of Philosophy

Conklin Hall (973/353-5029)

Chairperson: Pheroze S. Wadia

Professors:

Edwin M. Hartman, B.A., Haverford College; B.A., M.A., Oxford (Balliol College); M.B.A., Pennsylvania (Wharton School); Ph.D., Princeton

Albert Sweet, M.A., Tulane; B.A., Ph.D., Emory

Pheroze S. Wadia, B.A., St. Xavier's College (Bombay, India); M.A., Ph.D., New York

Associate Professors:

Nancy Holmstrom, B.A., CUNY (City College); Ph.D., Michigan

Michael D. Rohr, B.A., Harvard; Ph.D., Stanford

## Department of Physics

Smith Hall (973/353-5250)

Chairperson: Earl D. Shaw

Professors:

Daniel E. Murnick, B.A., Hofstra; Ph.D., Massachusetts Institute of Technology

Earl D. Shaw, B.S., Illinois; M.A., Dartmouth; Ph.D., California (Berkeley)

Grace Marmor Spruch, B.A., CUNY (Brooklyn College); M.S., Pennsylvania; Ph.D., New York

Associate Professor:

Zhen Wu, M.A., M.Phil., Ph.D., Columbia

Assistant Professor:

Hubert H. Burke, B.A., Earlham College; M.S., Ph.D., Columbia

## Department of Political Science

Hill Hall (973/353-5105)

Chairperson: Yale H. Ferguson

Professors:

Melvin J. Dubnick, B.A., Southern Colorado; M.A., Ph.D., Colorado

Yale H. Ferguson, B.A., Trinity; Ph.D., Columbia

Frank Fischer, B.A., Indiana; Ph.D., New York

Richard T.B. Langhorne, B.A., M.A., Cambridge (St. John's)

Mary C. Segers, B.A., College of Mount St. Vincent; Ph.D., Columbia

Associate Professor:

Elizabeth A. Hull, B.A., Whitman College; M.A., Ph.D., New School for Social Research

Assistant Professors:

Reynold Koslowski, B.A., Wesleyan; Ph.D., Pennsylvania

Rosemary Nossiff, B.A., New Hampshire; M.A., Ph.D., Cornell

Elizabeth Strom, B.A., Swarthmore College; M.A., Ph.D., CUNY

Virginia Walsh, B.S., Georgetown; Ph.D., Southern California

## Department of Psychology

Smith Hall (973/353-5436)

Chairperson: Stephen José Hanson

Professors:

Colin Beer, B.S., Otago (New Zealand); Ph.D., Oxford

John A. Ceraso, B.A., CUNY (Brooklyn College); M.A., Ph.D., New School for Social Research

Mei-Fang Cheng, B.S., National Taiwan; Ph.D., Bryn Mawr

Alan L. Gilchrist, B.A., Portland State; M.A., Ph.D., Rutgers

Barry R. Komisaruk, B.S., CUNY (City College); Ph.D., Rutgers

Kenneth Kressel, B.A., CUNY (Queens College); Ph.D., Columbia

Lillian Robbins, B.A., CUNY (City College); M.A., Illinois; Ph.D., New York

Jay S. Rosenblatt, B.A., M.A., Ph.D., New York

Associate Professors:

Stephen José Hanson, B.S., Ph.D., Arizona State

Maggie Shiffar, B.A., California (Santa Cruz); Ph.D., Stanford

Harold I. Siegel, B.A., Ph.D., Rutgers

Assistant Professor:

Ben Martin Bly, B.A., Princeton; Ph.D., Stanford

## Puerto Rican Studies Program

Conklin Hall (973/353-1052)

Program Director: Olga Jimenez Wagenheim

Affiliated Faculty:

Elpidio Laguna-Diaz, B.A., Puerto Rico (Rio Piedras); M.A., St. John's; Ph.D., CUNY

Asela Rodriguez de Laguna, B.A., Puerto Rico (Mayaguez); M.A., Ph.D., Illinois (Urbana-Champaign)

Olga Jimenez Wagenheim, B.A., Inter-American University of Puerto Rico; M.A., SUNY (Buffalo); Ph.D., Rutgers

## Department of Social Work

Hill Hall (973/353-5145)

Chairperson: Phylis J. Peterman

Associate Professor:

Paul G. Shane, B.A., Cornell; M.S.S.W., Columbia; M.P.H., Sci.D., Johns Hopkins

Assistant Professors:

Sunday L. Di Palma, B.A., M.S.W., Ph.D., Rutgers

Phylis J. Peterman, B.A., Howard; M.S.W., Rutgers; D.S.W., Columbia

Director of Field Instruction:

Carol J. Dobos, B.A., M.S.W., Rutgers

## Department of Sociology and Anthropology

Hill Hall (973/353-5255)

Chairperson: Clayton A. Hartjen

Professor:

Clayton A. Hartjen, B.A., M.A., San Francisco State; Ph.D., New York

Associate Professors:

Anne-Marie Cantwell, B.A., Columbia; M.A., Ph.D., New York

Ira J. Cohen, B.A., Union College; M.S., Pennsylvania State; Ph.D., Wisconsin

R. Brian Ferguson, M.A., M.Phil., Ph.D., Columbia

Janet Siskind, B.A., Sarah Lawrence; Ph.D., Columbia

Assistant Professors:

Alexander Hinton, B.A., Wesleyan; M.A., Ph.D., Emory

Vibha Pingle, B.A., Delhi (India); M.A., Ph.D., Brown

Kurt Schock, B.A., Cincinnati; M.A., Ph.D., Ohio State



## Department of Visual and Performing Arts

Bradley Hall (973/353-5119, ext. 10)

Chairperson: Annette Juliano

Deputy Chairperson: Frank J. D'Astolfo

### Professors:

Frank J. D'Astolfo, B.A., *Pennsylvania State*; M.A., *Pittsburgh*

Annette Juliano, B.A., *Rutgers (Newark)*; M.A., *Pennsylvania*; Ph.D.,

*Institute of Fine Arts (New York)*

Sandra Skoglund, B.A., *Smith College*; M.A., M.F.A., *Iowa*

### Associate Professors:

John E. Floreen, B.Mus., *Gustavas Adolphus College*; M.S.M., *Union*

*Theological Seminary*; D.M.A., *Iowa*

Stephen Laub, B.A., M.A., *California (Berkeley)*

Henry Martin, B.Mus., *Oberlin*; M.M., *Michigan*; Ph.D., *Princeton*

Lewis Porter, B.A., *Rochester*; M.A., *Tufts*; Ph.D., *Brandeis*

Ian Watson, B.A., *Sydney*; M.A., Ph.D., *New York*

J. Kenneth Wilson, B.Mus., *Eastman School of Music*; M.Mus., *Yale*; A.M.,

Ph.D., *Harvard*

### Assistant Professors:

William Bauer, B.S., *SUNY (Empire State College)*; M.A., *Columbia*; M.Phil.,

*CUNY (Graduate School)*

Ned Drew, B.F.A., M.F.A., *Virginia Commonwealth*

Deborah M. Saivetz, B.S., M.A., Ph.D., *Northwestern*

Denyse N. Thomasos, B.A., *Toronto*; M.F.A., *Yale*

Paul S. Sternberger, B.A., *Rochester*; M.A., M.Phil., *Columbia*

# Consortium with New Jersey Institute of Technology

Adjacent to the Newark campus of Rutgers is New Jersey Institute of Technology (NJIT), which has a student enrollment of approximately 8,200. Rutgers–Newark and NJIT enjoy an exceptionally close and productive consortial relationship within the thriving “University Heights” section of Newark. Each year the two universities cosponsor a common season of theatrical productions, a multicultural street fair (“World Week”), a joint program of honors colloquia, and a variety of other cultural and social activities. Rutgers–Newark students have library privileges at the Robert W. Van Houten Library of NJIT. They also may enrich their educational experiences by enrolling in NJIT courses in areas not offered at Rutgers–Newark. NJIT courses are regularly listed in the Rutgers–Newark scheduling bulletin in order to facilitate the cross-registration process. Joint or cooperative degree programs now exist in several graduate and undergraduate fields, including the bachelor’s programs in applied mathematics, applied physics, computer science, history, information systems, and science, technology, and society (STS). As a result of this consortial relationship, the opportunities available to students at both schools are greatly enhanced.

In the disciplines of art and design, computer science, environmental sciences, history, philosophy, physics, and theater, the NJIT courses listed in this chapter are available to Rutgers–Newark students who have the appropriate prerequisite preparation. Science, technology, and society, a collaborative program between Rutgers–Newark and NJIT, provides students in the Newark College of Arts and Sciences full access to the wide array of NJIT courses listed. Additionally, with appropriate departmental permission, undergraduate students also may take advantage of numerous other NJIT course offerings, which are listed in Rutgers’ fall or spring term *Schedule of Classes*.

## COURSES

### Art and Design (NJIT)

#### Arch 251. HISTORY OF ARCHITECTURE I (3-0-3)

*Prerequisite: Arch 103.*

A survey of the social, political, technological, functional, and aesthetic concerns of Western architecture from its earliest beginnings.

#### Arch 252. HISTORY OF ARCHITECTURE II (3-0-3)

*Prerequisite: Arch 251.*

A continuation of Arch 251, bringing the survey of the continuing evolution of Western architectural works and ideas up to 1800.

**Arch 403. THE AMERICAN HOME AND HOUSEHOLD I (3-0-3)**

*Prerequisite: Junior or senior standing.*

A cultural, architectural analysis of American homes and households throughout history, exploring the Puritan society and Colonial home, Victorian home and family, frontier homestead, nineteenth-century utopian communes, immigrants, the working class poor and urban tenements, war housing, and suburban homes. Students explore the meaning, use, and design of each domestic setting from the point of view of society, the family, and the individual, considering differences based on race, sex, and class.

**Arch 404. THE AMERICAN HOME AND HOUSEHOLD II (3-0-3)**

*Prerequisite: Junior or senior standing.*

Analyzes the architecture of twentieth-century American homes and households, hotels, apartment houses, war housing, suburban homes, public projects, collectives, communes, self-help housing, and housing concepts for the future. Psychological, sociological, and cultural perspectives as they affect architecture of the home.

**Arch 530. METHODOLOGIES OF ARCHITECTURAL HISTORY, THEORY, AND CRITICISM (3-0-3)**

*Prerequisites: Arch 251, Arch 252.*

A seminar examining the salient methodologies of architectural history, theory, and criticism. Structured around a series of critical texts, with each set of core readings intended to provide a basis for analyzing and assessing the approach in question.

**Arch 531A. HISTORY OF RENAISSANCE ARCHITECTURE (3-0-3)**

*Prerequisites: Arch 251, Arch 252.*

An examination of the development of Renaissance architecture and urban design in Italy and elsewhere in Europe. The reemergence of the classical tradition is considered within the context of social, political, and economic developments, as well as formal intentions.

**Arch 531B. HISTORY OF BAROQUE ARCHITECTURE (3-0-3)**

*Prerequisites: Arch 251, Arch 252.*

An investigation of architectural development from the seventeenth and eighteenth centuries in Europe and Latin America, including consideration of stylistic variations, social and political factors, and trends in garden and urban design.

**Arch 531C. HISTORY OF MODERN ARCHITECTURE (3-0-3)**

*Prerequisites: Arch 251, Arch 252.*

A study of major tendencies of architectural theory and practice from the mid-nineteenth to the mid-twentieth centuries. Formal and stylistic transformation is considered in relation to theoretical intentions, as well as social, cultural, and technical developments.

**Arch 531D. HISTORY OF AMERICAN ARCHITECTURE (3-0-3)**

*Prerequisites: Arch 251, Arch 252.*

An investigation of the guiding ideals and dominant stylistic trends in American architecture and planning from colonial times to the midtwentieth century. Critical shifts in conception and scope of architectural production considered in relation to the prevailing cultural, socioeconomic, and technical contexts out of which they evolved.

**Arch 531E. HISTORY OF NON-WESTERN ARCHITECTURE (3-0-3)**

*Prerequisites: Arch 251, Arch 252.*

An examination of major architectural traditions of China, Japan, Southeastern Asia, India, and the Middle East. Each area is considered with reference to a conceptual, iconographic, and stylistic paradigm that evolved from a particular historical context.

**Computer and Information Science (NJIT)****CIS 105. COMPUTER PROGRAMMING (1-1-1)**

*Prerequisite: 100-level GUR course in CIS. May be repeated for credit when a different language is used. Students may repeat CIS 105 with different, department-approved languages and may combine three 1-credit courses (including CIS 305) to be used as a technical elective in a CIS degree program. For students taking a minor in CIS or changing to a CIS major, a combination of an approved CIS 105 and a 100-level GUR course in CIS may be substituted for CIS 113.*

Details of programming in one particular computer language. Problems are coded and run on a computer. Languages include ADA, APL, C, C++, FORTRAN, LISP, Pascal, PROLOG, Smalltalk, Java, COBOL, or others.

**CIS 113. INTRODUCTION TO COMPUTER SCIENCE I (3-1-3)**

*Corequisite: CIS 098 or satisfactory performance on placement examination. Open only to science and liberal arts majors. Degree credit not given for both this course and CIS 213.*

Fundamentals of computer science introduced, with emphasis on programming methodology and problem solving. Topics include basic concepts of computer systems, software engineering, algorithm design, programming languages and data abstraction, with applications. A high-level language is fully discussed and serves as the vehicle to illustrate many of the concepts. C++ is used.

**CIS 114. INTRODUCTION TO COMPUTER SCIENCE II (3-1-3)**

*Prerequisites: CIS 113 or completion of a required 100-level GUR course in CIS, plus an approved CIS 105. Degree credit not given for both this course and either CIS 335 or CIS 505.*

Study of advanced programming topics with logical structures of data, their physical representation, design and analysis of computer algorithms operating on the structures, and techniques for program development and debugging. Covers program specifications, correctness and efficiency, data abstraction, basic aspects of simple data structures, internal searching and sorting, recursion, and string processing. Algorithmic analysis is also discussed.

**CIS 213. INTRODUCTION TO COMPUTER SCIENCE (3-0-3)**

*Prerequisite: 100-level GUR course in CIS. Designed for students not majoring in computer science. Students receiving degree credit for CIS 213 cannot receive degree credit for CIS 113.*

A study of the representation of data, its structures, and algorithms. Programming topics in high-level languages (such as C, C++, etc.) are included.

**CIS 231. MACHINE AND ASSEMBLY LANGUAGE PROGRAMMING (3-1-3)**

*Prerequisites: CIS 113 or CIS 213 or completion of a required 100-level GUR course in CIS, plus an approved CIS 105. Degree credit not given for both this course and CIS 510.*

Fundamentals of machine organization and machine language programming. Representation of computer instructions and data in machine, assembly and macro-assembly languages together with intensive practice in formulating programming, running, and debugging programs for both numerical and logical problems. Assemblers and loaders are discussed.

**CIS 251. COMPUTER ORGANIZATION (3-0-3)**

*Prerequisite: CIS 113.*

Introduction to computer system structure and organization. Topics include representation of information, circuit analysis and design, register-transfer level, processor architecture, and input/output.

**CIS 265. INFORMATION SYSTEMS AND PRODUCTIVITY TOOLWARE (3-0-3)**

*Prerequisite: 100-level GUR course in computer science.*

Study how organizations use information technology. This course is an overview of the information systems discipline, the role of information systems in organizations, and the changing nature of information technology. Computer tools for analysis and presentation are used.

**CIS 270. MULTIMEDIA INFORMATION SYSTEMS (3-0-3)**

*Prerequisites: CIS 113 or completion of a required 100-level GUR course in CIS, plus an approved CIS 105. Degree credit not given for both this course and either CIS 335 or CIS 505.*

Combines text, graphics, sound, video, and animation in a single application. Creation of multimedia information systems. Explores the many issues involving technology, design, and effectiveness of multimedia applications. Programming techniques for integrating video, sound, animation, and graphics. Design strategies for multimedia information systems.

**CIS 280. PROGRAMMING LANGUAGE CONCEPTS (3-0-3)**

*Prerequisite: CIS 114 or equivalent.*

Conceptual study of programming language syntax, semantics, and implementation. Course covers language definition structure, data types and structures, control structures and data flow, run-time consideration, and interpretative languages.

**CIS 332. PRINCIPLES OF OPERATING SYSTEMS (3-0-3)**

*Prerequisite: CIS 114.*

Organization of operating systems covering structure, process management and scheduling; interaction of concurrent processes; interrupts; I/O, device handling; memory and virtual memory management and file management.

**CIS 333. INTRODUCTION TO UNIX OPERATING SYSTEMS (3-0-3)**

*Prerequisites: CIS 332 or equivalent, and knowledge of C language.*

Covers the UNIX system kernel including initialization, scheduling, context switching, process management, memory management, device management, and the file system. The course also includes the organization of shells, editors, utilities, and programming tools of the UNIX operating system.

**CIS 335. DATA STRUCTURES AND ALGORITHM DESIGN (3-0-3)**

*Prerequisites: CIS 113 or completion of a required 100-level GUR course in CIS, plus an approved CIS 105. Degree credit not given for both this course and either CIS 114 or CIS 505.*

Advanced programming topics dealing with logical structures of data, their hardware representation, and the design and analysis of computer algorithms operating on the structures. Concentrates on data structures: primitive types, stacks, queues, arrays, sets, linked lists, trees, and graphs. Basic operations using these data structures including sorting, searching, and memory management.

**CIS 341. INTRODUCTION TO LOGIC AND AUTOMATA (3-0-3)**

*Prerequisites: Completion of a 100-level GUR course in CIS; Math 226.*

Introduction to logic and formal grammars. Theoretical models such as finite state machines, push-down stack machines, and Turing machines are developed and related to issues in programming language theory.

**CIS 350. COMPUTERS AND SOCIETY (3-0-3)**

*Prerequisites: Completion of a 100-level GUR course in CIS; one SS course; HSS 101.*

Examines the historical evolution of computer and information systems and explores their implications in the home, business, government, medicine, and education. Topics include automation and job impact, privacy, and legal and ethical issues.

**CIS 352. PARALLEL COMPUTERS AND PROGRAMMING (3-0-3)**

*Prerequisites: CIS 251 or CoE 252, CIS 332.*

Introduction to parallel computers and parallel programming. General structures and design techniques of parallel computers are described. Programming paradigms and algorithm design considerations for parallel processors also are discussed.

**CIS 353. ADVANCED COMPUTER ORGANIZATION (3-0-3)**

*Prerequisite: CIS 251 or instructor-approved equivalent. Not open to students who have completed CoE 451/352.*

Emphasis on the basic design principles of various components in a computer, as well as how the components are organized to build a computer. Topics include: design methodology, arithmetic and logic unit design, control unit design, memory hierarchy, memory system design, input and output devices, peripheral devices, and interfacing computers using software. A software simulation package is used to help the learning process. Students build a computer.

**CIS 365. FILE STRUCTURES AND MANAGEMENT (3-0-3)**

*Prerequisites: CIS 280, or CIS 114 and knowledge of COBOL.*

Design and implementation of commercial application software systems. Concepts of organization and management of data and files including file operations and organization of sequential access, relative access, indexed sequential access, virtual storage access, and multi-key access methods. COBOL language is used to illustrate these concepts and to implement application systems.

**CIS 370. INTRODUCTION TO ARTIFICIAL INTELLIGENCE (3-0-3)**

*Prerequisites: CIS 114, Math 226.*

Exploration of concepts, approaches, and techniques of artificial intelligence. Emphasizes both underlying theory and applications. Topics include knowledge representation, parsing language, search, logic, abduction, uncertainty, and learning. LISP and Prolog programming languages used extensively. Programming assignments and term project; review of case studies.

**CIS 375. APPLICATIONS DEVELOPMENT FOR THE WORLD WIDE WEB (3-0-3)**

*Prerequisite: CIS 332.*

A state-of-the-art computer programming language/environment, such as Java and related tools, is studied and used as a vehicle to build applications that involve graphical user-interfaces, simple graphics, multithreading, images, animation, audio, database connectivity, remote objects, and networking.

**CIS 381. OBJECT-ORIENTED SOFTWARE SYSTEMS DESIGN (3-0-3)**

*Prerequisite: CIS 280.*

Object-oriented methodology for software development. Analysis, design, and implementation of object-orientation software systems in the context of software engineering. Software projects developed using object-oriented programming language (e.g., C++, Smalltalk).

**CIS 390. REQUIREMENTS ANALYSIS AND SYSTEMS DESIGN (3-0-3)**

*Prerequisite: CIS 114.*

Study of the information systems development life-cycle, from the initial stages of information requirements analysis and determination to the ultimate activities involving systems design. Theory, methodologies, and strategies for information requirements analysis, including the assessment of transactions and decisions, fact-finding methodologies, structured analysis development tools, strategies of prototype development, and an overview of computer-aided software engineering (CASE) tools. Theory, methodologies, and strategies for systems design, including design of user-interfaces, particularly menu-driven and keyword dialogue strategies, and issues in the proper design of computer output.

**CIS 421. NUMERICAL ALGORITHMS (3-0-3)**

*Prerequisite: Completion of a 100-level GUR course in CIS. Corequisite: Math 222.*

Fundamentals of numerical methods, including discussion of errors, interpolation and approximation, linear systems of equations, solution of nonlinear equations, and numerical solution of ordinary differential equations. Algorithmic approach and efficient use of computers emphasized.

**CIS 431. DATABASE SYSTEM DESIGN AND MANAGEMENT (3-0-3)**

*Prerequisite: CIS 114 or equivalent.*

Database system architecture; data modeling using the semantic object and entity-relationship model; storage of databases; the hierarchical, network, and relational data models; formal and commercial query languages; functional dependencies and normalization for relational database design; relation decomposition; concurrency control and transactions management. Use of DBMS package.

**CIS 432. ADVANCED OPERATING SYSTEMS (3-0-3)**

*Prerequisites: CIS 251, CIS 332.*

Survey of the design and implementation of distributed operating systems, both by introducing basic concepts and considering examples of current systems. Topics include: communication, synchronization, processor allocation, and distributed file systems.

**CIS 435. ADVANCED DATA STRUCTURES AND ALGORITHM DESIGN (3-0-3)**

*Prerequisite: CIS 114.*

Advanced topics in data structures and algorithms, including mathematical induction, analysis and complexity of algorithms, and algorithms involving sequences, sets, and graphs such as searching, sorting, order statistics, sequence comparisons, graph traversals, etc. Optional topics include geometric, algebraic, and numeric algorithms.

**CIS 438. INTERACTIVE COMPUTER GRAPHICS (3-0-3)**

*Prerequisites: Completion of a 100-level course in CIS; knowledge of Pascal or C.*

Introduces fundamental concepts of interactive graphics oriented toward computer-aided design systems used in engineering, architecture, and manufacturing. Topics include computer data structures for representation of two- and three-dimensional objects and algorithms for definition, modification, and display of these objects in applications. Discussion of special topics in interactive graphics.

**CIS 447. HUMAN-COMPUTER INTERFACES (3-0-3)**

*Prerequisite: CIS 390.*

Design and evaluation of the human-computer interface in interactive computer systems. Topics include approaches to interface design such as menus, commands, direct manipulation; screen layout strategies; metaphor models; models of human information process; evaluation approaches such as protocol for analysis, interactive monitoring, use of surveys; and requirements for documentation and help.

**CIS 451. INTRODUCTION TO DATA COMMUNICATIONS AND NETWORKS (3-0-3)**

*Prerequisite: CIS 114.*

Fundamental concepts in data communications. Topics include: circuit and packet switching, layered network architecture, ISO Network protocols, performance analysis of data communication systems, flow control and alternate routing strategies and algorithms, various types of networks and their interconnections, network security and privacy. Additional topics include systems analysis and design, traffic engineering, planning and forecasting methodologies as applied to data communication networks.

**CIS 453. MICROCOMPUTERS AND APPLICATIONS (3-0-3)**

*Prerequisite: CIS 231.*

Basic principles of microprocessors and their support modules: memory, serial and parallel interfaces. Focus on software system design for control by microcomputers. Software system design for control by microcomputers. Instructor-assigned exercises and one student-designed project.

**CIS 455. COMPUTER SYSTEMS MANAGEMENT (3-0-3)**

*Prerequisite: Completion of a 100-level GUR course in CIS.*

Overview of computing centers and their organization for accomplishing specific objectives. Includes a classification of systems, analysis of cost and size, layout of equipment, methods of accessing computer facilities, equipment selection, and facilities evaluation.

**CIS 456. OPEN SYSTEMS NETWORKING (3-0-3)**

*Prerequisite: CIS 114.*

Introduction to inter-networking, including in-depth study of the architecture of network interconnections, the Internet services, and the protocols needed to provide these services. Topics include: architecture of interconnected networks, Internet addresses and the address resolution problem, Internet protocols, the domain name system, the socket interface, the client-server model of interaction, the OSI transport and application support protocols, and the TCP/IP application protocols.

**CIS 461. SYSTEMS SIMULATION (3-0-3)**

*Prerequisites: Completion of a 100-level GUR course in CIS; Math 333.*

Introduction to computer simulation as an algorithmic problem-solving technique. Includes discrete simulation models, elementary theory, stochastic processes, use of simulation languages, random number generators, simulation of probabilistic processes, design of simulation experiments, validation of models, queueing systems, and applications to the design and analysis of operational systems. The GPSS language is studied in detail.

**CIS 465. ADVANCED INFORMATION SYSTEMS (3-0-3)**

*Prerequisite: CIS 431.*

Design and programming concepts for automation of management information systems. Organization of files and techniques for processing information based upon organizational requirements and available hardware and software. Case studies. Advanced design strategies for information systems. Proposal for information systems project, including its functional specifications, preliminary design, required.

**CIS 478. SOFTWARE TOOLS FOR SOLVING PROBLEMS (3-0-3)**

*Prerequisites: Junior or senior standing, permission of instructor.*

Students interact directly with industry and solve actual problems using various information-systems software tools. Company representatives present actual problems they are facing, and the students work in groups to develop a solution, which they present at the end of the term. Presentation skills, working in groups, and using software tools for problem solving are stressed.

**CIS 480. THEORY OF LANGUAGES (3-0-3)**

*Prerequisites: CIS 280 and CIS 341.*

Formal treatment of programming language translation and compiler design concepts. Emphasis on theoretical aspects of parsing context-free languages, translation specifications, and machine-independent code optimization. Programming project required.

**CIS 490. GUIDED DESIGN IN SOFTWARE ENGINEERING (3-0-3)**

*Prerequisite: Senior standing or departmental approval.*

Focus on the methodology for developing software systems. Methods and techniques for functional requirements analysis and specifications, design, coding, testing and proving, integration, and maintenance are discussed.

**CIS 491. COMPUTER SCIENCE PROJECT (3-0-3)**

*Prerequisites: CIS 490, senior standing, and project proposal approval.*

Integration of knowledge and skills gained in previous computer science work into an individual research project. To register, students must have a written project proposal approved by the department. The project investigates current literature and computer implementation of a part of a large system or the whole of a small system, consonant with the student's direction of study. The proposal must be submitted and approved in the prior term, usually the third week of November or April.

**CIS 492. INFORMATION SYSTEMS PROJECT (3-0-3)**

*Prerequisites: CIS 465, senior standing, and, in a prior term, project proposal approved by the faculty adviser.*

Integration of knowledge and skills gained in previous information systems courses into an individual research project. The project entails investigation of current literature and the design, implementation, and evaluation of an information system.



## Environmental Sciences (NJIT)

Offered by the Department of Civil and Environmental Engineering and the Department of Engineering Technology. See also under Science, Technology, and Society for the following courses: STS 313, STS 360, STS 362, and STS 382.

### SET 303. PHOTOGRAMMETRY AND AERIAL PHOTO INTERPRETATION (3-3-4)

*Prerequisite: Junior standing.*

Principles of photography, including the physical science of optics as related to the use of aerial photos, to engineering, and land surveying projects. Mathematics of photogrammetry and the process of designing and establishing the required data for proper acquisition of photogrammetric information.

### SET 307. BOUNDARIES AND ADJACENT PROPERTIES (3-3-4)

*Prerequisite: Junior standing.*

Legal principles regarding boundaries and the constructive solutions of the problems of boundary surveying by a consideration of deed descriptions and examples of their application to surveying.

### CE 341. SOIL MECHANICS (3-0-3)

*Prerequisites: Mech 237 and Mech 237A, or equivalent. Corequisite: CE 341A.*

A study of soil types and properties is made with the objective of developing a basic understanding of soil behavior. The methods of subsurface investigation and compaction are presented. Fundamentals pertaining to permeability, seepage, consolidation, and shear strength are introduced; settlement analysis presented.

### CE 341A. SOIL MECHANICS LABORATORY (0-3-1)

*Corequisite: CE 341.*

Students perform basic experiments in soil mechanics.

### ENE 360. ENVIRONMENTAL ENGINEERING (3-0-3)

*Prerequisites: Chem 125 and junior standing.*

Training in the methods used for water pollution control. Topics include the chemical, physical, and biological processes that occur in waste-treatment design and in receiving waters; modeling schemes to determine allowable loadings in various bodies of water; and waste-treatment processes used for water pollution control.

### ENE 361. ENVIRONMENTAL PROBLEMS (3-0-3)

*Prerequisites: Chem 125 and junior standing.*

Exposure to the area of air pollution control and solid- and radioactive-waste disposal. Topics include the chemistry of contaminated atmospheres, how pollutants influence meteorological conditions, abatement processes used to control emissions, classification and nature of solid waste, related health effects, and solid- and radioactive-waste disposal.

### SET 407. BOUNDARY LINE ANALYSIS (3-3-4)

*Prerequisite: SET 307.*

Develops the analytical synthesis of real-property law, land-surveying procedures, and scenario development compatible with current case law decisions for the development of most probable scenarios of boundary location for the court's consideration.

### SET 420. LAND INFORMATION SYSTEMS (2-2-3)

*Prerequisites: Course in CADD, SET 407, or permission of instructor.*

Topics include the function and design of multipurpose cadastre systems, the components of a digital Geographical/Land Information System (GIS/LIS), and an overview on design, implementation, and evaluation problems of LIS.

### CE 506. REMOTE SENSING OF ENVIRONMENT (3-0-3)

*Prerequisite: Phys 234.*

Principles of remote sensing, general concepts, data-acquisition procedures, data analysis, and role of remote sensing in terrain investigations for civil engineering practices. Data collection from airborne and satellite platforms. Also covered: Photographic and nonphotographic sensing methodologies, manual and computer-assisted data analysis techniques for site investigations, and examination of ground conditions.

### ENE 560. ENVIRONMENTAL CHEMISTRY (3-0-3)

*Prerequisites: Chem 126 or equivalent and senior standing.*

Basic physical and chemical principles applicable to environmental and sanitary engineering. Laboratory complements the lectures and illustrates the principles discussed.

## Geoscience Engineering (NJIT)

### FED 101. FUNDAMENTALS OF ENGINEERING DESIGN I (0-6-2)

*Corequisite: HSS 101.*

Interdisciplinary teams of students work on open-ended engineering projects. Modules offered to represent an introduction to real world engineering problems from chemical, civil, electrical, industrial, mechanical, environmental, biomedical, and manufacturing engineering. Topics include product design and development, processes, manufacturing, measurements, and hands-on experiments. Students use engineering tools such as CAD and software applications. Technical writing and oral presentation skills emphasized.

### Mech 235. STATICS (3-0-3)

*Prerequisites: Phys 111, Math 112.*

Provides an understanding of equilibrium of particles and rigid bodies subject to concentrated and distributed forces.

### Mech 236. DYNAMICS (2-0-2)

*Prerequisites: Mech 235 (or Mech 234 for EE, CoE, IE).*

Provides an understanding of the mathematics of the motion of particles and rigid bodies, and of the relation of forces and motion of particles.

### Mech 237. STRENGTH OF MATERIALS (3-0-3)

*Prerequisites: Mech 235, Math 112, or equivalents, and a working knowledge of statics with emphasis on force equilibrium and free body diagrams.*

Provides an understanding of the kinds of stress and deformation and how to determine them in a wide range of simple, practical structural problems, and an understanding of the mechanical behavior of materials under various load conditions.

### Mech 237A. STRENGTH OF MATERIALS LABORATORY (0-3-1)

*Corequisite: Mech 237. Required for, and open only to, civil engineering majors.* Basic experiments in strength of materials.

### CE 200B. SURVEYING LABORATORY (0-3-1)

*For geoscience engineering majors.*

Field exercises using survey instruments including tapes, levels, theodolites, and total stations. Covers principles of topographic mapping, traverses, triangulation, and computer data reduction.

### CE 311. CO-OP WORK EXPERIENCE I (3 ADDITIVE CREDITS)

*Prerequisites: Completion of the sophomore year, approval of the department, and permission of the Office of Cooperative Education and Internships.*

Students gain major-related work experience and reinforcement of their academic program. Work assignments facilitated and approved by the co-op office. Mandatory participation in seminars and completion of a report.

### CE 320. FLUID MECHANICS (4-0-4)

*Prerequisites: Math 211, Mech 235, Mech 236.*

Fundamental laws relating to the static and dynamic behavior of fluids. Emphasis on applications dealing with the flow of water and other incompressible fluids, which includes flow in pipe systems and natural channels.

**CE 321. WATER RESOURCES ENGINEERING (3-0-3)**

*Prerequisites: CE 200, CE 200A, CE 260, Math 225.*

Methods of developing water supplies and the means to treat said supplies for consumptive use. Hydrologic techniques such as surface and groundwater yield, hydrograph and routing analyses, and probabilistic methods related to hydrologic studies are explored.

**CE 322. HYDRAULIC ENGINEERING (3-0-3)**

*Prerequisites: CE 320, CE 321.*

Provides the tools required to design water distribution systems, storm drains, and sanitary sewers. Various hydrologic and hydraulic techniques are examined.

**CE 332. STRUCTURAL ANALYSIS (3-0-3)**

*Prerequisites: Mech 237, Mech 237A, CE 260.*

Free body diagrams, equilibrium conditions for force systems and moments. Methods of analyzing determinate and indeterminate beams, frames, and trusses encountered in practice.

**CE 341. SOIL MECHANICS (3-0-3)**

*Prerequisites: Mech 237 and Mech 237A, or equivalent. Corequisite: CE 341A, to be taken concurrently.*

Soil types and properties, to develop a basic understanding of soil behavior. Methods of subsurface investigation and compaction are presented. Fundamentals pertaining to permeability, seepage, consolidation, and shear strength are introduced. Settlement analysis is also presented.

**CE 341A. SOIL MECHANICS LABORATORY (0-3-1)**

*Corequisite: CE 341.*

Students perform basic experiments in soil mechanics.

**CE 443. FOUNDATION DESIGN (3-0-3)**

*Prerequisites: CE 341, CE 341A.*

Site investigation, selection of foundation types and basis for design, allowable loads, and permissible settlements of shallow and deep foundations. Computations of earth pressure and design of retaining walls.

**CE 494. CIVIL ENGINEERING DESIGN I (3-0-3)**

*Prerequisite: Senior standing in civil engineering.*

Simulates the submission and acceptance process normally associated with the initial design phases for a civil engineering project. Preparation of sketch plats, preliminary engineering design, and a related environmental assessment. Written and oral presentations in defense of the project.

**CE 495. CIVIL ENGINEERING DESIGN II (3-0-3)**

*Prerequisite: Senior standing in civil engineering.*

Provides students with the type of design experience they would receive if engaged in civil and environmental engineering design practice. Students can select from these design areas: structures, geotechnical engineering, transportation and planning, and sanitary and environmental engineering.

**CE 545. ROCK MECHANICS I (3-0-3)**

*Prerequisites: CE 341 and CE 341A, or equivalent.*

Rock mechanics including geological aspects, mechanical properties, testing, and in-situ measurements of rock properties, and a brief introduction to design of structures on rock.

**Nuclear Science (NJIT)****NuSc 461. NUCLEAR REACTOR PHYSICS (3-0-3)**

*Prerequisites: Phys 233 or Phys 234 or Phys 235 or Phys 231H, and Math 222.*

The basic concepts of nuclear engineering practice are introduced and developed in ways that suit their ultimate applications to the design of a nuclear reactor. Topics include nuclear instability and radioactive decay, nuclear interactions, nuclear fission, neutron slowing down, and reactor criticality.

**NuSc 462. NUCLEAR REACTOR THEORY (3-0-3)**

*Prerequisite: NuSc 461.*

Selected topics in the analysis, design, and construction of nuclear reactors including neutron diffusion; one, two, and multi-energy group, as well as Fermi age calculations; reactor kinetics; poisoning; reactor control; temperature effects; and numerical calculations.

**NuSc 463. NEUTRON TRANSPORT THEORY (3-0-3)**

*Prerequisites: Same as NuSc 461.*

A geometric approach to problems dealing with the ways in which neutrons distribute themselves in various regions of space; in situations that have exact analytic solutions. Develops the mathematical laws that describe these neutron distributions. Compares solutions of the mathematical equations, both exact and those using various numerical approximations, to provide an understanding of how neutrons are distributed in various regions of a nuclear reactor and a radiation shield.

**NuSc 464. NUCLEAR REACTOR LABORATORY (2-2-3)**

*Prerequisite: NuSc 461.*

Basic experiments in nuclear instrumentation and experiments with a subcritical reactor. The experiments assist the nuclear engineer in the general areas of reactor analysis and design. Computer and numerical techniques are emphasized.

**Optical Science and Engineering (NJIT)****OPSE 301. OPTICAL SCIENCE AND ENGINEERING I (3-0-3)**

*Prerequisites: Phys 111, Phys 121, Math 222.*

Optics principles and their elementary applications for applied physics or engineering majors with junior standing. Topics include EM spectrum, speed of light, sources of light, reflection, refraction, geometric optics, polarization, birefringence, interference, diffraction, introduction to spectroscopy, and ray tracing.

**OPSE 402. OPTICAL SCIENCE AND ENGINEERING II (3-0-3)**

*Prerequisite: OPSE 301 or permission of instructor.*

Continuation of OPSE 301. Topics include Maxwell's equations, principles of lasers, electro-optics, acousto-optics, absorption and transmission of light, chemiluminescence, noise, scattering from periodic surfaces and colloids, and sensors.

**Philosophy (NJIT)**

Offered by the Department of Humanities and Social Sciences.

**Phil 331. PROBLEMS IN PHILOSOPHY (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

An examination of problems of a social, ethical, aesthetic, religious, and scientific nature, and a study of the related principles and methods of philosophy. Readings are chosen from a wide range of periods and schools from the Greeks to the present, with some application of philosophical analysis to individual and societal problems.

**Phil 333. MORAL PHILOSOPHY (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

A critical discussion of the history and fundamental elements of ethical thought. Examines topics such as the basic ethical theories, the nature of right and wrong, the significance of moral choice, the structure of the moral life, and the place of reason in ethics. Readings from both classical and modern philosophers.

**Phil 334. ENGINEERING ETHICS AND TECHNOLOGICAL PRACTICE: PHILOSOPHICAL PERSPECTIVES ON ENGINEERING (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

A philosophical examination of the nature of engineering practice and applied technology. Considers such questions as: "How do the societal functions of engineers and the practical application of technologies relate to basic moral and intellectual values?" "What moral obligations are implied by the uses of technology?" "What are the ethical duties of engineers in the practice of their careers?" "How are technological practice and engineering related to questions about knowledge and reality?"

**Phil 337. WORLD RELIGIONS (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

An introduction to five world religions that make strong claims to be in some sense universal: Hinduism, Judaism, Buddhism, Christianity, and Islam, with special attention to their impact on contemporary politics, gender, economics, and culture. Study of selected scriptures, major customs, representative figures, and one or two works of art from each religious tradition.

**Phil 350. REPRESENTATIVE PHILOSOPHIES (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

The ideas of a few great thinkers, from a variety of historical periods. Shows at first hand how these philosophers accelerated intellectual progress and how their work may contribute to the solution of modern problems.

**Phil 355. THE PHILOSOPHY OF SCIENCE (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

An investigation into the foundations and implications of modern science, with special emphasis on the influence of philosophy on scientific thought, and on philosophic questions.

**Physics (NJIT)**

**Phys 202. INTRODUCTORY ASTRONOMY AND COSMOLOGY (3-0-3)**

A nonmathematical presentation of contemporary views of the origin, evolution, and structure of the solar system, stars, galaxies, and the universe. Special topics include neutron stars, black holes, gravitationally strange objects, and the "Big Bang."

**Phys 202A. ASTRONOMY AND COSMOLOGY LABORATORY (0-2-1)**

*Corequisite: Phys 202.*

Demonstration of physical principles applicable to astronomy. Use of telescope for lunar, solar, and planetary observations.

**Phys 234. PHYSICS III (3-0-3)**

*Prerequisite: Phys 121 or Phys 121H.*

Elements of simple harmonic motion, wave motion, geometric and physical optics are considered. The wave and particle duality of nature is emphasized. Examination of important experiments and theories that led to modern concepts of matter and radiation. The conservation laws are broadened to include the equivalence of mass and energy.

**Phys 310. INTRODUCTION TO ATOMIC AND NUCLEAR PHYSICS (3-0-3)**

*Prerequisites: Physics III, Math 222.*

Selected topics in atomic physics including the Pauli Exclusion Principle and the Atomic Shell Model. In nuclear physics, the two-body problem, nuclear models, and alpha, beta, and gamma radiation is studied. Accelerators and nuclear detectors also studied.

**Phys 320. ASTRONOMY (3-0-3)**

*Prerequisite: Phys 103 or Phys 121 or Phys 121H.*

A quantitative introduction to the astronomy of the solar system, the stars, the galaxy, and galaxies in general, with an emphasis on the physical principles involved.

**Phys 335. INTRODUCTORY THERMODYNAMICS (3-0-3)**

*Prerequisite: Physics III.*

Introductory thermodynamics, kinetic theory, statistical physics. Topics include equations of state, the three laws of thermodynamics, reversible and irreversible processes.

**Phys 430. CLASSICAL MECHANICS I (3-0-3)**

*Prerequisites: Phys 233 or Phys 234 or Phys 235 or Phys 231H; Math 222.*

Newtonian mechanics of particles and systems. Lagrange's and Hamilton's approaches. Continuous systems.

**Phys 431. CLASSICAL MECHANICS II (3-0-3)**

*Prerequisite: Phys 430.*

Continuation of Phys 430. Theory of small oscillations and mechanical waves. Rigid bodies. Topics include: stability, linearization methods, forced vibrators and perturbation theory, fluids, and mechanics of continuous media.

**Phys 432. ELECTROMAGNETISM I (3-0-3)**

*Prerequisites: Physics III, Math 222.*

Electrostatics and magnetostatics, Maxwell's equations with applications, and electrodynamics.

**Phys 433. ELECTROMAGNETISM II (3-0-3)**

*Prerequisite: Phys 432.*

Continuation of Phys 432. Maxwell's equations with applications and electrodynamics.

**Phys 441. MODERN PHYSICS (3-0-3)**

*Prerequisites: Physics III, Math 222.*

Brief review of classical physics and kinetic theory followed by study of nuclear and atomic structure. Topics include wave-particle duality; wave mechanics; two-state quantum systems; the motion of an electron in periodic lattice; the band theory of solids; electrical, thermal, and magnetic properties of solids; and a semiquantitative description of plasmas and superfluid systems.

**Phys 442. INTRODUCTION TO QUANTUM MECHANICS (3-0-3)**

*Prerequisites: Physics III, Math 222.*

Wave-particle duality, the Schrodinger and Heisenberg formulations of quantum mechanics. The hydrogen atom, perturbation theory, and concepts of degeneracy, composite states, and general properties of eigenfunctions.

**Phys 443. MODERN OPTICS (3-0-3)**

*Prerequisites: Physics III, Math 222.*

Electromagnetic theory of light, interference, diffraction, polarization, absorption, double refraction, scattering, dispersion, aberration, and an introduction to quantum optics. Other topics include holography, lasers, information retrieval, spatial filtering, and character recognition.

**Phys 446. SOLID STATE PHYSICS (3-0-3)**

*Corequisite: Phys 441 or Phys 442.*

Introduction to modern concepts of the solid state. Topics include crystal structure and diffraction, crystal binding and elastic properties, thermal properties, dielectric phenomena, band theory of solids and Fermi surfaces, electrical conductors, semiconductors, magnetism, and superconductivity.

**Phys 450. ADVANCED PHYSICS LABORATORY (0-4-2)**

*Prerequisite: Permission of instructor.*

Introduction to electrical measurements; instrumentation; theoretical and applied electronics, solid state electronics, and digital circuitry; computer design; and experiments in modern physics.

**Phys 452. ATOMIC AND NUCLEAR PHYSICS (3-0-3)**

*Prerequisites: Physics III, Math 222.*

Topics include atomic spectra, atomic structure, and nuclear physics.



**Phys 461. MATHEMATICAL METHODS OF THEORETICAL PHYSICS (3-0-3)**

*Prerequisites: Phys 430, Phys 432, Phys 433.*

Topics include vector and tensor analysis, matrix methods, complex variables, Sturm-Liouville theory, special functions, Fourier series and integrals, integral equations, and numerical solutions of differential equations.

**Phys 481. APPLIED SOLID STATE PHYSICS: MICROELECTRONICS I (3-0-3)**

*Prerequisite: Phys 446 or Phys 456. Not to be taken if EE 463 has been taken.*

Topics include physics of bipolar and field effect devices and Phonon and optical spectra, unipolar devices, thermal and high field properties of semiconductor devices.

**Phys 482. APPLIED SOLID STATE PHYSICS: MICROELECTRONICS II (3-0-3)**

*Prerequisite: Phys 446 or Phys 456. Not to be taken if EE 463 has been taken.*

Topics include large-scale integrated circuits, device characteristics, charge-coupled devices, LED and semiconductor lasers, photo-detectors, and electrical and optical properties of materials.

**Phys 483. APPLIED SOLID STATE PHYSICS: COMPUTER ELECTRONICS (0-6-3)**

*Prerequisite: Phys 446 or Phys 456.*

Introduction to digital concepts; binary circuits and microprocessor architecture. Applications of discrete solid-state devices and integrated circuits are explored both in theory and practice. Laboratory introduction to hardware and software components of typical microcomputers.

**Phys 485. COMPUTER MODELING OF APPLIED PHYSICS PROBLEMS (3-0-3)**

*Prerequisites: Physics III; Math 222.*

General computer programming modeling methods and techniques. Numerical solutions to integro-differential equations. Eigenvalues problems. Application of computer-aided design and other packages.

## Science, Technology, and Society (NJIT)

NCAS students with a major or minor in science, technology, and society will find a complete listing of courses in the 1997–2000 NJIT Undergraduate Catalog (pages 134-137). Rutgers–Newark students should consult the program coordinator for additional information about these courses.

## Theater and Dramatic Literature (NJIT)

**Thtr 311. LIVING THEATER (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Using the resources of the NJIT and Rutgers theaters, students receive instruction in the elements of stage presentation: acting, design, theater history, and lighting and other technologies.

**Lit 360. DRAMA (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Follows the development of play structure from folkloric origins to contemporary theater. Emphasis is on text, history of text development, and the changing purpose of theatrical presentations.

**Lit 361. TWENTIETH-CENTURY AMERICAN DRAMA (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Examines the development of twentieth-century American drama with emphasis on the ways, often experimental, in which playwrights reflect the spirit of the times.

**Lit 362. NON-WESTERN DRAMA (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Explores classical and contemporary theater and drama in China, Japan, India, Africa, and the Middle East.

**Lit 363. ETHNIC AND MINORITY DRAMA (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Using contemporary dramas as social, historical, and cultural artifacts, examines the experience of Latinos, Asian Americans, Native Americans, and African Americans.

**Lit 364. MODERN CONTINENTAL AND BRITISH DRAMA (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

An examination of some of the dramas from the late nineteenth and twentieth centuries, with the purpose of gaining some understanding of how dramatists, in both subject matter and technique, reflect the spirit of the times. Representative playwrights include Ibsen, Shaw, Wilde, Strindberg, Synge, Chekhov, O'Casey, Pirandello, Anouilh, Brecht, Ionesco, and Pinter.

**Lit 384. AMERICAN MUSICAL THEATER (3-0-3)**

*Prerequisites: HSS 101, HSS 202, or their equivalents; two from HSS 211, HSS 212, HSS 213, or their equivalents.*

Experience a unique American theatrical tradition. Special attention is paid to contemporary productions.

**HSS 407. THEATER CAPSTONE SEMINAR (3-0-3)**

*Prerequisites: Completion of the general university requirements in English (3 credits), cultural history (6 credits), basic social science (6 credits), and either the Lit/Hist/Phil/STS (3 credits) or the open elective in humanities and social science (3 credits). The remaining 300-level course may be taken as a corequisite of the seminar.*

Allows students the opportunity to work closely with an instructor in a specific area of the instructor's expertise. Students will be required to bring together interests and skills developed in previous courses, and make in-depth oral and written presentations. A list of capstone seminars is published each term in the course registration bulletin.

## NJIT FACULTY

### School of Architecture (NJIT)

*Dean: Urs P. Gauchat*

*Associate Dean: James E. Dyer*

*Sponsored Chair: Ezra Ehrenkrantz*

*Distinguished Professor:*

*Michael Mostoller, B.S., B.Arch., Rensselaer Polytechnic Institute; M.Arch., Harvard*

*Professors:*

*Zeynep Celik, B.Arch., Istanbul Technical; M.Arch., Rice; Ph.D., California Antonio de Souza Santos, B.Arch., Cape Town; M.Arch., M.A., Pennsylvania Ezra Ehrenkrantz, B.Arch., Massachusetts Institute of Technology;*

*M.Arch., Liverpool*

*Urs P. Gauchat, B.Arch., Sydney; M.Arch., Harvard*

*Glenn Goldman, B.A., Columbia; M.Arch., Harvard*

*Sanford R. Greenfield, B.Arch., M.Arch., Massachusetts Institute of Technology; Ed.M., Harvard*

*David L. Hawk, B.Arch., Iowa State; M.Arch., M. City Planning,*

*Ph.D., Pennsylvania*

*Peter Papdemetriou, A.B., Princeton; M.Arch., Yale*

*Associate Professors:*

*David Elwell, Jr., B.S., Yale; B.A., Cambridge; M.F.A., Princeton*

*Karen A. Franck, B.A., Bennington College; Ph.D., CUNY*

*Barry Jackson, B.Arch., Rensselaer Polytechnic Institute; M.Arch., California (Berkeley)*

*Sandra V. Moore, B.A.Arch., Tuskegee Institute; M.Ed., Yale; Ed.D., Harvard*

*Anthony Schuman, B.A., Wesleyan; M.A., M.Arch., Columbia*

*Donald Wall, B.Arch., Manitoba; M.Arch., Cornell; D.Arch., Catholic*

*Troy West, B.Arch., M.Arch., Carnegie Institute of Technology*

*Leslie Weisman, B.F.A., Wayne State; M.A., Detroit*

*Stephen M. Zdepski, B.Arch., Syracuse; M.Arch., Pennsylvania*

*Research Professor:*

*Ervin L. Bales, B.S., South Carolina; M.S., Bradley; Ph.D., Illinois*



## Civil and Environmental Engineering (NJIT)

Acting and Associate Chairperson: Edward G. Dauenheimer  
Administrative Coordinator: Roberta Hartlaub

### Distinguished Professors:

Louis J. Pignataro, P.E.; B.C.E., Polytechnic Institute of Brooklyn; M.S.C.E., Columbia; Dr. of Tech. Sc., Technical University of Graz  
William R. Spillers, P.E.; B.S., M.S., California (Berkeley); Ph.D., Columbia

### Professors:

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Sima Bagheri, B.S., Teheran; M.S., Illinois Institute of Technology; Ph.D., Wisconsin  
Paul C. Chan, B.Sc., Chu Hai College; M.Sc., Worcester Polytechnic Institute; Ph.D., Texas A & M  
Su Ling Cheng, P.E.; B.S., M.S., Purdue; Ph.D., Florida  
Edward G. Dauenheimer, P.E.; B.S.C.E., M.E., Rensselaer Polytechnic Institute  
Harold Deutschman, P.E.; B.S.C.E., CUNY; M.S., Missouri; Ph.D., Northwestern  
Robert Dresnack, P.E.; B.S.C.E., City College of New York; M.S.C.E., Ph.D., New York  
Eugene B. Golub, P.E.; B.C.E., Cooper Union; M.S., Columbia; Ph.D., Polytechnic Institute of Brooklyn  
Hsin-Neng Hsieh, B.S., Cheng-Kung; M.S., Iowa; Ph.D., Pittsburgh  
C.T. Thomas Hsu, P.E.; B.S.E., Cheng-Kung; M.S., College of Chinese Culture; M.E., Ph.D., McGill; M.S., Yale  
Raj P. Khera, P.E.; M.S., Ohio State; Ph.D., Northwestern  
Walter Konon, P.E., Building Inspector, H.H.S.; B.S.C.E., M.S.C.E., CUNY  
Dorairaja Raghun, P.E.; B.E. (Hon.), Annamalai (India); M.Sc.Eng., Madras (India); M.S., Kentucky; Ph.D., Texas Tech  
Franklin Salek, P.E.; B.S.C.E., Worcester Polytechnic Institute; M.S.C.E., Ph.D., Rutgers  
John Schuring, P.E.; B.E., Ph.D., Stevens Institute of Technology; M.C.E., Alaska  
Methi Wecharatana, B.E., Chulalongkorn; M.E., Asian Institute of Technology; Ph.D., Illinois

### Associate Professors:

Joshua Greenfield, B.A., Tel Aviv; M.S., Ph.D., Ohio State  
Namanu Meegoda, B.S., Sri Lanka; M.S., Ph.D., California  
Thomas J. Olenik, P.E.; B.S.C.E., M.S.C.E., Newark College of Engineering; Ph.D., Rutgers  
M. Ala Saadeghvaziri, B.S.C.E., M.S., Ph.D., Illinois (Champaign)

### Assistant Professors:

Lisa Axe, B.S., Purdue; M.S., Ph.D., Illinois Institute of Technology  
Taha Marhaba, P.E.; B.S., M.S., Ph.D., Rutgers  
Kyriacos Mouskos, B.S., M.S., Ph.D., Texas

## Computer and Information Science (NJIT)

Acting Chairperson: James A.M. McHugh  
Associate Chairperson, Undergraduate Programs, and Vice Chairperson of the Department: Fadi P. Deek  
Associate Chairpersons: D.C. Hung, Julian M. Scher

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Murray Turoff, B.A., California; Ph.D., Brandeis

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Peter Ann-Beng Ng, B.Sc., St. Edward's; Ph.D., Texas (Austin)  
Yehoshua Perl, B.S., Bar-Ilan; M.S., Ph.D., Weizmann Institute of Science  
Boris S. Verkhovskiy, M.S., Odessa State (USSR); Ph.D., Latvia State (USSR)

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Fadi P. Deek, B.S., M.S., Ph.D., New Jersey Institute of Technology  
Tom Featheringham, B.S., Kent State; Ph.D., Pittsburgh  
James Geller, Diploma Ing., Technische Universitaet Wien; M.S., Ph.D., SUNY (Buffalo)  
Daochuan Hung, B.S.E.E., Chung Yuan; M.S.E.E., National Tsing Hua; Ph.D., Purdue  
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Edward Sarian, B.S., Niagara; M.S., Michigan; Ph.D., Stevens Institute of Technology  
Julian M. Scher, B.A., Brooklyn College; M.S., Ph.D., New York  
Frank Yeong-Chyang Shih, B.S.E.E., National Cheng Kung; M.S.E.E., SUNY (Stony Brook); Ph.D., Purdue

Andrew Sohn, B.S., M.S., Ph.D., Southern California  
Alexander Stoyen, B.S., M.S., Ph.D., Toronto  
Murat M. Tanik, B.S., Middle East Technical; M.C.S., Ph.D., Texas A&M  
Jason Wang, B.S., National Taiwan; M.S., Ph.D., New York

### Assistant Professors:

Michael P. Bieber, B.A.S./B.S.E., M.A., Ph.D., Pennsylvania  
James M. Calvin, A.B., California (Berkeley); M.S., Ph.D., Stanford  
Mary M. Eshaghian, B.S., M.S., Ph.D., Southern California  
Michael Hinchey, B.Sc., Limerick (Ireland); M.Sc., Oxford; Ph.D., Cambridge  
Dennis Karvelas, B.S.E.E., National Technical; M.S., Ph.D., Toronto  
Dina Kravets, B.S.E., Princeton; M.S.E.E. and C.S., Ph.D., Massachusetts Institute of Technology  
Franz J. Kurfess, Diploma, D.Sc., Technical (Munich)  
Qianhong Liu, B.Sc., Beijing; Ph.D., New Jersey Institute of Technology  
Marvin Nakayama, B.A., California (San Diego); M.S., Ph.D., Stanford  
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Ami Silberman, B.A., Cornell; M.S., Ph.D., Illinois (Champaign-Urbana)  
B.A. Suresh, B.S., Indian Institute of Technology; Ph.D., Syracuse  
Neerja Suri, B.E., Roorkee (India); M.S., Ph.D., Massachusetts  
Bulent Yener, M.S., Ph.D., Columbia

### Visiting Professor:

Thomas Marlowe, Jr., B.S., M.S., Seton Hall; Ph.D., Rutgers

## Engineering Technology, Surveying Option (NJIT)

Program Coordinator for Surveying Engineering Technology: Joshua Greenfeld

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Thomas McGrath, P.L.S., P.P.; B.S., SUNY

## Humanities and Social Sciences (NJIT)

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Robert Friedman, B.A., M.A., Brooklyn College; Ph.D., CUNY  
Christopher Funkhouser, B.A., M.A., Virginia; Ph.D., Albany  
Diane E. Simmons, B.A., Oregon; M.A., CUNY (City College); Ph.D., CUNY (Graduate School)

*Writer in Residence:*

Roger Hernandez, B.A., Rutgers

*Lecturers:*

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Linda Corrin, B.A., Michigan; B.A., Indiana; M.A., William Patterson College  
Enid Dame, B.S., Towson; M.A., CUNY (City College); Ph.D., Rutgers  
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Maria Mattia, B.A., M.A., Fairleigh Dickinson  
Mary Metzger, A.B., College of William and Mary; M.A., Alabama  
William O'Sullivan, B.A., Reed College; M.A., Ph.D., New School  
for Social Research; M.R.S., Hartford Seminary Foundation  
Nina Pardi, A.B., Bucknell; M.A., Kean College

## Optical Science and Engineering (NJIT)

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Anthony M. Johnson, B.S., Polytechnic Institute of New York; Ph.D., CUNY  
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*Associate Professors:*

Robert Barat, B.S., M.S., New Jersey Institute of Technology; Ph.D., Massachusetts  
Institute of Technology  
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John F. Federici, B.S., Notre Dame; Ph.D., Princeton  
Haim Grebel, B.S. Physics, Tel Aviv; M.S. Physics, Ph.D. Physics, Weizmann  
Institute of Science

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Anthony M. Johnson, B.S., Polytechnic; Ph.D., CUNY  
Roland A. Levy, B.A., Queens College; M.S., Ph.D., Columbia  
John M. Poate, B.Sc., M.Sc., Melbourne; Ph.D., Australian National

*Professors:*

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Ph.D., Florida  
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Tobin Fink, B.S., M.S., Colorado; Ph.D., Rutgers  
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Institute of Technology; Dr.Eng.Sc., New Jersey Institute of Technology  
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Cornell; Ph.D., New York  
Nissim Towfik, B.S., Bombay; A.M., Columbia  
Haimin Wang, B.S., Nanjing; Ph.D., California Polytechnic State

*Assistant Professors:*

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Otto Reisman, B.S., City College of New York; M.S., Ph.D., New York  
Trevor Tyson, B.S., Andrews; Ph.D., Stanford

*Distinguished Research Professor:*

John G. Hensel, B.S.E., M.S., Ph.D., Michigan

*Research Professors/Special Lecturers:*

Karl D. Moeller, Diploma in Physics, Ph.D., Hamburg (Germany)  
Halina Opyrchal, M.S., Polytechnic (Poland); Ph.D., Institute of Low Temperature  
and Structure Research, Polish Academy of Sciences  
Jan Opyrchal, M.S., Polytechnic (Poland); Ph.D., Institute of Low Temperature and  
Structure Research, Polish Academy of Sciences  
Slawomir Piatek, B.S., New Jersey Institute of Technology; Ph.D., Rutgers  
Fred F. Tomblin, B.S., Harvey Mudd College; M.A., Ph.D., California  
(Santa Barbara)

# School of Management

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# About the School of Management

The School of Management is an upper-division undergraduate school. Its primary mission is to offer contemporary programs in accounting, finance, management, and marketing to students who are broadly educated in the liberal arts. These programs are intended to equip graduates to enter the work force as skilled professionals, deal ethically and effectively with the myriad complex problems that arise in business, and lead rich lives, appreciative of their cultural heritage. As a secondary mission, the program prepares students wishing to pursue postgraduate study in law, business, and other disciplines.

Toward these ends, the faculty has set the following goals for all students.

1. Students should gain a substantive understanding of the current body of knowledge in their discipline.
2. All graduates should have good and practiced written and oral communications skills.
3. Students should acquire state of the art knowledge of the uses and applications of computers in business.
4. Students should have experience in analyzing and addressing complex managerial problems in a team setting.
5. Students should be able to critically reason, gather and weigh evidence, and bring innovative approaches to problem solving.
6. Graduates should have an awareness of the international nature of economic life, and the international aspects of each element of the curriculum should be considered throughout the program.
7. Students should be able to perceive and address the ethical content of decisions and activities they undertake.

The management programs at Rutgers are offered by the Faculty of Management. All have been accredited by the International Association for Management Education. All curriculum, staffing, and resources conform to the guidelines of that organization. The faculty strives to provide students a nurturing and responsive environment for their education. Students are encouraged to consult the *Student Handbook* prepared by the School of Management and available in Room 101, Engelhard Hall, for any changes and additional clarification.

# Admission

Admission to the business majors in the School of Management is based on academic criteria as well as on work or related experience, evidence of leadership, and demonstrated accomplishment. The faculty seeks to attract a highly motivated and diverse student body in accordance with the policies and procedures established by the Admissions Committee of the School of Management and by university regulations. In general, students already matriculated in the liberal arts colleges in Newark receive priority consideration for admission.

The School of Management is an upper-division undergraduate school. Students may enroll in its programs only after completing at least 56 acceptable academic credits. Usually, application is made, both by transfer students and by those already attending Rutgers, during their sophomore year. Students anticipating application to the School of Management should enroll as pre-business majors while at Rutgers.

Students within Rutgers submit an internal application, which may be obtained from the office of the School of Management in Engelhard Hall. Those applying as transfer students should obtain an application from the admissions office in Blumenthal Hall, 249 University Avenue, Newark, NJ 07102-1896 (973/353-5205).

While at the School of Management, students are jointly enrolled in one of the liberal arts colleges on the Newark campus—Newark College of Arts and Sciences or University College–Newark. Students applying as transfer students apply to the liberal arts school of their choice and indicate that they are also interested in enrolling at the School of Management by selecting the accounting, finance, management, or marketing major on the external admissions application. Accepted students are simultaneously admitted to the School of Management and the liberal arts school.

## ELIGIBILITY REQUIREMENTS

To be admitted to the school, applicants must satisfy a set of eligibility requirements consisting of three parts: courses, credits, and cumulative grade-point average.

### Course Requirement

As a requirement for admission to the School of Management, students must have completed the following courses or their equivalents with grades of C or better.

29:010:203	Introduction to Financial Accounting
29:010:204	Introduction to Managerial Accounting
21&62:220:101	Introduction to Economics, Micro
21&62:220:102	Introduction to Economics, Macro
21&62:220:231	Statistical Methods
21&62:350:102	English Composition
21&62:640:113	College Algebra



At the time students apply to the School of Management, they need to have made substantial progress toward completion of this requirement. Usually, all but 29:010:204 Introduction to Managerial Accounting and 21&62:220:231 Statistical Methods are completed during the first three terms, with these courses being completed while the application is being considered. Any offer of admission is conditional on the course requirement being met prior to the beginning of a program at the School of Management and may be withdrawn if the requirement is not satisfied.

Students transferring from other schools should consult with admissions counselors to learn if any articulation agreements are in place to define which courses at the school from which they are transferring are acceptable for meeting admission requirements.

### **Credit Requirement**

To be considered for admission, a student needs to have either completed 56 credits of acceptable, accredited college work or be enrolled in enough courses to achieve that total at the end of the current term. This frequently means that the application is considered during the second term of the sophomore year with a provisional decision being made based on anticipated performance in that term. Students must have completed 56 credits at the time they begin course work at the School of Management.

Students transferring to Rutgers who have less than 56 credits must first complete 24 credits at Rutgers with a cumulative grade-point average of 2.5 or 15 credits with a cumulative grade-point average of 3.0 prior to admission to the School of Management.

### **Cumulative Grade-Point Average Requirement**

Students must have achieved at least a cumulative grade-point average of 2.5 in the credits earned toward the baccalaureate degree when they submit an application for admission to the School of Management. Since other factors are also relevant, meeting this requirement does not guarantee acceptance. The policy of the school is to give preference to Rutgers–Newark students whenever practicable.

## **ACADEMIC CREDIT FOR TRANSFER COURSES**

Transfer students who are accepted into the School of Management have their credits evaluated by a counselor.

All credits accepted by Rutgers are credited toward the total 124 credits needed for graduation. However, certain courses in business, while credited toward your degree, may not be accepted for specific course requirements in the programs offered by the School of Management.

The following courses are accepted if passed with a grade of *C* or better when the syllabus or course description indicates the course is equivalent to that offered at Rutgers.

- Introduction to Financial Accounting (1 course)
- Introduction to Managerial Accounting (1 course)
- Business Law (1 course)
- Introduction to Economics (2 courses)
- Statistics (1 course)
- Introduction to Computers, Management Information Systems (1 course)

The school prefers that 300- and 400-level business and accounting courses be taken at Rutgers. Courses that are deemed by the school to be the equivalent of our introductory marketing, management, or finance courses may receive program credit if passed with a grade of *B* or better. Other courses may be accepted into the program at the discretion of the school based on the syllabus, text, course expectations, and student's performance in the course. Students wishing to have such a course considered for transfer credit should present this information to a counselor in Engelhard Hall 101 for consideration by the associate dean and department chair.

In no case may more than 30 business, accounting, or economics transfer credits be accepted toward completion of a program in the School of Management. Additionally, at least 30 of the last 36 business or accounting credits taken towards the degree must be completed at the School of Management.

# Academic Policies and Procedures

Policies and procedures applicable to all Newark undergraduate colleges may be found in the General Information section of this catalog. The descriptions below are specific for the School of Management and take precedence.

## Academic Advising

Each admitted student is assigned an academic counselor at the School of Management. Those accepted into the school must meet with a counselor in the Student Service Office, 101 Engelhard Hall, to plan their two-year program. Specific advice involving the substance of each discipline or specific courses is best gained from instructors or the department chairperson.

## Student Complaints about Grades

Students who wish to file a complaint about a final course grade, or a grade received for particular work completed in a course, should first attempt to resolve the matter through discussion with the instructor. If the issue is not satisfactorily resolved, the student must submit in writing the basis for the complaint and request a review by the relevant department chairperson. If the chairperson cannot resolve the issues, the student is advised to send a written complaint to the associate dean, School of Management. A written complaint about a grade for work completed while the course is in progress must be submitted to the relevant department chairperson no later than two weeks after notification of the grade. A student must submit a written complaint about a final grade no later than four weeks after the postmarked date of the official notification of grades.

Written notification of the action taken by either the chairperson or by the dean is sent to the student within four weeks of the filing of the appeal, excluding those weeks in which classes are not in regular session.

## Scholastic Standing

Students enrolled in the School of Management remain enrolled in their liberal arts college throughout their undergraduate program, and are expected to complete the academic requirements of both the School of Management and the liberal arts college.

To graduate, students must achieve a cumulative grade-point average of 2.5, as well as a grade-point average of 2.5 each term he or she is registered. A student who fails to achieve a 2.5 grade-point average in a given term is placed on probation. If the student fails to achieve a 2.5 grade-point average for a second term, the student is automatically dismissed from the school. If a student on probation achieves a 2.5 grade-point average, but fails to bring his or her cumulative grade-point average up to 2.5, the student remains on probation until the next term when either the cumulative grade-point average is raised to 2.5, in which case the student is removed from probation, or the student

fails to achieve a cumulative grade-point average of 2.5 for a second term, in which case the student is dismissed from the school.

## Readmission Policy

When a student is dismissed from the program, that student is ineligible to take any 300- or higher-level course offered by the school that has not been previously attempted. A student who has been dismissed may apply for readmission only when the cumulative grade-point average has been raised to a minimum of 2.5 and at least one term with a minimum grade-point average of 2.5 has been achieved subsequent to the dismissal. In such cases, granting readmission is automatic upon receipt of a written request from the student. Students who have been dismissed twice are not eligible for readmission to the school.

## Appeal Procedure

A student has the right to appeal academic dismissal when such action has been based solely upon the numerical criteria indicated above, and when there is strong evidence that the student will do much better work in the future.

To appeal an academic dismissal, the following materials must be submitted within ten days of notification by the college:

1. A letter from the student stating the reasons for the appeal. The letter should be sent to the Scholastic Standing Committee, School of Management, Rutgers, The State University of New Jersey, Engelhard Hall, Newark, NJ 07102-1894. The student must describe any problems that may have interfered with academic performance in the past and explain why substantial improvement is expected in the future.
2. Other supportive material that may be relevant to the case. Medical claims should be submitted for verification to the Student Health Office, Student Services Building, and then forwarded to the committee.
3. The Scholastic Standing Committee welcomes letters of support from the student's academic adviser and others who are familiar with his or her academic performance and personal circumstances.

It is the responsibility of each student to become familiar with the academic regulations of the college, particularly with regard to scholastic standing requirements. An error of omission on the part of the college is not sufficient grounds for readmitting a student on appeal if satisfactory progress toward the degree has not been made.

## Graduation

Degrees are conferred by the university upon recommendation of the Faculty of Arts and Sciences–Newark and the Faculty of Management. Degrees are conferred and diplomas issued at the annual commencement each May. A student who completes degree requirements in October or January may request a diploma in December or April, respectively. October and January diplomas may be picked up at the Office of the Registrar.

Diplomas are withheld if a student has a hold against his or her record.

It is the responsibility of each student to ensure that all the graduation requirements of the college, including certification of the major, have been fully met well before the expected date of graduation. Student records are officially closed upon graduation. A graduate cannot improve his

or her cumulative grade-point average by completing work or taking additional courses after the degree has been conferred. Inquiries concerning graduation may be directed to an academic adviser at the Office of the Associate Dean, Room 101, Engelhard Hall, School of Management.

Diploma application forms must be completed and filed in the Office of the Dean of Student Affairs, Hill Hall, by candidates for graduation as follows:

Degree Granted	Application Deadline
October	August 3
January	October 19
May	January 22

Unless the application is filed by the appropriate date, the degree is not conferred and graduation is delayed.

Students who, in May, require fewer than 12 credits to complete degree requirements, may be able to satisfy the deficiency during the subsequent summer session, thus qualifying for the degree in October. In such instance, the student is given a statement from the registrar indicating completion of all requirements for graduation; however, the diploma is not conferred until commencement the following May. This is also true for those who complete all degree requirements at the end of the fall term and qualify for the degree in January.

Requests to have degrees granted *in absentia* should be sent to the registrar as early as possible, and should indicate the address to which the diploma should be mailed in July. The student should also notify the Office of the Dean of Student Affairs, Hill Hall, of the request to be graduated *in absentia*.

## HONORS AND AWARDS

In addition to being eligible for scholarships described in the chapter on financial aid, students in the School of Management also compete for the following awards:

**Accounting Program Award.** The Accounting Program Award is given each year to the graduating accounting major who has demonstrated not only academic excellence in all departmental course work, but also has made significant progress toward a commitment to a professional career in accounting through personal achievement and contributions to the department.

**Alpha Mu Alpha.** Alpha Mu Alpha is a national marketing honorary sponsored by the American Marketing Association. Any marketing student, graduating within the academic school year, who has achieved a grade-point average ranking in the top 10 percent of all senior marketing students may be elected for Alpha Mu Alpha.

**Newton D. Becker C.P.A. Scholarship Award.** The Newton D. Becker C.P.A. Scholarship Award is given annually to the graduating accounting major with an overall cumulative grade-point average of 3.9 or better who is active in extra-curricular activities, and who is judged by the department as most deserving of scholarship recognition.

**Beta Gamma Sigma.** Beta Gamma Sigma is the national scholastic honor society in the field of business administration. To be eligible for Beta Gamma Sigma, a student must rank in the top 5 percent of the junior class or in the top 10 percent of the senior class.

**Delta Sigma Pi Scholarship Key.** The key is awarded annually by the faculty to the highest ranking senior in scholarship who has pursued an economics-business curriculum.

**The Ernst & Young Scholarship Award.** The Ernst & Young Scholarship Award is given in the form of tuition assistance to the most promising junior-year accounting major.

**Ethel Taub Award.** The Ethel Taub Award is given each year to the marketing student who shows the greatest distinction in the study of marketing.

**Faculty of Management Dean's Award.** The Faculty of Management Dean's Award is given by the faculty to the graduating senior with the best overall academic record.

**John R.H. Gilmour Annual Public Accounting Award.** The John R. H. Gilmour Award is a cash award given to the most promising senior student who has chosen a career in public accounting.

**The Louis Gluck Memorial Award in Management.** The Louis Gluck Memorial Award in Management is given to the graduating senior who exhibits, in the opinion of the appropriate department committee, outstanding leadership and/or scholarship in the area of management.

**Mu Kappa Tau.** Mu Kappa Tau is a national marketing honor society recognizing outstanding achievement in the field of marketing. To be eligible for membership a student must demonstrate outstanding academic performance and show promise of excellence in the field in marketing.

**Phi Chi Theta Key.** Presented by the Alpha Omega chapter to a female member of the graduating class of University College-Newark majoring in a business discipline who has demonstrated outstanding academic achievement and leadership.

**Service Corps of Retired Executives Scholarship (Score).** Each year the Service Corps of Retired Executives offers a cash scholarship to the outstanding business or accounting student who has completed the junior year and shows distinction in academic and extracurricular achievements at Rutgers.

**Wall Street Journal Award.** A silver medal and a year's subscription to the Wall Street Journal are awarded to a senior majoring in a business discipline who shows promise of distinction in that field.

**Wiss & Company Award.** The Wiss & Company Award is a cash award given each year to the graduating accounting major who achieves the highest cumulative grade-point average in all accounting courses.

# Academic Program Requirements

At present the School of Management offers four majors leading to the Bachelor of Science degree: accounting (010), finance (390), management (620), and marketing (630).

Students registered in the school are simultaneously matriculated at one of the liberal arts colleges on the Newark campus—either Newark College of Arts and Sciences or University College–Newark where a core of liberal arts courses in the humanities, sciences, social sciences, mathematics, and the arts is completed.

Students who complete all program requirements are eligible to receive a Bachelor of Science degree, awarded jointly by the School of Management and either the Newark College of Arts and Sciences or University College–Newark.

Therefore, to earn the degree, students must complete course requirements in four broad areas: 1) a liberal arts requirement, 2) a business curriculum core requirement, 3) courses completed in the major, and 4) electives as needed to reach a total of 124 credits.

## LIBERAL ARTS REQUIREMENT (62 credits)

Students entering the School of Management are expected to have already made substantial progress toward completion of the liberal arts component of their program. A detailed discussion of liberal arts requirements can be found in the chapters of this catalog devoted to the Newark College of Arts and Sciences and University College–Newark.

## CURRICULUM REVISION

The Faculty of Management changed its curriculum requirements during the 1996–98 academic years. The requirements listed here are in effect for fall term 1996 and thereafter. Students entering the School of Management will be expected to complete the program in effect at the time of their entrance to the School of Management.

The State of New Jersey requires completion of 150 credits to be eligible to take the examination for Certified Public Accountants after the year 2000. The accounting curriculum now conforms with that requirement.

## BUSINESS CURRICULUM

### Accounting Majors

#### Core Requirements (45 credits)

- 21&62:220:101 Introduction to Economics, Micro (3)
- 21&62:220:102 Introduction to Economics, Macro (3)
- 21&62:220:231 Statistical Methods (3)

- 21&62:640:119 Basic Calculus (3)
- 29:010:203 Introduction to Financial Accounting (3)
- 29:010:204 Introduction to Managerial Accounting (3)
- 29:010:319 Business Law I (3)
- 29:390:329 Finance (3)
- 29:522:369 International Business (3)
- 29:620:318 Management Fundamentals (3)
- 29:620:418 Business Policy and Strategy (3)
- 29:623:220 Management Information Systems (3)
- 29:623:311 Production and Operations Management (3)
- 29:623:340 Introduction to Business Research Methods (3)
- 29:630:328 Marketing (3)

#### Corporate Accounting Courses (24 credits)

- 29:010:304 Cost and Quality Management (3)
- 29:010:305 Intermediate Accounting I (3)
- 20:010:306 Intermediate Accounting II (3)
- 29:010:413 Federal Tax I (3)
- 29:010:423 Accounting for Business Combinations (3)
- 29:010:424 Auditing I (3)
- 29:010:445 Controllership, Budgeting, and Strategic Planning (3)
- business or accounting elective (3)

#### C.P.A. Eligibility Sequence

To sit for the C.P.A. examination after the year 2000, those pursuing a master's degree in accountancy also must complete the following sequence during their fifth year:

- 29:010:320 Business Law II (3)
- 29:010:414 Federal Tax II (3)
- 29:010:425 Auditing II (3)
- 29:010:446 Financial Statement Analysis (3)
- 29:010:450 Business and Accounting Seminar (3)
- M.B.A. or other graduate electives (15)

M.B.A. or graduate electives can be used as free electives or to complete a concentration in one of four areas:

1) Information Systems, 2) Taxation, 3) Governmental and Not-for-Profit Accounting, and 4) Organizational Management.

### Finance, Management, and Marketing Majors

#### Core Requirements (45 credits)

- 21&62:220:101 Introduction to Economics, Micro (3)
- 21&62:220:102 Introduction to Economics, Macro (3)
- 21&62:220:231 Statistical Methods (3)
- 21&62:640:119 Basic Calculus (3)
- 29:010:203 Introduction to Financial Accounting (3)
- 29:010:204 Introduction to Managerial Accounting (3)
- 29:390:329 Finance (3)
- 29:522:334 Business, Government, and Society (3)
- 29:522:369 International Business (3)
- 29:620:318 Management Fundamentals (3)
- 29:620:418 Business Policy and Strategy (3)
- 29:623:220 Management Information Systems (3)
- 29:623:311 Production and Operations Management (3)
- 29:623:340 Introduction to Business Research Methods (3)
- 29:630:328 Marketing (3)



## Additional Course Requirements

### Finance\*

21&62:220:322	Introduction to Econometrics (3)
21&62:220:365	Money and Banking (3)
29:390:315	Investments and Portfolio Analysis (3)
29:390:330	Corporate Finance (3)

9 additional credits in finance electives selected from the following courses:

29:010:383	Federal Income Taxes (3)
21&62:220:323	Intermediate Microeconomic Theory (3)
21&62:220:324	Intermediate Macroeconomic Theory (3)
21&62:220:337	Public Finance (3)
21&62:220:356	Business Cycles (3)
21&62:220:367	Monetary Economics (3)
21&62:220:402	Advanced Econometrics (3)
21&62:220:439	Financial Economics (3)
29:390:335	Risk Management and Insurance (3)
29:390:340	Financial Statements and Security Analysis (3)
29:390:386	Futures and Options (3)
29:390:404	Advanced Topics in Finance (3)
29:522:369	Management of Multinational Corporations (3)
29:522:380	Fundamentals of Real Estate (3)
29:623:325	Computer Information Systems (3)
29:623:375	Computer Network Applications (3)
21&62:730:251	Business and Professional Ethics (3)

### Management

29:620:301	Management of Human Resources (3)
29:620:325	Leading Individuals and Teams in Organizations (3)
29:620:360	Entrepreneurship and Small Business Management (3)

6 additional credits in management electives from the following courses:

21&62:084:395,396	Issues in Arts Management I,II (3,3)
21&62:730:251	Business and Professional Ethics (3)
29:620:302	Entrepreneurship Consulting (3)
29:620:340	Decision Making (3)
29:620:350	Negotiations (3)
29:620:355	Managing Technology (3)
29:620:365	New Venture Development (3)
29:620:370	Managing Diversity in Organizations (3)
29:620:375	Organizational Design and Change (3)

Management majors are encouraged to choose electives in the behavioral and social sciences or other courses that complement those offered by the department.

### Marketing

(Note: Marketing majors may not earn more than 21 credits in Marketing (630) courses, including 29:630:328.)

29:630:374	Consumer Behavior (3)
29:630:385	Marketing Research (3)
29:630:401	Marketing Management (3)

9 additional credits selected from the following list:

21&62:084:395,396	Issues in Arts Management I,II (3,3)
29:630:363	Advertising (3)

29:630:368	Retail Management (3)
29:630:369	New Product Development (3)
29:630:370	Industrial Marketing (3)
29:630:371	International Marketing (3)
29:630:372	Services Marketing (3)
29:630:382	Advertising and Society (3)
29:630:386	Special Topics in Marketing Seminar (3)
29:630:390	Sales Management (3)
29:630:490	Marketing Internship (3)
21&62:730:251	Business and Professional Ethics (3)

## MINOR REQUIREMENTS

Students registered in NCAS and UC-N majors may earn a minor in either accounting or business administration. To be eligible students must have 56 credits and a minimum cumulative grade-point average of 2.5 at the time of application as well as graduation.

The accounting minor requires 12 credits beyond the introductory accounting courses, 29:010:203, 204, as follows:

29:010:304	Cost and Quality Management (3) †
29:010:305-306	Intermediate Accounting I,II (3,3)
29:010:413	Federal Tax I (3)†

The accounting minor is ideally combined with a major in computer science, economics, or pre-law preparation. The accounting minor is not open to any finance, management, or marketing major.

The business administration minor is not open to accounting majors.

This minor requires 21 credits as follows:

29:010:203	Introduction to Financial Accounting (3)
29:010:204	Introduction to Managerial Accounting (3)
21&62:220:102	Introduction to Economics, Macro (3)
29:390:329	Finance (3)
29:620:318	Management Fundamentals (3)
29:630:328	Marketing (3)

At least one of the following courses is required:

21&62:220:101	Introduction to Economics, Micro (3)
21&62:220:231	Statistical Methods (3)
29:623:320	Management Information Systems (3)

## Sequence in Arts Management

The faculty of the Department of Visual and Performing Arts, in conjunction with members of the Faculty of Management, offers a sequence of six courses as preprofessional training for a wide spectrum of not-for-profit arts management opportunities. The sequence provides students with the opportunity to acquire and refine business skills that can be applied to a profession in the arts. For practical experience, a wide variety of internships are available, some of which provide stipends. For more information, call 973/353-5961.

\* One term of calculus is prerequisite to acceptance into the finance program. 21&62:640:119 is recommended.

† May be substituted by other accounting courses with the consent of the department chairperson.

## SUGGESTED COURSE SCHEDULE

### First and Sophomore Years (all majors)

#### First Year

21&62:220:101 Introduction to Economics, Micro  
 21&62:220:102 Introduction to Economics, Macro  
 21&62:350:101 English Composition  
 21&62:350:102 English Composition  
 21&62:640:113 College Algebra  
 21&62:640:119 Basic Calculus  
 laboratory science (8 credits)\*  
 science requirement (3 credits)  
 liberal arts electives (6 credits)

#### Sophomore Year

29:010:203 Introduction to Financial Accounting  
 29:010:204 Introduction to Managerial Accounting  
 21&62:220:231 Statistical Methods  
 29:623:220 Management Information Systems  
 history requirement (6 credits)  
 literature requirement (6 credits)  
 liberal arts electives (6 credits)

### Accounting Major

#### Junior Year

29:010:304 Cost and Quality Management  
 29:010:305-306 Intermediate Accounting I,II  
 29:010:319 Business Law I  
 29:390:329 Finance  
 29:620:318 Management Fundamentals  
 29:623:311 Production and Operations Management  
 29:623:340 Introduction to Business  
 Research Methods  
 29:630:328 Marketing  
 interdisciplinary elective (3 credits) ‡ †

#### Senior Year

29:010:413 Federal Tax I  
 29:010:423 Accounting for Business Combinations  
 29:010:424 Auditing I  
 29:010:445 Controllership, Budgeting, and  
 Strategic Planning  
 29:522:369 International Business  
 29:620:418 Business Policy and Strategy  
 free elective (3 credits)  
 business elective (3 credits)  
 liberal arts electives (6 credits)  
 fine arts elective (3 credits) ‡

### Finance Major

#### Junior Year

21&62:220:322 Introduction to Econometrics  
 29:390:329 Finance  
 29:390:330 Corporate Finance  
 29:522:334 Business, Government, and Society  
 29:620:318 Management Fundamentals  
 29:623:340 Introduction to Business  
 Research Methods  
 29:630:328 Marketing  
 fine arts requirement (3 credits) ‡  
 liberal arts electives (6 credits)

### Senior Year

21&62:220:365 Money and Banking  
 29:390:315 Investments and Portfolio Analysis  
 29:390:\_\_\_ finance electives (9 credits)  
 29:522:369 International Business  
 29:620:418 Business Policy and Strategy  
 29:623:311 Production and Operations Management  
 interdisciplinary requirement (3 credits) ‡ †  
 liberal arts elective (3 credits)  
 free elective (3 credits)

### Management Major

#### Junior Year

29:373:334 Business, Government, and Society  
 29:390:329 Finance  
 29:620:301 Management of Human Resources  
 29:620:318 Management Fundamentals  
 29:620:325 Leading Individuals and Teams  
 in Organizations  
 29:623:311 Production and Operations Management  
 29:623:340 Introduction to Business  
 Research Methods  
 29:630:328 Marketing  
 liberal arts electives (6 credits)  
 free elective (3 credits)

#### Senior Year

29:522:369 International Business  
 29:620:360 Entrepreneurship and Small  
 Business Management  
 29:620:418 Business Policy and Strategy  
 29:620:\_\_\_ management electives (6 credits)  
 fine arts requirement (3 credits) ‡  
 interdisciplinary requirement (3 credits) ‡ †  
 free electives (9 credits)

### Marketing Major

#### Junior Year

29:373:334 Business, Government, and Society  
 29:390:329 Finance  
 29:620:318 Management Fundamentals  
 29:623:311 Production and Operations Management  
 29:623:340 Introduction to Business  
 Research Methods  
 29:630:328 Marketing  
 29:630:374 Consumer Behavior  
 29:630:385 Marketing Research  
 liberal arts electives (6 credits)

#### Senior Year

29:522:369 International Business  
 29:620:418 Business Policy and Strategy  
 29:630:401 Marketing Management  
 29:630:\_\_\_ marketing electives (9 credits)  
 fine arts requirement (3 credits) ‡ †  
 interdisciplinary requirement (3 credits) ‡ †  
 free electives (6 credits)

\* University College–Newark students take natural science.

† See a School of Management academic counselor for details (Room 101, Engelhard Hall).

‡ University College–Newark students take humanities or fine arts.

# Courses

## ACCOUNTING 010

### COURSE NOTATION INFORMATION

#### Explanation of Three-Part Course Numbers

The number preceding each course title is divided into three parts. The first two digits are the administrative code (standing for a faculty or a school), the next three digits are the subject code, and the final three digits are the course code.

#### Administrative Codes

The following administrative codes are used in this catalog.

11	Newark College of Arts and Sciences (Course normally offered only in the day.)
62	University College–Newark (Course normally offered only in the evening and on weekends.)
21&62	Course offered at both NCAS and UC–N
25	College of Nursing
29	School of Management

#### Subject Codes

The subject code indicates the subject matter of the course. (This list does not constitute a list of majors; it indicates subject areas in which the School of Management offers courses.)

010	Accounting
390	Finance
522	International Business and Business Environment
620	Management
623	Management Science and Information Systems
630	Marketing

#### Course Codes

Courses coded from 100 to 299 indicate introductory and intermediate undergraduate courses. Codes from 300 to 499 indicate advanced undergraduate courses. Courses coded from 500 to 799 are graduate courses and are described in the graduate catalogs of the university.

Two course codes separated by a comma indicate that each term course may be taken independently of the other, e.g., 29:630:498,499. Two course codes separated by a hyphen indicate that satisfactory completion of the first term course is a prerequisite to the second term, e.g., 29:010:201-202. The first term may be taken for credit without the second, unless a statement is added to indicate that both term courses must be completed in order to receive credit.

#### Other Course Notation

- BA The number of credits is determined by arrangement with the department offering the course.

#### 29:010:203. INTRODUCTION TO FINANCIAL ACCOUNTING (3)

*Prerequisite: Sophomore standing.*

Introduction to the theoretical structure of accounting and methods and procedures necessary to achieve effective financial reporting. Overview of the balance sheet, income statement, and statement of cash flows. Includes complete treatment of the accounting cycle; asset, liability, and equity accounts; and introduction to consolidated financial statements.

#### 29:010:204. INTRODUCTION TO MANAGERIAL ACCOUNTING (3)

*Prerequisites: 29:010:203, 29:220:101,102.*

Fundamental principles of cost and managerial accounting applied to manufacturing and service enterprises. Includes an introduction to cost behavior, managerial decision models, cost and budgetary planning and control, standard costing, analysis of variance, job order and process costing systems, cost allocation, and responsibility accounting. Introduction to the new manufacturing environment, including activity-based costing.

#### 29:010:304. COST AND QUALITY MANAGEMENT (3)

*Prerequisite: 29:010:204.*

In-depth coverage of the new manufacturing environment; activity-based costing, cost and quality management, material resource planning, and strategic performance measures.

#### 29:010:305-306. INTERMEDIATE ACCOUNTING I,II (3,3)

*Prerequisites: 29:010:203 and junior standing.*

Advanced application of accounting principles to the accounting and reporting of asset, liability, and equity accounts and the financial statements. Includes coverage of professional pronouncements related to proper reporting and disclosure of financial information. The conceptual framework of accounting, current and noncurrent assets and liabilities, stockholders' equity, leases, pensions, earnings per share, deferred taxes, and stock options are included.

#### 29:010:319. BUSINESS LAW I: INTRODUCTION TO BUSINESS LAW AND GOVERNMENT REGULATION (3)

*Prerequisite: Sophomore standing.*

Topics include an introduction to the legal framework of business and the law of contracts and negotiable instruments. Extensive coverage of government regulation relating to the environment, consumer protection, hiring practices, and occupational safety.

#### 29:010:320. BUSINESS LAW II: UNIFORM COMMERCIAL CODE (3)

*Prerequisite: 29:010:319.*

Topics include torts, personal property, bailments, contract law, commercial paper, and secured transactions under the Uniform Commercial Code. Coverage of partnerships and corporations, bankruptcy, agency principles, insurance, real property, and estate matters.

#### 29:010:413. FEDERAL TAX I: FUNDAMENTALS OF FEDERAL INCOME TAXATION (3)

*Prerequisites: 29:010:305-306 and senior standing.*

Introduction to basic concepts of federal income taxation as applied to individuals and corporations, including the tax formula, accounting methods, property transactions, income determination, deductions and losses, tax credits, and the alternative minimum tax. Structure of the U.S. tax system and tax law including the tax research process.

#### 29:010:414. FEDERAL TAX II: ADVANCED CORPORATE ISSUES (3)

*Prerequisite: 29:010:413.*

In-depth coverage of corporate tax issues, including the tax effects of stock issuance, corporate distributions, redemptions, and corporate liquidations. Overview of tax-free reorganizations.

#### 29:010:423. ACCOUNTING FOR BUSINESS COMBINATIONS (3)

*Prerequisites: 29:010:305-306 and senior standing.*

Accounting for mergers and acquisitions, pooling and purchase methods, accounting for goodwill, and the equity method. Foreign subsidiaries and accounting for foreign currency translation and transactions.

**29:010:424. AUDITING I: INTERNAL AUDITING (3)**

*Prerequisites: 29:010:305-306 and senior standing.*

In-depth analysis of internal audit procedures and internal control procedures. Analytical review procedures, reconciliations and account analyses, tests for reasonableness, and verification and fraud analysis.

**29:010:425. AUDITING II: EXTERNAL AUDITING (3)**

*Prerequisite: 29:010:424. Strongly recommended for students taking the Certified Management Accounting (C.M.A.) Examination.*

Types of external audits, duties and responsibilities of the external auditor, concepts of audit evidence, and analytical review and validation procedures. Statistical sampling discussed. Generally Accepted Auditing Standards (GAAS) given extensive coverage. Use of computers in auditing is presented.

**29:010:444. GOVERNMENT AND NOT-FOR-PROFIT ACCOUNTING AND AUDITING (3)**

*Prerequisites: 29:010:305-306 and senior standing. Strongly recommended for students taking the Certified Public Accounting (CPA) Examination.*

Principles of fund accounting, analysis of financial management systems applicable to governmental units and other not-for-profit organizations. Overview of authoritative pronouncements and Generally Accepted Auditing Standards (GAAS) for financial and compliance audits of governmental and other not-for-profit organizations, their programs, activities, and functions.

**29:010:445. CONTROLLERSHIP, BUDGETING, AND STRATEGIC PLANNING (3)**

*Prerequisites: 29:010:304 and senior standing.*

Budgeting and forecasting, statement analysis, cash and investment management, strategic planning, product strategy, and establishing corporate policy and procedures. Consideration also given to SEC compliance, leadership, teamwork, and managing in cross-functional environments.

**29:010:446. FINANCIAL STATEMENT ANALYSIS: USE OF FINANCIAL DATA FOR DECISION MAKING (3)**

*Prerequisites: 29:010:305-306 and senior standing.*

Factors that affect the critical examination and interpretation of financial statements. Impact of GAAP accounting and reporting standards on decision making and investment and credit decisions. Integration of concepts from economics, finance, accounting, and business strategy. Synthesis through case analysis.

**29:010:450. BUSINESS AND ACCOUNTING SEMINAR (3)**

*Prerequisite: Senior standing. Proper business attire is required for attendance each class period.*

Capstone course for the program. Advanced accounting theory and current topics and events in business and management, with particular emphasis on the accounting implications of these current events. Guest lecturers, cases, and team research projects and presentations used throughout the course.

**29:010:485. COMPUTER-AUGMENTED ACCOUNTING (3)**

*Prerequisites: 29:623:220 and senior standing.*

Integration of computerized accounting software with the basic principles and procedures of accrual accounting. Examines the functioning of modern computerized accounting systems. Computer accounting applications include general ledger, accounts receivable, accounts payable, invoicing, payroll, inventory, and job costs. Introduction to Internet technology and accounting resources on the Internet is provided.

**29:010:493. CONTEMPORARY ACCOUNTING PROBLEMS (3)**

In-depth analysis of current issues in accounting, auditing, and tax topics determined by the instructor.

**29:010:496. ACCOUNTING INTERNSHIP (BA)**

*Prerequisites: 29:010:203,204 and junior standing.*

Internship program for three months at a participating corporation. Evaluation by staff executives of the participating organization determines final grade in the course.

**29:010:497. ACCOUNTING COOPERATIVE (BA)**

*Prerequisites: 29:010:203,204 and junior standing.*

Internship program for six months at a participating corporation. Evaluation by staff executives of the participating organization determines final grade in the course.

**29:010:498. INDEPENDENT STUDY IN ACCOUNTING (3)**

*Prerequisite: Permission of department chairperson and instructor. Restricted to accounting majors or minors with senior standing. May not be used as a substitute for any departmental requirements. A substantial research project is conducted and a final term paper is required in order to fulfill course requirements.*

**FINANCE 390****29:390:315. INVESTMENTS (3)**

*Prerequisite: 29:390:329.*

Introduction and analysis of the dimensions of risk and return. Portfolio theory and its application in the management and performance evaluation of investment portfolios. Equilibrium theories of risk and return—capital asset pricing model and the arbitrage pricing model. Interest rate theory, yield curve, linkage between short-term and long-term rates, credit risk, and interest rate risk. Analysis of individual securities: money market securities, bonds and mortgage-backed securities, common and preferred stocks, and derivatives—futures and options.

**29:390:329. FINANCE (3)**

*Prerequisites: 29:010:202, 21&62:220:101, 102, 231, 29:623:220, and junior standing.*

Financial concepts and methods of analysis. The time value of money and its relation to such concepts as net present value and internal rate of return. Principles of valuation. Financial markets. The use of capital budgeting, management of cash-flow, and working capital management.

**29:390:330. CORPORATE FINANCE (3)**

*Prerequisite: 29:390:329.*

Issues relating to the financing of capital investments. How financial risk affects the cost of capital and helps determine the capital structure of the corporation. Interactions between investment and financing decisions. The uses of various securities to finance an investment, as well as methods such as lease financing.

**29:390:335. RISK MANAGEMENT AND INSURANCE (3)**

*Prerequisites: 21&62:220:231 or equivalent; 29:623:311.*

The management of risk is a major function in every business enterprise. The function of risk management; methods used in identifying, measuring, and transferring risks; the use of insurance to transfer risks to other parties; the structure of the insurance business from the perspective of a potential purchaser of insurance.

**29:390:340. FINANCIAL STATEMENTS AND SECURITY ANALYSIS (3)**

*Prerequisite: 29:390:315.*

Techniques for examining and interpreting financial statements to support business and investment decisions. The viewpoints of short-term creditors, long-term lenders, equity investors, and internal management used as the focus of the analysis. Topics include ratio analysis, cash flow forecasting, and security valuation.

**29:390:386. FUTURES AND OPTIONS (3)**

*Prerequisite: 29:390:329.*

Introduction to derivatives—futures and options contracts on commodities, interest rates, and equities. Historical development, institutional features, and economic functions of the futures and options markets. Pricing of the contracts. Understanding the role of expectations, arbitrage, and the relationship to their cash market counterparts. Analyzing risk exposures and exploring the hedging and speculative potential of the markets. Implementing and evaluating hedges in commodity, interest rate, and equity markets.



**29:390:404. ADVANCED TOPICS IN FINANCE (3)**

*Prerequisites: 29:390:315, 29:623:311, senior standing.*

Research papers from current finance literature read and analyzed. Strengths, weaknesses, and practicability of the research is discussed. Independent work on approved topics required; class presentation for critical appraisal.

## INTERNATIONAL BUSINESS AND BUSINESS ENVIRONMENT 522

**29:522:334. BUSINESS, GOVERNMENT, AND SOCIETY (3)**

*Prerequisite: Junior or senior standing.*

The legal environment and foundation of the business system and the legal obligations of the individual firm, with an emphasis on regulatory and constitutional law; relationship between the public policy process, legal and political theory, and ethical issues in business; role of values and ideologies in shaping the business environment; corporate political activities and the roles of competing political interest groups.

**29:522:365. COMPETITIVE INTELLIGENCE AND ANALYSIS (3)**

*Prerequisites: 29:620:318, 29:630:328.*

Examines the theory of analyzing industries and competitor behavior and the practice of corporate intelligence activities through case studies, field exercises, and corporate-guest lectures.

**29:522:369. INTERNATIONAL BUSINESS (3)**

*Prerequisites: 29:390:329, 29:620:318, and junior or senior standing.*

The distinctive circumstances of management arising from the conduct of business in more than one country; international monetary system, trade framework, European economic community and regional groups, home and host country policies in international investments, and international agencies; relevant for the conduct of international business, and for the management of the international corporation.

**29:522:380. FUNDAMENTALS OF REAL ESTATE (3)**

*Prerequisite: 29:390:329.*

Introduction to modern theoretical concepts of real estate. Attributes of real estate from the freehold and leasehold perspectives. Financial analysis of residential and investment property. Descriptions of the legal aspects of real estate acquisition.

## MANAGEMENT 620

**29:620:301. MANAGEMENT OF HUMAN RESOURCES (3)**

*Prerequisite: 29:620:318 or equivalent.*

Introduction to concepts and skills for effectively managing the human resources of organizations. Topics include recruitment and selection, job design in relationship to organizational goals, evaluation and rewards, management development, career planning, and the role of the human resource professional in business strategy.

**29:620:302. ENTREPRENEURSHIP CONSULTING (3)**

*Prerequisite: Completed core requirements or senior standing. Open to majors only.*

Use problem-solving techniques of small businesses and interact with small business managers on a professional basis. Students are assigned as consultants to an operating small business to analyze and define a problem, develop solutions, and make recommendations about adopting and implementing specific courses of action.

**29:620:318. MANAGEMENT FUNDAMENTALS (3)**

*Prerequisite: Junior or senior standing.*

Examines major contributions of researchers in the field of organizational management and the decision making process; contribution of the behavioral sciences through the improved understanding of individual and group behavior within the context of the larger organization and the strategic process.

**29:620:325. LEADING INDIVIDUALS AND TEAMS IN ORGANIZATIONS (3)**

*Prerequisite: 29:620:318 or equivalent.*

Interpersonal dynamics in organizational settings. Includes personality and motivation, decision making, leadership, power and influence, and group processes.

**29:620:350. NEGOTIATIONS (3)**

*Prerequisite: 29:620:318.*

Major concepts and theories of the psychology of negotiation, as well as the dynamics of interpersonal and intergroup conflict and its resolution. Structural (e.g., parities, position, interests) and process-oriented dynamics of the negotiation process. Identification of crucial elements of a negotiation situation and implementation of appropriate resolution strategies.

**29:620:355. MANAGING TECHNOLOGY (3)**

Examines a range of problems in the management of technology including stimulating creativity and innovation, translating creative ideas into innovative output by the organization, evaluating alternative projects, and developing strategies and structures that support organizational innovation.

**29:620:360. ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT (3)**

*Prerequisites: 29:010:202, 29:390:329, and senior standing.*

Introduction to the theory and practice of entrepreneurship and small business through the examination of the basic principles of starting and managing a small business. Considers various paths to business ownership, including the start-up of an enterprise, purchase of an existing business, and the purchase of a franchise. Also includes special topics of interest to the study of entrepreneurship, such as family business, international opportunities, entrepreneurial ethics, and women and minority entrepreneurs.

**29:620:365. NEW VENTURE DEVELOPMENT (3)**

In-depth study and application of the process of creating a new venture. Emphasis on the integration of entrepreneurship knowledge and skills through the creation of a business plan for a new venture. Venture idea development and analysis, evaluation of the management team, financing, legal structures, and sources of assistance.

**29:620:370. MANAGING DIVERSITY IN ORGANIZATIONS (3)**

*Prerequisite: 29:620:318.*

Provides skills to effectively manage an organization with a diverse work force, diverse markets, and complex and interdependent work processes.

**29:620:375. ORGANIZATIONAL DESIGN AND CHANGE (3)**

Organizational structure and the processes of innovation and change at individual, group, and organizational levels. Consideration of models of change and issues related to initiating, implementing, and evaluating change efforts.

**29:620:418. BUSINESS POLICY AND STRATEGY (3)**

*Prerequisite: Completion of business core or permission of department chairperson.*

Opportunity to integrate prior learning from all fields of business. The firm is approached from a long-term perspective and as one integrated unit which must formulate and implement strategy; role of top management; competing theoretical views of the policy process of the firm; emphasis on decision making, assessment, implementation, constraints, and analysis of the firm as a whole.

**29:620:498,499. INDEPENDENT STUDY IN MANAGEMENT I,II (BA,BA)**

*Prerequisites: Permission of department chairperson and instructor. Restricted to management majors with junior or senior standing.*

## MANAGEMENT SCIENCE AND INFORMATION SYSTEMS 623

### 29:623:220. MANAGEMENT INFORMATION SYSTEMS (3)

Microcomputer-based course that provides a comprehensive understanding of computer systems and application software. Hands-on approach to learning widely used spreadsheet, database, word processor, and presentation application packages and Internet tools.

### 29:623:311. PRODUCTION AND OPERATIONS MANAGEMENT (3)

*Prerequisite: 21&62:220:231 or equivalent.*

Managerial ideas and techniques for scheduling and controlling production processes, planning, organizing, and controlling functions are developed through quantitative applications; interrelationships, behavioral aspects, and practical applications.

### 29:623:320. DATABASE MANAGEMENT SYSTEMS FOR BUSINESS APPLICATIONS (3)

*Prerequisites: 29:623:220, 311.*

Examines conceptual data modeling. Focus on identifying user information requirements and the use of commercial database management systems in designing and implementing database systems.

### 29:623:325. COMPUTER INFORMATION SYSTEMS: TECHNOLOGY AND APPLICATIONS (3)

*Prerequisite: 29:623:220.*

Introduction to the structure and components of information systems, including software and hardware, database technology, telecommunications, decision support systems, office information systems, transaction processing systems, and expert systems. Systems development using both life cycle approach and prototyping and relevant tools.

### 29:623:340. INTRODUCTION TO BUSINESS RESEARCH METHODS (3)

*Prerequisites: 21&62:220:231, 29:623:220.*

Focus on translating a business problem into a research project: formulate hypotheses, identify and locate data sources, consider ways to gather primary and secondary data, perform analysis using major statistical computer packages, effectively present findings and interpretation.

### 29:623:375. COMPUTER NETWORK APPLICATIONS (3)

Introduction to features and resources of the Internet, with hands-on approach to using tools such as Telnet; FTP; electronic mail, bulletin boards, talk, and computer conferencing; file servers; WWW; browsers; search methods; and Internet search engines. Also explored: construction of web pages using HTML, and the UNIX operating system.

## MARKETING 630

### 29:630:328. MARKETING (3)

*Prerequisites: One year of economics and junior or senior standing.*

Analysis of the marketing functions of price, promotion, place, and product; interpretation of profit and nonprofit markets; consumer behavior; market research; social/cultural factors affecting marketing; study of overall marketing planning and strategy.

### 29:630:363. ADVERTISING (3)

*Prerequisite: 29:630:328.*

Considers advertising as both a marketing tool and as a social force; surveys the principles of creating effective advertising and examines the techniques used in measuring its impact on the market; communications media studied and usefulness in different marketing programs analyzed.

### 29:630:368. RETAIL MANAGEMENT (3)

*Prerequisite: 29:630:328.*

Analysis of retail strategy, including organization, location, layout, buying, pricing, advertising, inventory and stock control, credit, and personnel administration; study of retail institutional forms.

### 29:630:369. NEW PRODUCT DEVELOPMENT (3)

*Prerequisite: 29:630:328.*

Study of the functions, concepts, and decisions required in introduction, modification, and deletion of products in an organization's product portfolio; analysis of new product research, product development, and price strategy.

### 29:630:370. INDUSTRIAL MARKETING (3)

*Prerequisite: 29:630:328.*

Analysis of industrial marketing, including organizational buying behavior, characteristics of industrial goods, and vendor and value analysis; study of industrial markets.

### 29:630:371. INTERNATIONAL MARKETING (3)

*Prerequisite: 29:630:328.*

Analysis of economic, social, and political environments influencing international markets; comparative studies of global buying behavior, international marketing strategy, and operations.

### 29:630:372. SERVICES MARKETING (3)

*Prerequisite: 29:630:328.*

Important concepts about the special nature of service marketing, and its differences from both consumer and industrial goods marketing. Emphasis on strategies for positioning services in such markets as finance, insurance, health-care, and the professions.

### 29:630:374. CONSUMER BEHAVIOR (3)

*Prerequisite: 29:630:328.*

Interdisciplinary approach to the study of consumer behavior: i.e., psychology, social psychology, sociology, economics, and cultural anthropology. Topics include: consumer behavior research, needs and motivation, perception, learning, personality, attitudes, and group dynamics. Attention given to the relevance of research findings to marketing strategy and planning.

### 29:630:382. ADVERTISING AND SOCIETY (3)

*Prerequisite: 29:630:328.*

The social issues that influence and derive from marketing activities; includes social responsibilities of marketing management; consumerism; marketing and urban redevelopment; marketing ethics; political action and reaction; legal aspects of marketing; social gains and costs of marketing.

### 29:630:385. MARKETING RESEARCH (3)

*Prerequisites: 21&62:220:231 and 29:630:328.*

Training in the basic techniques of research in marketing, including problem definition, research design, questionnaire construction, sampling data collection and analysis, and report preparation. Design and implementation of a market research study that analyzes cases based on actual business problems required.

### 29:630:386. SPECIAL TOPICS IN MARKETING SEMINAR (3)

*Prerequisite: 29:630:385.*

Work on research project from proposal to formal presentation of data.

### 29:630:390. SALES MANAGEMENT (3)

*Prerequisite: 29:630:385.*

A study of sales management process, including recruitment, selection, motivation, training, and control; analysis of the sales process; problems of managing an external sales force.

### 29:630:401. MARKETING MANAGEMENT (3)

*Prerequisites: 29:630:374, 385.*

Analysis of the planning, organization, and controlling of the marketing function in an organization; evolution of policies on pricing, channel of distribution selection, branding, product planning, and related activities. Case method used.

### 29:630:490. MARKETING INTERNSHIP (3)

*Prerequisites: 29:630:368 and permission of instructor.*

Work for a profit or nonprofit organization in a rotating series of assignments. Work experience supplemented by company-conducted training.

# Administration and Faculty

## ADMINISTRATION

### Faculty of Management

Howard Tuckman, *Dean*  
Yaw Mensah, *Associate Dean for Faculty*  
T. Edward Hollander, *Acting Associate Dean for Academic Programs*  
Carol Martancik, *Associate Dean of Administration*

### School of Management

Howard Tuckman, *Dean*  
James Bailey, *Associate Dean, School of Management*  
Loretta Iannarone, *Administrative Assistant*  
Patrick Noonan, *Student Counselor*  
Joan Harris, *Student Counselor*

## FACULTY

The Faculty of Management is organized into six departments. These are:

Accounting and Information Systems  
Finance and Economics  
Organizational Management  
Marketing  
International Business and Business Environment  
Management Sciences/Computer Information Systems

The first four of these departments offer the undergraduate major programs in accounting, finance, management, and marketing, respectively. The latter two departments do not presently offer majors. They do, however, teach important courses as part of the core curriculum.

### Department of Accounting and Information Systems

*Chairperson:* D. Palmon  
*Vice Chairperson:* L. Goodman

#### *Professors:*

Leonard Goodman, *B.S., CUNY (Brooklyn College); M.B.A., Ph.D., New York*  
Bikki Jaggi, *B.A., Punjab (India); Ph.D., Free University (West Berlin)*  
T. Edward Hollander, *B.S., M.B.A., New York; Ph.D., Pittsburgh*  
Yaw Mensah, *B.S., University of Ghana; M.B.A., Ph.D., Columbia*  
Glenn Shafer, *A.B., Ph.D., Princeton*  
Ephraim Sudit, *B.A., Hebrew; M.B.A., Columbia; Ph.D., New York*  
Miklos Vasarhelyi, *B.S., Guanabara; B.S., Rio De Janeiro; M.S., Massachusetts Institute of Technology; Ph.D., Southern California*

#### *Associate Professors:*

Kevin C.W. Chen, *B.B.A., National Taiwan; M.A.S., Ph.D., Illinois (Champaign-Urbana)*  
Gail Farrelly, *B.S., Mt. St. Vincent College; M.A., Fordham; M.B.A., Iona; D.B.A., George Washington*  
Paul Miranti, *B.A., M.A., Ph.D., Johns Hopkins; M.B.A., New York*  
Dan Palmon, *B.S., M.B.A., Hebrew; Ph.D., New York*  
Stanley Rier, *B.B.A., CUNY (City College); J.D., Brooklyn Law; LL.M., New York University Law School*  
Alexander J. Sannella, *B.B.A., M.B.A., Iona; M.Phil., Ph.D., New York*

Bin Srinidhi, *M.B.A., Indian Institute; M.Phil., Ph.D., Columbia*  
Robert Werner, *B.S., Pennsylvania; M.P.A., Rutgers; M.B.A., Seton Hall; Ph.D., New York*  
David Zaumeyer, *B.S., Fordham; M.B.A., New York; M.Phil., Ph.D., Columbia*

#### *Assistant Professors:*

Sunita Ahlawat, *B.Com., M.Com., Delhi (India); M.B.A., Massachusetts; Ph.D., Pennsylvania State*  
Saurav Dutta, *B.Tech., India Institute of Technology; Ph.D., Kansas*  
Peter Gillet, *B.A., M.A., Oxford; Ph.D., Kansas*  
Myung-Sum Kim, *B.A., Yonsei (Korea); M.A.A.C., Georgia; Ph.D., Purdue*  
Alexander Kogan, *M.S., Moscow; Ph.D., USSR Academy of Science*  
Ann-Marie Magro, *B.G.S., Michigan; M.S., Ph.D., Illinois*  
Hillel Maximon, *B.S., CUNY (Brooklyn College); M.B.A., New York*  
David Mest, *B.S.C., M.B.A., Rider; Ph.D., Tennessee*  
Uri Ronnen, *B.A., M.A., Tel Aviv; Ph.D., Stanford*  
Michael Schoderbek, *B.B.A., Iowa; M.B.A., Pennsylvania State; Ph.D., Indiana*  
Jay Soled, *B.A., Haverford College; J.D., Michigan; LL.M., New York*  
W. Raymond Williams, *B.S., Winston-Salem; J.D., Rutgers; LL.M., Widener*  
Hannah Wong, *M.B.A., SUNY (Buffalo); Ph.D., California (Los Angeles)*

### Department of Finance and Economics

*Chairperson:* I. Brick  
*Vice Chairperson:* O. Palmon

#### *Professors:*

James L. Bicksler, *Ph.D., New York*  
Ivan E. Brick, *B.A., Yeshiva; Ph.D., Columbia*  
Michael A. Crew, *B.Com., Birmingham; Ph.D., Bradford*  
Lawrence Fisher, *B.A., Pomona College; Ph.D., Chicago*  
Gikas Hardouvelis, *B.A., M.S., Harvard; Ph.D., California (Berkeley)*  
Stanley Kaish, *A.B., Cornell; M.B.A., Pennsylvania; Ph.D., New York*  
Cheng-few Lee, *B.A., M.A., National Taiwan; M.S., West Virginia; Ph.D., SUNY (Buffalo)*  
W. Giles Mellon, *B.A., Virginia; Ph.D., Princeton*  
Paul Nadler, *A.B., Brown; M.A., Wisconsin; Ph.D., New York*  
David Whitcomb, *B.S., B.A., Babson College; Ph.D., Columbia*

#### *Associate Professors:*

Moshe Adler, *B.Sc., Tel Aviv; M.A., Hebrew; Ph.D., California (Los Angeles)*  
Mark Castelino, *B.S., Bombay; M.S., Pratt; Ph.D., CUNY (Baruch College)*  
Sharon Gifford, *B.A., Florida; Ph.D., New York*  
Ronald Harstad, *B.A., Michigan; Ph.D., Pennsylvania*  
Dongcheol Kim, *B.I.E., Seoul National; M.S., Ph.D., Michigan*  
Farrokh Langdana, *B.Tech., M.B.A., M.A., Kanpur; Ph.D., Virginia Polytechnic Institute*  
Michael Long, *B.S., Western Michigan; M.P.A., Georgia; Ph.D., Purdue*  
Oded Palmon, *B.S., Technion; M.A., Ph.D., Chicago*  
Robert Patrick, *B.A., Blackburn College; Ph.D., New Mexico*  
Abraham Ravid, *B.S., Tel Aviv; Ph.D., Cornell*  
Emilio Venezian, *B.Eng., McGill; M.S., Ph.D., California Institute of Technology*

#### *Assistant Professors:*

Ren-Raw Chen, *B.A., National Taiwan; M.S., Ph.D., Illinois (Champaign-Urbana)*  
Shashidhar Murthy, *B.Tech., Madras; Ph.D., Columbia*  
Tavy Ronen, *B.A., Wesleyan; M.Phil., New York; Ph.D., New York (Stern School of Business)*  
Nilufer Usmen, *B.A., M.A., Bosphorus; D.B.A., Aegean; Ph.D., CUNY (Baruch College)*  
John Wald, *B.A., Yale; Ph.D., California (Berkeley)*

### Department of International Business and Business Environment

*Chairperson:* J. Rosenberg

#### *Professors:*

Farok Contractor, *B.S.E., Bombay; M.S., Michigan; M.B.A., Ph.D., Pennsylvania*  
John H. Dunning, *B.S., London; Ph.D., Uppsala; Ph.D., Autonomous Madrid; Ph.D., Southampton*  
Edwin Hartman, *B.A., Haverford College; B.A., M.A., Oxford; M.B.A., Pennsylvania; Ph.D., Princeton*  
Jerry Rosenberg, *B.S., CUNY; M.A., Ohio; Ph.D., New York*  
Allan Roth, *A.B., Rutgers; LL.B., Harvard*

#### *Associate Professors:*

Wayne Eastman, *A.B., J.D., Harvard*  
Benjamin Gilad, *B.A., Tel Aviv; M.B.A., Missouri State; Ph.D., New York*

*Assistant Professors:*

Steven Bardzik, *M.B.A., Loyola College; Ph.D., Georgia*  
Sam Beldona, *B.S., M.B.A., Karnatak; M.S., Ph.D., Temple*  
S.P. Raghunathan, *M.B.A., Xavier Labor Research Institute; Ph.D., Temple*  
Michael A. Santoro, *B.A., Oberlin; J.D., New York; Ph.D., Harvard*

## **Department of Management Science/Computer Information Systems**

*Chairperson:* R. Armstrong  
*Vice Chairperson:* M. Katehakis

*Professors:*

Nabil R. Adam, *M.S., Cairo; M.S., M.Phil., Ph.D., Columbia*  
Ronald Armstrong, *B.S., Acadia; M.A., Dalhousie; Ph.D., Massachusetts*  
Benjamin Avi-Itzhak, *B.S., M.S., D.Sc., Technion (Israel Institute of Technology)*  
Adi Ben Israel, *B.S., M.S., Technion (Israel Institute of Technology); Ph.D., Northwestern*  
William J. Carroll, *B.A., M.A., Ph.D., New York*  
Peter Hammer, *M.S., Ph.D., Bucharest (Romania)*  
Rosa Oppenheim, *B.S., M.S., M.A., Ph.D., Brooklyn Polytechnic Institute*  
Michael Rothkopf, *A.B., Pomona College; M.S., Ph.D., Massachusetts Institute of Technology*  
David Shanno, *B.A., Yale; M.S., Ph.D., Carnegie Mellon*  
Julius Surkis, *B.S., Robert College; M.S., Michigan State; M.S., Stevens Institute of Technology; Ph.D., Brooklyn Polytechnic Institute*  
Ted Szatrowski, *B.A., Oberlin College; M.S., Ph.D., Stanford*

*Associate Professors:*

Turgut Aykin, *B.S., M.S., Middle East; Ph.D., SUNY (Buffalo)*  
Jonathan Eckstein, *A.B., Harvard; S.M., Ph.D., Massachusetts Institute of Technology*  
Douglas Jones, *B.S., Florida A&T; M.S., Ph.D., Florida State*  
Michael Katehakis, *B.A., Athens; M.A., South Florida; M.S., Ph.D., Columbia*  
Lei Lei, *B.A., North Eastern; M.S., Dalran; Ph.D., Wisconsin*  
Tai-Wen Liu, *B.B.A., M.B.A., Taiwan; Ph.D., Columbia*  
Lee Papayanopoulos, *B.A., Cornell; M.S., New York; Ph.D., Columbia*

*Assistant Professors:*

Stephen Herschkorn, *B.A., Wesleyan; M.S., Massachusetts Institute of Technology; Ph.D., California (Berkeley)*  
Hanoch Levy, *B.A., Technion; M.Sc., Ph.D., UCLA*  
Zachary Stoumbos, *B.S., North Carolina; M.S., Ph.D., Virginia Polytechnic Institute and State University*

## **Department of Marketing**

*Chairperson:* B. Stern  
*Vice Chairperson:* L.J. Shrum

*Professors:*

Phipps Arable, *A.B., Harvard; Ph.D., Stanford*  
J. Douglass Carroll, *B.S., Florida; M.A., Ph.D., Princeton*  
Elizabeth Hirschman, *B.A., M.B.A., Ph.D., Georgia State*  
Harsharanjeet Jagpal, *Ph.D., Columbia*  
Barbara Stern, *B.A., Cornell; M.B.A., Fordham; M.A., Ph.D., CUNY*

*Associate Professors:*

Robert Rothberg, *M.B.A., Ph.D., Pennsylvania*  
L.J. Shrum, *B.B.A., Houston; M.S., Ph.D., Illinois (Champaign-Urbana)*

*Assistant Professors:*

Suman Basuroy, *M.A., Carnegie Mellon; Ph.D., Pittsburgh (Joseph M. Katz Graduate School of Business)*  
S. Chan Choi, *B.B.A., B.S., Seoul; M.B.A., Michigan; Ph.D., Pennsylvania*  
Zhao Hao, *M.Sc., Toronto; M.S., Ph.D., Rochester*  
Michael Mulvey, *B.Com., Ottawa; M.S., Clarkson; Ph.D., Pennsylvania State*  
Amitabh Mungale, *Ph.D., Florida*  
JoAnn Novak, *B.A., Trinity; M.B.A., Ph.D., Pittsburgh*

## **Department of Organizational Management**

*Chairperson:* F. Damanpour  
*Vice Chairperson:* S. Park

*Professors:*

Fariborz Damanpour, *B.S., Pahlavi; M.S., Houston; Ph.D., Pennsylvania*  
Nancy DiTomaso, *B.A., Ohio State; M.S., Ph.D., Wisconsin*  
George Farris, *B.S., Yale; M.S., Ph.D., Michigan*  
Michael E. Gordon, *B.A., Lehigh; M.S., Syracuse; Ph.D., California (Berkeley)*  
Barbara Kovach, *B.A., M.A., Stanford; Ph.D., Maryland*  
Donald McCabe, *A.B., Princeton; M.B.A., Seton Hall; Ph.D., New York*

*Associate Professors:*

Chao C. Chen, *M.A., Ph.D., SUNY (Buffalo)*  
Seung Ho Park, *B.A., Han Yang; Ph.D., Oregon*

*Assistant Professors:*

Theresa Cho, *A.B., Harvard; Ph.D., Columbia*  
Varghese George, *B.Sc., Kerak; Ph.D., Massachusetts Institute of Technology (Sloan School of Management)*  
Robert Hooijberg, *B.A., M.A., Nijmegen; Ph.D., Michigan*  
dt ogilvie, *B.A., Oberlin College; M.B.A., Southern Methodist; Ph.D., Texas*  
Asha Rao, *B.A., M.A., Bangalore (India); Ph.D., Temple*  
Phyllis A. Siegal, *B.S., Pennsylvania; Ph.D., Columbia*



# General Information

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# Tuition and Fees

Drop/add fee, per transaction	5.00
Return check service fee	10.00
Reexamination and deferred examination fee	5.00
Proficiency examination fee, per course **	10.00-20.00
Deposit fees	Variable
Transcript of record fee (per copy)	3.00

*Note:* All breakage and damage to university property will be charged for in full. The university is not responsible for loss by fire or theft of private property in its buildings.

## FEE SCHEDULE

1998–1999 Academic Year

*Note:* The university reserves the right to alter the amounts indicated on the following schedule at any time before the first day of classes of a term.

**Application Fee**, nonrefundable \* \$ 50.00

**College of Nursing Tuition** †

**Newark College of Arts and Sciences Tuition** †

**University College–Newark Tuition** †

Full-time New Jersey resident, per term	2,281.00
Full-time non-New Jersey resident, per term	4,643.00
Part-time New Jersey resident, per credit	147.45
Part-time non-New Jersey resident, per credit	301.05

**School of Management Tuition** †

Full-time New Jersey resident, per term	2,327.00
Full-time non-New Jersey resident, per term	4,736.00
Part-time New Jersey resident, per credit	151.70
Part-time non-New Jersey resident, per credit	306.65

**Student Fee**, per term

*Full-time (12 or more credits)*

College of Nursing	400.00
Newark College of Arts and Sciences	411.00
School of Management	411.00

*Part-time (11 or fewer credits)*

College of Nursing	97.00
Newark College of Arts and Sciences	102.00
School of Management	102.00

*Part-time (University College–Newark) ‡* 105.00

**Computer Fee**, per term

Full-time	75.00
Part-time	20.00–50.00

**Miscellaneous Fees**

New student orientation fee	
College of Nursing	5.00
Newark College of Arts and Sciences	10.00
School of Management	10.00
University College–Newark	10.00
Basic health insurance program (optional) per term (part-time students only)	90.73
Major medical insurance plan (optional) per year (\$50,000/\$100,000 coverage)	257.00/337.00
Late registration fee	50.00
Late payment fee	
For one day to one week and/or check not honored for payment	50.00
Partial payment fee	10.00
Late payment fee for partial payments	
For one day to one week	10.00
For each additional week or part thereof	5.00

## COLLEGE OF NURSING STUDENT UNIFORMS

Sometime before registration for the first clinical course, students will be provided with information about the student uniform. Students are required to purchase the uniform and a name pin. Students must also purchase white, uniform type shoes and white hose/socks. A watch with a sweep second hand, a stethoscope, goggles, and regulation bandage scissors complete the equipment requirements. See the College of Nursing section of this catalog for a complete description of uniform and equipment requirements for clinical courses. Cost for the uniform and equipment is approximately \$250.

## CASHIER'S OFFICE

The cashier's office for student business transactions is located in Blumenthal Hall at 249 University Avenue, Newark, NJ 07102. The telephone number is 973/353-5423. Inquiries concerning financial obligations to the university should be directed to this office.

## TERM BILLS

Instructions for registration and payment of term bills are sent by mail to all students for the first and second terms with due dates indicated. Students who do not receive a term bill by July 30 for the fall term and by December 10 for the spring term should notify their local student accounting office promptly.

It is the student's responsibility to obtain, complete, and return the term bill on time. Students who fail to do so are charged a late payment fee of \$50. Full-time students who are unable to pay their term bills in full by the stipulated time may pay their bills according to the partial payment plan outlined below.

Payment of the term bill may be made in person or by mail to the Cashier's Office, Rutgers, The State University of New Jersey, Blumenthal Hall, 249 University Avenue, Newark, NJ 07102. Checks or money orders should be made payable to Rutgers, The State University of New Jersey. Cash should not be sent through the mail.

\* This is a one-time nonrefundable payment.

† For an explanation of New Jersey residency status, see Student Residency for Tuition Purposes in the Academic Policies and Procedures chapter.

‡ University College–Newark students pay according to the number of credits taken and are assessed the part-time student fee regardless of the number of credits carried.

\*\*\$20 fee is applicable to 4-credit course.

## Returned Checks

A service charge of \$10 is assessed if a check presented in payment of fees is returned to the university as uncollectible. If collectible payment is not made before late payment deadlines, the applicable late payment fees are also charged.

## PARTIAL PAYMENT PLAN

Full-time students enrolled in 12 or more credits who are unable to pay their term bill in full may arrange with the local cashier's office to pay their bill, if it indicates a net balance due of \$200 or more, in three installments under the partial payment plan, as follows:

1. First payment: 50 percent of the net balance due plus a \$10 nonrefundable partial payment fee payable on or before the date indicated on the term bill.
2. Second payment: 25 percent of the net balance due on or before September 15 for the fall term and on or before February 1 for the spring term.
3. Third payment: Net balance due on or before October 15 for the fall term and on or before March 1 for the spring term.

Any student submitting a term bill after classes have begun for the term must make payment according to the following schedule:

1. First payment: 75 percent of net balance due plus a \$10 nonrefundable partial payment fee.
2. Second payment: Net balance due on or before October 15 for fall term and on or before March 1 for spring term.

The nonrefundable fee for this partial payment plan is \$10 per term and must be included with the first payment. Any subsequent installment not paid on time incurs an initial late fee of \$10 for the first week or part of a week that payment is late, plus a \$5 late fee for each additional week or part of a week that payment is late.

## REGISTRATION

### Activation of Registration

A student's registration is activated through the proper submission of a term bill, accompanied by payment, or a financial aid award letter. Activation of registration does not take place if there are "holds" placed on a student's records because of failure to meet outstanding obligations.

### Termination of Registration

The university exercises the right to terminate the registration of any student who has an outstanding financial obligation to the university, after sufficient notice has been given to the student. The university reserves the right to "hold" transcripts and diplomas as a result of nonpayment of obligations and to forward delinquent accounts to collection agencies and to levy a collection fee. "Holds" are removed upon satisfaction of the outstanding obligation. The terminated student may petition for reinstatement of enrollment by satisfying the indebtedness to the university and paying a \$50 reinstatement fee.

### Cancellation of Registration

To cancel registration and obtain a full refund of tuition and fees, students must notify the registrar in writing prior to the first day of classes. A student whose registration is canceled by the registrar will receive a full refund of tuition and fees, and prorated charges for room and board, if applicable. Notification of cancellation received on or after the first day of classes is treated, for billing purposes, as a withdrawal and a refund will be based on the general refund policy.

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## STUDENT FEE \*

The student fee provides financial support for student activities, student health services and insurance, and intercollegiate athletics. In addition, the fee is used to amortize the construction loan for the local college center and to provide partial support for overhead operating costs of general facilities that are available to students.

	CN Full-Time	CN Part-Time	NCAS/SOM Full-Time	NCAS/SOM Part-Time	UC-N
General university fee	\$ 11.77	\$ 8.40	\$ 12.77	\$ 7.15	\$ 6.90
Student activities					
Regular	13.25	4.25	16.75	5.00	10.25
Special	10.25	3.85	10.25	3.85	3.35
Student center activity	6.50	1.00	6.50	1.00	1.00
Intercollegiate athletics	42.00		42.00		
Club sports recreation	8.00	6.00	8.00	6.00	6.00
Student health service	90.73		90.73		
Career services	2.00	1.00	9.00	5.00	4.50
Student center operations	34.25	11.75	34.25	12.25	12.25
Debt service					
Building system student center	58.00	14.50	58.00	14.50	14.50
Newark facilities fee	6.25	3.00	6.25	3.00	3.00
Student Recreation Center					
Operations and management	92.50	31.50	92.50	31.50	31.50
Cultural and educational fee	3.00	1.00	3.00	1.00	1.00
Recreation fee	21.50	10.75	21.00	11.75	10.75
<i>Total</i>	<u>\$400.00</u>	<u>\$97.00</u>	<u>\$411.00</u>	<u>\$102.00</u>	<u>\$105.00</u>

\* Fees are for 1998-1999 academic year.

## GENERAL REFUND POLICY

A student who voluntarily withdraws from all courses during the first six weeks of a term will receive a partial reduction of tuition (and charges for room and board, if applicable) according to the week of withdrawal as follows:

- First and second week: 80%
- Third and fourth week: 60%
- Fifth and sixth week: 40%

No reduction will be granted after the sixth week.

The effective date of withdrawal is the date on which a written statement of withdrawal is received by the registrar. No part of the student fee is refundable.

No reductions will be granted after the tenth day of classes to students who withdraw from one or more courses, but remain registered in others. No adjustment from full-time to part-time status is made after the tenth day of classes. If withdrawal from one or more courses amounts to complete withdrawal from a program, the provision for full withdrawal applies.

Failure to attend class is not equivalent to a withdrawal and a student will not receive an adjustment of charges unless a formal withdrawal is filed with and approved by the registrar, regardless of whether the student actually attended classes or took examinations.

### Refund Policies for Title IV Funds Recipients

There are two additional refund schedules that differ from the General Refund Policy schedule for Title IV funds recipients. First-time Title IV funds recipients who withdraw completely from Rutgers are provided with a separate schedule under the Pro-rata Refund policy. Title IV funds recipients who are not first-time attendees are provided a schedule of refunds via the Appendix A Refund Policy.

For further information, please contact the financial aid office.

## Financial Aid

The staff in the Office of Financial Aid at Rutgers, The State University of New Jersey, is concerned with students' educational expenses. The impact of educational expenses upon the student and his or her family is sizable, in spite of the fact that tuition at Rutgers covers only a small portion of the actual cost of instruction for each student. In order to allow students with limited financial resources to attend college, every effort will be made to assist these students in finding alternatives in financing their education.

Each year, more than half the number of the Rutgers students who apply for financial aid receive some form of assistance. Although most financial assistance processed through the Office of Financial Aid is available only to students who demonstrate need and who are enrolled in a degree program, other forms of assistance also are available. Approximately 61 percent of all Rutgers-Newark undergraduates have received financial aid. In 1996-97, more than \$12 million in aid was awarded on campus, excluding loans.

Rutgers participates in the full range of state and federal financial aid programs and has a large number of university-supported programs. A brief description of each program follows. The Office of Financial Aid is located at 249 University Avenue, Newark, NJ 07102. Students may call the office directly at 973/353-5152.

All students and parents are encouraged to file an application for financial aid.

Students with complex problems or those seeking detailed answers should request an appointment with an aid counselor. Generally, a student can expect to see a counselor within a few days of making an appointment, except during the first three weeks of each term. All information is kept confidential.

Financial aid is awarded on a first-come, first-served basis to admitted students; the amount is dependent upon the availability of funds and is based on the student's financial need as determined by federal and state guidelines. Assistance is generally offered in a "package," a combination of scholarships, loans, and campus employment. Continuance of all awards is dependent upon the student's filing a renewal application, continued financial need, satisfactory academic progress, and the availability of funds.

## HOW TO APPLY

**Application Procedure.** All students interested in applying for financial aid must annually submit a Free Application for Federal Student Aid (FAFSA) and send it to the federal processor at the address listed on the envelope provided with the form. The form should be submitted by no later than March 15 of the academic year preceding the academic year for which aid is sought. FAFSAs are available through high school guidance offices or the financial aid office. Students who apply after March 15 will be considered as funds become available. FAFSAs are available to students in January.



Parents and students who need assistance in completing the financial aid form should contact the financial aid office for an appointment. Parents and students should bring complete financial records with them at that time.

**Notification.** First-year and transfer applicants who apply for aid and are admitted by March 1 can expect to receive a decision between April 1 and May 15. Students admitted after March 1 receive notification of their financial aid within three to four weeks. All applicants for aid are notified whether or not they will be offered financial aid.

**Spring Term Application Procedure.** Applications for financial aid for the spring term are considered if funds are available. The FAFSA should be submitted to the federal processor no later than October 1 preceding the spring term.

**Procedure for Part-Time Students.** Students enrolled part-time may be eligible for the federal student aid programs described below. The amounts they are eligible to receive will be prorated according to direct educational expenses incurred. It is suggested that part-time students visit the financial aid office for an interview.

**Study Abroad.** It is recommended that all students planning to study abroad visit the financial aid office for a personal interview to discuss their plans and their eligibility for aid.

**Academic Progress.** In order for aid to be offered to returning students, satisfactory academic progress must be met. This includes both maintaining a grade-point average that meets the college scholastic standing committee's requirements, as well as earning a certain number of credits during each year of enrollment. Specifics detailing the policy are available upon request from financial aid offices, and are provided to students with their financial aid award notices.

## SOURCES OF FINANCIAL AID

There are three basic kinds of financial aid: gift aid (scholarships, awards, and grants), loans, and employment. Gift awards do not require repayment. Grants require demonstrated need, while scholarships and awards generally have academic or other special requirements. Loans must be repaid, usually after the student leaves college. Employment programs allow the student to earn money for personal and other expenses through a part-time job. Putting the different types of aid together to meet financial need is the responsibility of the Office of Financial Aid and is referred to as the aid package. Decisions are based upon financial need, qualifications, and the funds available to the university.

After financial need has been established, the student is informed by letter of the exact nature of aid awarded. The total amount of each award is revised annually based upon the university's aid budget and on information provided by the student on the aid application filed each year. When comparing an aid offer from Rutgers with aid offered by another institution, consider not only the total dollars offered, but also the type of aid that is being offered and how much aid is being offered in relationship to the cost of attending the institution.

## Scholarships, Awards, and Grants

Funds are available from a variety of sources for scholarships, awards, and grants. These include university-endowed scholarships, tuition remission, federal grants, and state grants. In most cases, it is not necessary to submit special applications for particular scholarships administered by the university, provided a financial aid application has been filed. However, some forms of gift aid require separate application.

**Federal and Pell Grants.** These grants are available to undergraduate students who have not earned a bachelor's or professional degree and are enrolled in a minimum of 6 credits per term. The student must be in good standing and making satisfactory academic progress as defined by Rutgers to continue to be eligible for the grant. The award ranges from \$400 to \$2,700. Students must be citizens or permanent residents of the United States. Application is made by submitting a completed financial aid application (FAFSA).

**Federal Supplemental Educational Opportunity Grants (FSEOG).** Grants are provided by the federal government through the university to assist undergraduates with significant financial need. Application is made by submitting a completed FAFSA. The grants range from \$200 to \$2,000, depending on financial need and the availability of funding.

**New Jersey Tuition Aid Grants (TAG).** These grants are restricted to New Jersey residents who are enrolled full-time, i.e., in a minimum of 12 credits per term. The award amount varies based on student need; the maximum award is designed to cover tuition costs at Rutgers. Students who wish to be considered for the Tuition Aid Grant must file the FAFSA. The New Jersey Office of Student Assistance (NJOSA) sends a Student Eligibility Notice (SEN) to the student with accompanying instructions. The student is responsible for informing the NJOSA of any changes to information that is incorrect on the SEN. The student should also submit these changes to the Office of Financial Aid.

**New Jersey Educational Opportunity Fund Grants (EOF).** These grants are restricted to students from educationally and economically disadvantaged families with exceptional financial need. This award may range from \$200 to \$1,100 per academic year. Students must be enrolled full-time in a degree program and be residents of the state of New Jersey. Students should contact the college EOF director, the Office of University Undergraduate Admissions, or the Office of Financial Aid for additional information. Each student is required to submit the FAFSA. Beyond the grant, the EOF program offers significant support services in areas such as reading and writing skills development, tutoring, and individualized counseling.

**Edward J. Bloustein Distinguished Scholars Program (DSP).** The highest achieving students at New Jersey's secondary schools are offered \$1,000 scholarships annually without regard to financial need. Edward J. Bloustein Distinguished Scholars are students who place in the top 10 percent of their graduating class and have combined Scholastic Assessment Test I (SAT I) scores of at least 1260, or are ranked first, second, or third in their class. Additional scholarships are provided to students from the state's urban and economically distressed areas based on class rank and cumulative grade-point average.

**University Scholarship Aid.** These awards are offered to students who have outstanding records of academic and extracurricular achievement. All applicants for financial aid are considered, but scholarship awards are offered to those who best meet the criteria of various scholarship programs. A few scholarships are based only on merit.

After filing the FAFSA, students are automatically considered for both university-wide and specific college scholarships.

**James Dickson Carr Minority Scholarship Program.**

Seventy-five Carr Awards in the amount of \$5,000 per year for four years (or five years if enrolled in a five-year program) are awarded to outstanding minority students selected on the basis of academic promise as demonstrated in high school work and SAT I or ACT scores, as well as activities in school and the community. Preference in selection is given to qualified student applicants who are members of minority groups that have evidenced significant undergraduate enrollment declines in recent years.

**Collegiate Merit Awards.** Several of the undergraduate colleges offer collegiate merit awards. While the primary emphasis is on academic qualifications, scholarship committees at the colleges may establish different criteria that reflect the particular philosophy or mission of the college. These awards in some cases involve participation in a college honors program. Interested students should write to the dean's office of the school of matriculation for further information.

**University College Scholarships.** University College students are eligible for University College scholarships funded by the contributions of alumni and friends. These scholarships ordinarily cover tuition up to a maximum of 9 credits per term and take into account the academic record of the student. Awards are made at the discretion of the dean of the college.

**Nonuniversity Scholarships.** Students should be aware of the fact that a number of companies, unions, civic groups, and other associations sponsor scholarships available to students at the university. Some of these awards—such as the *New Jersey Golf Association Scholarships* and the *New Jersey Jaycee Scholarships*—are administered through Rutgers, and the Office of Financial Aid can provide further information. Direct application to the sponsoring group must be made in the case of many other awards; high school guidance counselors may be able to assist students in exploring various possibilities.

## Loans

**William D. Ford Federal Direct Loan Program**

Federal Direct student loans allow students and parents to borrow money from the federal government to pay for education, eliminating the need for an outside lender, such as a bank. In order to be considered for a Federal Direct student loan, students must complete the FAFSA. The financial aid award letter lists eligibility for the program. Money for which students are eligible is credited directly to their accounts. Because Rutgers participates in this program, it *cannot* accept any Federal Stafford Loan applications from students or their lenders. Since the U.S. Department of Education is the lender for the Federal Direct student loan program, borrowers send all loan repayments to the U.S.D.O.E. rather than to several lenders.

In general, to be eligible for a Federal Direct student loan, a student must have a high school diploma or a General Education Development (GED) certificate or meet other

standards approved by the U.S. Department of Education, be a United States citizen or an eligible noncitizen, be enrolled at least half-time per term, be making satisfactory academic progress, have a social security number, sign a statement of educational purpose, not be in default on prior loans or owe refunds to federal grant programs, and if required, have registered with the Selective Service Administration.

In addition to these requirements, all first time Federal Direct Stafford/Ford Loan and Federal Direct Unsubsidized Stafford/Ford Loan borrowers must attend an entrance interview in order to be informed of their rights and responsibilities regarding the loan and an exit interview prior to withdrawal from college or graduation.

**Federal Direct Stafford/Ford Loan.** This loan is based on financial need. The federal government pays the interest on the loan while the student is attending school. The interest rate is variable, that is, it is adjusted each year. The maximum rate for the Federal Direct Stafford/Ford Loan is 8.5 percent. Additionally, borrowers are charged an origination fee of 4 percent. Students may borrow \$2,625 for first-year undergraduate study, \$3,500 for the second year, and \$5,500 for each of the third, fourth, and fifth years.

**Federal Direct Unsubsidized Stafford/Ford Loan.** This loan is not based on need. All interest charges must be paid by the student. The interest rate and loan maximums are the same as for the Federal Direct Stafford/Ford Loan. However, students who have *proven* independence may borrow an additional \$4,000 in each of the first and second years, and an additional \$5,000 in each of the third, fourth, and fifth years.

**Federal Direct PLUS Loan.** Parents of dependent students can borrow from this program to help pay for college expenses. Applications and promissory notes are available at the financial aid office. Similar to the Federal Direct Stafford Loan, the interest rate is variable. The maximum rate for a Federal Direct PLUS Loan is 9 percent. Additionally, borrowers are charged an origination fee of 4 percent. This loan allows parents to borrow up to the cost of education minus other financial aid received by the student.

**Federal Perkins Loan**

These loans are available to students who are enrolled in a minimum of 6 credits per term and who are citizens or permanent residents of the United States. The Perkins Loan is awarded to students who demonstrate need through the FAFSA. The cumulative amount a student can borrow under this program is \$15,000 for undergraduates.

Interest at the rate of 5 percent simple begins nine months after the borrower ceases to be enrolled in a minimum of 6 credits per term and extends over a maximum repayment period of ten years. Monthly payments of at least \$30–\$40 are required. Deferment of repayment is permitted for certain kinds of federal service and cancellation of loans is permitted for certain public services.

All first-time Perkins Loan borrowers at Rutgers are required to attend an entrance interview in order to be informed of their rights and responsibilities regarding the loan. In addition, Perkins Loan recipients must attend an exit interview prior to graduation or withdrawal from college. Further details and procedures regarding the repayment of the Perkins Loan will be sent to each student recipient by Rutgers, The State University of New Jersey, Student Loan Office, Division of Accounting, 65 Davidson Road, Piscataway, NJ 08854-8094.

### **Emergency Loans**

Students who are experiencing an unusual financial emergency may apply for a university loan of up to \$500. Students need not be recipients of financial aid nor have filed a financial aid form to be considered. Loans must be repaid within the same term. An educationally related emergency need must be demonstrated as well as a method to promptly repay the loan. All loans are contingent upon available funds.

Students should contact their local financial aid office for additional information. If loans in excess of this amount are required, an appointment with a counselor is recommended.

University College–Newark students are also eligible for *Walter T. Elder Loans*, which are established through contributions of alumni and friends of Walter T. Elder, former business manager of University College–Newark. Loans are of a short-term nature, usually for one term, and are interest free until the due date. Loans cover tuition only. Delinquent loans are subject to a 3 percent charge per year. Loans are available to students who have completed a minimum of 15 credits in University College–Newark with a cumulative grade-point average of 2.0 (C) or better.

### **Employment**

**Federal Work–Study Program (FWSP).** FWSP is a federal program that provides financial assistance for students who demonstrate need through employment on campus or with nonprofit off-campus agencies. Every effort is made to place students in jobs related to their skills, interests, and fields of study. Students in the program are limited to an average of fifteen hours of work per week during the academic year and full-time employment during approved periods when classes are not in session.

**On-Campus Employment.** The student employment office and the career planning and placement office assist students in finding part-time employment whether or not students qualify for aid. The library and other departments on campus also offer employment programs. Information concerning off-campus employment opportunities is also available at these offices.

### **Other Sources of Aid**

**Veterans Benefits.** The United States Veterans Administration operates various education assistance programs for eligible veterans, war orphans, surviving spouse or child of any veteran killed while on duty with the Armed Forces, disabled veterans, dependents of a veteran with service related total disability, and certain members of the selected reserve. Inquiries concerning eligibility may be directed to the Veterans Administration office in Newark, New Jersey (telephone 1-800/242-5867) or to the veterans coordinator on each campus. For New Brunswick, the number is 732/932-7067.

Veterans and others mentioned above who plan to utilize veterans' education benefits should initially present the Veterans Administration Certificate of Eligibility Form(s) and/or discharge papers (certified copy of the DD214) when registering for courses. If applying for other financial aid with the university, veterans must report the fact that they will receive veterans' education benefits to the Office of Financial Aid.

Veterans planning to train under Chapter 32 VEAP, Chapter 30 of the New (Montgomery) GI Bill of 1984, or Chapter 106 for Reservists, are required by the university to pay cash for tuition, fees, books, and supplies, when due. Veterans, in turn, receive an allowance for each month of schooling based upon credit hours and the number of dependents.

No veteran may officially withdraw from a course (or courses) without prior approval from the academic services and/or dean of students offices. All withdrawals must be submitted in writing. The date of official withdrawal will be the determining date for changes in benefits. Failure to comply with the official school withdrawal procedure may affect both past and future benefits. Any change in schedule must also be reported to the campus Office of Veterans Affairs.

## **CHANGE IN FINANCIAL RESOURCES**

Changes may occur in a family's situation throughout the year. Therefore, students may wish to appeal their financial aid award. This may be done by submitting a detailed letter along with figures and supporting documents to the aid office or by requesting an appointment with an aid counselor. It is university and federal policy that students cannot receive assistance in excess of their calculated financial need. For a detailed copy of the financial aid appeal procedure, contact the Office of Financial Aid.

If unusual situations occur such as loss of employment, death or incapacitation of a wage earner, or loss of some form of untaxed income, the financial aid office provides professional advice on how forms can be reprocessed with the state and federal government. Students are encouraged to make an appointment with a counselor to discuss this further.

Students are also required to report all changes in financial resources (unreported financial aid, employment, or other assistance) to their campus financial aid office as soon as they have knowledge of the change. Changes in such areas as an increase or decrease in family size and number of household members attending college need to be promptly reported. This information is used in both federal and state formulas for determining need, which in turn determines aid eligibility. Failure to report this information can jeopardize continuation of all assistance.



# Student Life and Services

The Rutgers–Newark campus provides many services and activities for the personal and social welfare of students. There is also a range of academic support services, including the library and the computer center. The annual *Student Handbook* is a source of information for new students.

## LIBRARIES

The academic programs of the Newark campus are supported primarily by the John Cotton Dana Library, located in the center of the campus plaza. The Dana Library has a collection of over 658,829 volumes (including approximately 225,810 federal and state publications) as well as some 792,034 pieces of microform and 15,951 audio-visual items. Subscriptions to more than 3,160 periodicals and other serials are currently maintained. The library's regular hours during the fall and spring terms are: Monday through Thursday, 8:00 A.M. to midnight; Friday, 8:00 A.M. to 7:00 P.M.; Saturday, 10:00 A.M. to 6:00 P.M.; and Sunday, noon to 10:00 P.M. Changes or variations in these hours are posted in the library and elsewhere on campus.

The Dana Library has a wide array of networked microcomputers that provide access to the holdings of all of the Rutgers libraries, to the university's information system (INFO), to a large number of bibliographical databases and full-text electronic journals, and to the vast resources on the Internet. There are also many CD-ROM databases that are available for searching or for other kinds of information browsing and usage. In addition, on a fee basis, the library provides computer-assisted bibliographic search services. Of special note is the Dana Reference Room computing facility, which is equipped with software that allows students to do word processing, use email, access the Internet, and work with bibliographic and numeric databases, among other activities.

The Dana librarians are available to meet with individual classes to provide instruction in the use of the library and the information resources and services as part of Dana's information literacy program. A state-of-the-art electronic/multimedia classroom, where many of the classes are held, is located on the lower level. The librarians at the reference desk provide one-to-one guidance and assistance with the use of information, materials, strategies, and systems, and appointments can be made for more extensive assistance. There is also an intralibrary and interlibrary loan service for borrowing materials or obtaining photocopies of articles from the other Rutgers libraries and from other institutions' libraries. The Dana Library also has an ongoing program of exhibits on several of its floors.

Dana's Media Services, located adjacent to the Institute of Jazz Studies on Dana's fourth floor, maintains a collection of multimedia resources—videotapes, audiocassettes, phonodiscs, CD-ROMS, and the like. There are also multimedia software applications. A media distribution system

transmits audio and video information to individual carrels, media booths, and media rooms, and computers are also available for multimedia computing and for other kinds of computing use. Additionally, the Dana Room, also located in the jazz/media complex, was designed as a multipurpose facility for film, video, and computer presentations, musical performances, and seminars. Media Services also handles the scheduling and delivery of projectors and players for classroom media usage.

The Institute of Jazz Studies, a branch of the Dana Library, is the world's foremost jazz archive and research facility. The Criminal Justice/NCCD Collection, another branch of the Dana Library, is located at 15 Washington Street. The Henry Ackerson Library of Law and Justice, which serves the School of Law–Newark, is also located at 15 Washington Street.

Newark students and faculty members also have direct borrowing privileges at the other Rutgers University libraries in New Brunswick and Camden. The total holdings of the Rutgers libraries include 3.1 million volumes, 2.5 million documents, 4 million microform units, and 22,780 current serial subscriptions. Students and faculty, upon presentation of a valid Rutgers identification card, also may borrow materials from the libraries of New Jersey Institute of Technology, the University of Medicine and Dentistry of New Jersey, and Essex County College. The catalogs of the holdings of the first two of these libraries, as well as of other major research libraries in the greater metropolitan area, are available on the university's INFO system.

Other available library facilities in Newark include The Newark Public Library and the libraries of the Newark Museum and the New Jersey Historical Society. Requests for borrowing privileges at The Newark Public Library should be directed to Dana's Circulation Department. Additionally, Rutgers is a member of several local, regional, and national resource-sharing networks, such as the Research Libraries Group, InfoLink, the Eastern New Jersey Regional Library Cooperative, the Reciprocal Borrowing and Lending Program, and the New York Metropolitan Reference and Research Library Agency.

## COMPUTER CENTER

Rutgers University Computing Services (RUCS) provides computing, networking, and information services in support of instructional, research, and administrative activities by the Rutgers community. All RUCS facilities and Coordinated Instructional Facilities (CIF) are fully networked and are available to the entire Rutgers community. Each matriculated student is provided with a computing account to access communication, computing, and information services. Some of the services include access to electronic mail through Internet, access to on-line library catalogs including Rutgers' own IRIS catalog, access to the developing Campus Wide Information Service, word processing, spreadsheeting, desktop publishing, graphics, and access to national and local electronic discussion groups. All of these services are available through more than 450 PCs, Macs, and Sun user stations at RUCS and CIF facilities, or from home terminals via phone lines.



## ACADEMIC FOUNDATIONS CENTER

The Academic Foundations Center (AFC), located on the first floor of Conklin Hall, comprises academic and support service programs that include the Academic Foundations Department (AFD), the Educational Opportunity Fund (EOF), the Learning Resources Center, and the Pre-College Program. The center offers specialized instruction in communication skills—reading, writing, and English as a second language—and mathematical, science, and study skills. AFC serves all underprepared students by combining strong instruction and tutorial assistance with the personal, financial, and career counseling support necessary for academic and social advancement.

The AFC houses a department with tenured faculty recognized in their disciplines of mathematics and communication skills, who are deeply committed to bridging high school and college experiences for underprepared students entering Newark College of Arts and Sciences and University College. AFC is important in accomplishing the mission of the university and Rutgers–Newark to educate New Jersey’s diverse range of students.

## LEARNING RESOURCE CENTERS

The Learning Resource Centers (LRCs) provide a comprehensive menu of academic support services designed to meet the needs of the diverse learners within the Rutgers student body. The variety of services helps students develop more efficient and effective learning strategies and cognitive insights that lead to academic success. The primary missions of the LRCs are to help learners learn more in less time with greater ease and confidence and to help students maximize their academic potential.

### Learning Assistance

Individualized learning assistance is available to any student who seeks help in learning strategies in order to reach his or her learning potential. Instructional material is available through a wide variety of presentation methods on all the skill areas necessary for efficient and effective learning: information processing, higher-level organizational skills, developing and processing notes from lectures and reading, time management, and test preparation and exam strategies. Learning specialists provide diagnosis, individualized program design for self-improvement, and personal conferencing. Audiocassettes, video, computer instruction, texts, and other modes are used to allow the individual student to develop personal and effective learning strategies at his or her own pace.

### Academic Tutoring

The academic tutoring service provides specific course assistance in first- and second-level difficult courses such as accounting, biological sciences, chemistry, computer science, economics, introductory engineering, logic, mathematics, physics, statistics, and writing composition. The tutors are Rutgers undergraduate students who meet stringent academic requirements, have completed mandatory tutor training, and are nationally certified. Students may

walk into any LRC during scheduled hours for help in their specific course. Tutors work with a small group of students, and classmates may end up in the same tutoring group. Tutoring is available on a regularly scheduled basis in each LRC during the week and on weekends.

### Instructional Computing

Instructional computing as a support for learning in introductory courses is available in the LRCs. Rutgers faculty lead in the selection of the appropriate software to support the learning in their courses, and may also provide software that they have developed for their students’ learning. Instructional software in the LRCs is often identified on the course syllabus as a “resource” for students, along with a reading list on reserve in the library. Instructional computing is delivered in each LRC via an integrated network of Macintosh and IBM computers, videodisc players, CD-ROM, and laser printers.

### Supplemental Instruction

Supplemental Instruction (SI) is a formal support program designed to assist students in mastering course concepts and, at the same time, to increase their competence in learning how to learn the concepts of the discipline more effectively and efficiently. SI links course content and cognitive skills development through a regular schedule of out-of-class sessions. Trained student SI leaders guide the sessions by encouraging students to think about, question, and confirm their understanding of the content while learning more effective strategies of studying and learning the subject. When SI is available in conjunction with a specific section of a difficult course, attendance at one, two, or all sessions is optional.

### Course Support

Faculty who teach a wide variety of courses in many different departments provide course support materials for their students to study and use in the LRCs. Professors may provide old exams, lecture notes or course outlines, videotapes of lectures, study guides, instructional computer software, or other kinds of materials that are helpful to learning in the course.

Every service in every LRC is available to every Rutgers students as a benefit of enrollment. Centers are located on five campuses:

Newark LRC  
126 Conklin Hall  
973/353-5608

Camden Campus LRC  
Armitage Hall 231  
609/225-6442

Cook/Douglass LRC  
Loree Hall 124  
732/932-1660

College Avenue LRC  
Kreeger LRC Building  
732/932-1443

Livingston LRC  
Tillett Hall 111  
732/932-0986

Newark Learning Resource Center hours are:

Monday–Thursday	8:30 A.M. to 8:30 P.M.
Friday	8:30 A.M. to 12:00 NOON
Saturday	10:00 A.M. to 2:00 P.M.

## HOUSING AND RESIDENCE LIFE

Woodward Hall, built in 1990, is a ten-story, suite-style, residence hall for undergraduates. Each suite has three bedrooms (two students per room), living room, bathroom, and vanity area. Each suite is fully furnished, has wall-to-wall carpeting, and controls for air-conditioning and heat. In addition, each suite has an intercom connected to the security desk located in the lobby, which is staffed around-the-clock.

Woodward Hall offers an exercise room, laundry room, TV lounge, and kitchenette for students' use. The Residence Life staff is available for personal concerns as well as planning a wide variety of activities and programs.

Undergraduates who are twenty-two years of age or older may request the opportunity to live in Talbott Apartments. In Talbott, four students share an apartment that offers either two or four bedrooms, a kitchen, living room, dining room, bathroom, and vanity area. Talbott Apartments also are staffed with security personnel at all times.

Housing is not guaranteed and all students who are interested in living on campus are encouraged to apply as soon as they are accepted to Rutgers–Newark. For information, call the housing office at 973/353-1037.

## DINING SERVICES

Breakfast, lunch, and dinner are available on a cash basis in Robeson Campus Center whenever classes are in session. Daily selections include a make-your-own salad bar, grill and deli sandwiches, soups, and a wide choice of hot entrees. A food court with a Pizza Hut offers hot and cold meals every afternoon and evening. The University Club and adjacent meeting and conference rooms provide a more formal luncheon service to the university community, both for individuals and groups that want to combine a meal with their meeting or conference. The dining service also provides catering services for student, faculty, staff, and alumni events in Robeson Center and throughout the campus.

Stonsby Commons, opened with Woodward Hall in 1990, offers an alternative style of service to resident students, commuters, and the entire Rutgers community. All meals in this attractive new facility are served on an all-you-can-eat basis. Residents of Woodward are required to obtain a meal plan, and residents of Talbott and all other students have the option of purchasing one. All members of the Rutgers–Newark community may also pay a cash equivalent for each meal served.

Information about meal plan options available and all the services offered at Stonsby Commons may be obtained from the administrative office (973/353-5212 or 973/353-5568). Students wishing to sign up for a meal plan should request an application at Robeson Center, Room 219.

## RUTGERS STUDENT HEALTH SERVICE

The Rutgers Student Health Service, located in Room 104 of Blumenthal Hall at 249 University Avenue on the Newark campus, provides medical services for all full-time students. Part-time and University College students may become eligible by paying the student health service and insurance

fee to the Office of Student Health Insurance, Hurtado Health Center, Rutgers, The State University of New Jersey, 11 Bishop Place, New Brunswick, NJ 08901-1180.

The health center is staffed by physicians, nurse practitioners and a registered nurse, pharmacist, mental health counselor, and other professional staff. A wide range of services is provided, including general primary care, gynecology, health education, alcohol and other drug counseling, mental health services, immunizations, allergy desensitizations, laboratory tests, physical examinations, and referrals to other providers. Surgical and critical medical conditions are referred to the student's personal physician, the proper specialist, or an outside hospital for treatment. The health center is open from 8:30 A.M. to 4:30 P.M., Monday through Friday. The center can be reached by telephone at 973/353-5231. Appointments are encouraged to reduce waiting time.

The health center pharmacy, located on the premises, is open from 9:30 A.M. TO 4:00 P.M., Monday through Friday. The pharmacy can be contacted by telephone at 973/353-5201.

Students are urged to use the health center for medical treatment, health education, and preventative medicine. Services are rendered confidentially. Some health services rendered by outside consultants and facilities are the financial responsibility of the student.

## SEXUAL ASSAULT SERVICES AND CRIME VICTIM ASSISTANCE

Sexual Assault Services and Crime Victim Assistance offers support to crime victims, survivors, and other members of the university community through advocacy, crisis intervention, short-term counseling, education, and referrals. Programs and services are available across the university for students, faculty, and staff to promote ways of reducing the risk of becoming a crime victim, with a special emphasis on interpersonal violence. Educational programming on issues concerning sexual assault, dating violence, stalking, peer sexual harassment, and other types of interpersonal violence are an integral part of the programmatic initiatives.

For more information or to schedule an appointment or program, call 732/932-1181 or look at the department web page at [www.rutgers.edu/SexualAssault/](http://www.rutgers.edu/SexualAssault/). The office is located at 3 Bartlett Street on the College Avenue campus.

## STUDENT HEALTH INSURANCE

All full-time students, by paying the student fee, and those part-time students and University College–Newark students who elect to pay the student health service and insurance fee, are insured for a maximum of \$3,500 in medical expenses, brought about by illness or injury. This policy provides excess coverage over any other insurance plans. Students have the option to purchase a major medical policy sponsored by the university that provides more extensive coverage. Students may also purchase coverage for their spouse and/or sole domestic partner and children at additional cost. Any student not covered by individual or family policies should consider this optional coverage. Information and applications are available from the Newark Health Center, 249 University Avenue, Newark,

NJ 07102 (973/353-5231), or from the Office of Student Health Insurance, Hurtado Health Center, Rutgers, The State University of New Jersey, 11 Bishop Place, New Brunswick, NJ 08901-1180 (732/932-8285).

### **Compulsory International Student Insurance Fee**

All students in F or J immigration status whose visa documents are issued by Rutgers are required to have both the basic and major medical coverage, which will be charged to them on the term bill. Any accompanying spouse and children must also be insured. Dependent coverage with the student insurance program can be purchased by calling their health insurance adviser at the Center for International Faculty and Student Services, Rutgers, The State University of New Jersey, 180 College Avenue, New Brunswick, NJ 08901-8537 (732/932-7015). Students with questions about insurance fees also may stop by the Office of International Student Services at 235 Smith Hall for assistance.

## **COUNSELING SERVICES**

### **Counseling Center**

A staff of clinical psychologists and other mental health professionals is available to work confidentially with students having personal problems or experiencing difficulty coping with the stresses of university life. Appointments to see a psychologist located in Blumenthal Hall can be made by calling 973/353-5805, or visit 101 Blumenthal Hall, 249 University Avenue, Newark.

### **International Student Services**

The Office of International Student Services assists nonimmigrant international students with all matters of special concern to them and serves as a referral source to other university offices, academic departments, and outside agencies. The office, which is located at 235 Smith Hall, provides direct support with employment, immigration, personal, and other matters. In addition, the office sponsors a variety of cultural and social programs throughout the year.

Advice on immigration includes both general information on students' rights and responsibilities as well as assistance with procedures and documents required for transfer of schools, extensions of stay, work permission, and practical training experiences. The office also provides support and advice on such matters as adjustment to life in the United States, cross-cultural differences, family concerns, health care and insurance, and other personal concerns. For additional information, please call 973/353-1427.

### **Counseling for Disabled Students**

Students who wish assistance due to a disability are advised to contact the adviser for disabled students who is located in the Robeson Campus Center, Room 203. Special counseling and direct assistance are available to make all programs of the university accessible to any student. Call 973/353-5300 for information and assistance.

On-campus housing for disabled students is available through the Office of Housing and Residence Life, Robeson Campus Center, Room 234. Call 973/353-1032 for further information.

### **Veterans Services**

The Office of Veterans Affairs, located in the Robeson Campus Center, Room 203, serves student veterans at Rutgers–Newark and residents of the surrounding communities. Information and assistance are offered regarding GI benefits, admission, financial aid, work-study programs, tutoring, and employment opportunities. (Certification of a veteran's student status is done at the Office of the Registrar, 249 University Avenue.) The staff processes forms for New Jersey state veterans' benefits and grants and keeps veterans informed of current state and national legislation which affects them. Both personal and group counseling for veterans can be arranged through this office. For further information, call 973/353-5300.

### **Career Counseling and Placement Service**

The Career Development Center, located in Hill Hall, Rooms 313 and 309, offers a variety of services for undergraduate students as well as alumni. Career counselors are ready to assist students with issues such as choosing a major, clarifying educational and career goals, identifying and acquiring internship positions, and developing or improving job-hunting strategies and skills. The staff provides personalized counseling, group workshops, vocational and personality testing, and special programs such as career conferences and career fairs. Alumni who serve as vocational mentors are available to provide guidance and direction through the center's developing Alumni Network.

Part-time, summer, internship, and full-time career opportunities are posted at the Career Development Center on a daily basis throughout the year. Students can access this information by visiting, by telephone hotline, or via the Internet. On-campus interviews with prospective employers are obtainable through the fall and spring recruitment programs for graduating seniors and recent alumni. On-campus Career Fairs are held annually, offering all students an opportunity to "network" with corporate, government, and not-for-profit employers.

GRE, GMAT, LSAT, MCAT, PCAT, and PRAXIS/NTE, DCAT, and VCAT test applications are available at the center. A credentials file service is available for storing and distributing letters of recommendation to potential employers and/or graduate and professional schools.

For assistance with career planning or employment placement needs, visit the Career Development Center or telephone 973/353-5311 to arrange an appointment with a counselor.

## **DAY-CARE CENTERS**

The Office of Housing and Residence Life lists several child-care centers in the vicinity of Rutgers–Newark. The office, at 234 Robeson Campus Center, has information regarding these centers and invites parents to visit the centers they are interested in. The Office of Housing and Residence Life does not endorse the services of any of the centers listed.

See or call your dean's office for additional listings.



## TEACHING EXCELLENCE CENTER

The Teaching Excellence Center, located at 206 Blumenthal Hall, provides support to faculty, departments, schools, and colleges to enhance and improve teaching and learning activities on the Newark campus. Throughout the year, the center offers workshops, seminars, programs, instructional development services, grants, and a newsletter on teaching/learning issues for faculty and teaching assistants. The center's library has resources on teaching, including books, reprints, and audio and videotapes. Individual confidential consultation is available including videotaping of teaching, classroom observation, assistance in the development of a teaching portfolio, and instructional materials review. More information on the services and activities offered may be obtained by visiting the center or calling 973/353-1534.

## PARKING AND TRANSPORTATION SERVICES

Students may park at Deck I, 200 University Avenue, Monday through Friday, from 7:00 A.M. to midnight, and Saturdays to 7:00 P.M.; at Deck II, 166 Washington Street, Monday through Thursday from 7:00 A.M. to 7:00 P.M.; and at Lot No. 508, adjacent to Bradley Hall, weekdays after 4:00 P.M. Student deck permits, valid for the academic year, may be purchased for \$25 at the Office of Parking and Transportation Services, 249 University Avenue, Blumenthal Hall. Students with valid permits are charged a reduced daily parking fee of \$2.75 when exiting; others are charged \$4.50 per day.

Students residing at either Talbott or Woodward halls may purchase reserved 24-hour resident parking in Deck I. A limited number of reserved spaces are available; permits are sold on a first-come, first-served basis. Residents may opt to purchase an annual contract (September 1–August 31), academic year contract (September 1–May 31), or single-term permit. Partial payment contracts are available upon request. For further information and fee structure, please call 973/353-5873.

Vehicle registration materials, including registration forms and payment instructions, are mailed to students during the summer. Please use the return envelope accompanying your materials to expedite processing and to avoid waiting on line during the first week of class. Vehicle registration materials are also made available at new student registrations. For more information, contact the Office of Parking and Transportation Services, 249 University Avenue, Blumenthal Hall, 973/353-5873.

### Shuttle Van Service

A free shuttle van service is available to Rutgers faculty, staff, and students between the hours of 3:30 P.M. and 11:30 P.M., Monday through Friday. The shuttle service is provided for the exclusive use of Rutgers and NJIT faculty, staff, students, and their guests. Proper identification in the form of an ID card must be presented to enter the van. The shuttle's designated stops include key locations around the main campus, law school, Broad Street and Pennsylvania Railroad stations, Kearny, and Harrison. Schedules are available at the Office of Parking and Transportation Services, University Police Headquarters, or from shuttle service drivers. For more information, contact the Office of Parking and Transportation Services, 249 University Avenue, Blumenthal Hall, 973/353-5873.

## Railroad Discounts

Full-time students who travel by train are eligible for the New Jersey Transit System Student Discount Program. In order to obtain a discount on the purchase of a monthly commutation ticket, a railroad discount form must be obtained at the train station. The form must be presented to the registrar's office for authorization prior to purchasing the monthly ticket.

If you would like assistance in planning your way to the campus or need further information, please contact the Office of Parking and Transportation Services at 973/353-5873. The office is located at 249 University Avenue, Blumenthal Hall (adjacent to the Alumni Field).

## PHOTO IDENTIFICATION CARDS

All students, faculty, and staff are required to carry a valid Rutgers identification card at all times. The Rutgers ID must be presented for security purposes, student activities, library, athletic center, computer center usage, registrations, shuttle service, and as deemed necessary by other university departments.

The Office of Parking and Transportation Services processes ID cards for newly admitted students at their respective registrations. Thereafter, all photo ID business is transacted at the Office of Parking and Transportation Services. Initial ID cards are issued free of charge; a \$5 fee is currently charged for replacement IDs. Regular office hours are Monday through Friday, 8:30 A.M. to 4:30 P.M. During the first month of each term, office hours are extended to 6:15 P.M. each Tuesday and Wednesday.

## CAMPUS CENTER

The Robeson Campus Center, located at 350 Dr. Martin Luther King, Jr. Boulevard, serves as the focal point for student activities and provides space for gatherings of all kinds for the Rutgers–Newark community. Open to all students, faculty, staff, and alumni, the campus center offers a 300-seat dining hall, a professional art gallery, the University Club, student lounges, meeting and conference rooms, a new game room for table tennis, pocket billiards, chess, and other table games, offices and mail boxes for student organizations, and a multipurpose room capable of holding functions for more than six hundred people. The addition and renovation, completed in January of 1993, now offers additional meeting and activity space, two new dining facilities (the University Club for fine buffet luncheons and a food court adjacent to the new main student lounge) and a gift shop.

Information about the services and activities provided by the campus center can be obtained by calling 973/353-5933, or visiting the information desk located at the plaza entrance. Information regarding all student organizations and activities on campus is available at the Office of Student Development/Activities, Room 302, Robeson Campus Center (973/353-5881). For room reservations at the campus center, contact the Administrative Office, Room 219, Robeson Campus Center (973/353-5568).



## Robeson Center Art Gallery

The Robeson Campus Center houses the Robeson Center Art Gallery, which is managed by the Department of Visual and Performing Arts. The gallery mounts exhibitions that provide support for both the visual and performing arts programs and serves as an important cultural and academic resource for the campus and the community. Exhibitions and related programs are often developed in collaboration with a number of local cultural institutions such as the Newark Museum, Newark Library, and Newark Historical Society. Information about the gallery can be obtained by calling 973/353-5119.

## STUDENT ACTIVITIES

Rutgers maintains a quality out-of-classroom program experience as a means of broadening the overall educational development of its students. The Office of Student Development and the Rutgers–Newark Program Board plan and coordinate an extensive activity program which enriches the educational, cultural, and social experience of students. The Office of Multicultural Student Affairs is responsible for the development of specific programs and activities for our diverse student community. It serves as adviser to minority students and their organizations in all aspects of their cocurricular involvement at the campus.

Musicians, featuring both classical and contemporary styles, regularly appear on campus. The Rutgers–Newark string orchestra, concert band, and university chorus also provide outlets for student musical talent. Art exhibits are a frequent feature at the campus center. Professional and student groups perform at the theater, and frequent trips to the New York theaters are promoted by a number of student organizations. The *Observer*, the student newspaper, the *Encore*, the yearbook, *Gallery* and *Untitled*, literary magazines, WRNU, the student radio station, and several other student organizations provide valuable experience for students interested in communication media.

Close to one hundred on-campus undergraduate organizations related to academic interests, contemporary problems, the arts, religion, and the professions encourage students to participate in their regularly scheduled meetings and special events. Both social and honorary fraternities and sororities are available to students who wish to identify with small service, social, or professional groups. Several of the major religious faiths maintain fully staffed facilities near the campus.

## STUDENT GOVERNMENT

Student governance is an integral part of the college experience. The student governing associations of Newark College of Arts and Sciences, the College of Nursing, and University College–Newark serve as a liaison between the administration and the student body. At regularly scheduled meetings of the associations, students participate in self-government. Students also serve as members of committees that deal with policy and procedural operations of the colleges and the university.

## ATHLETIC AND RECREATION PROGRAMS AND FACILITIES

The Golden Dome Athletic Center at 42 Warren Street is the location for both the athletic and recreation departments. The Golden Dome Athletic Center houses an eight-lane, twenty-five-yard swimming pool, four racquetball courts, five outdoor, lighted tennis courts, two gymnasiums—a Recreation Gym (contains two basketball or two regulation volleyball courts) and the Arena Gym (which seats 1,200 for athletic contests)—men's and women's locker rooms, and finally a modern, up-to-date fitness center that contains a free weight and Nautilus room, multipurpose aerobics/exercise room, and an executive fitness room that contains all the electronic workout machines such as step masters, setup mill, bikes, treadmills, Nordic Tracks, and other state-of-the-art fitness machines.

Alumni Field, with athletic recreation fields, a regulation soccer field, an all-weather track, and baseball and softball fields, is located next door to the Golden Dome Athletic Center.

A varied intercollegiate athletic NCAA Division III (Men's volleyball in Division I) program that features varsity competition in men's and women's baseball, basketball, soccer, softball, tennis, and volleyball is offered at Rutgers–Newark. The Rutgers–Newark Scarlet Raiders provide lots of excitement for all their spectators within the nationally renowned New Jersey Athletic Conference.

The recreation department provides a multitude of activities for the Rutgers–Newark community and offers some thirty-five to forty-five noncredit activity classes in aquatics, martial arts, fitness, team and individual sports, and racquet sports each term. The recreation department also offers a complete intramural schedule, adventure recreation trips, club sports, special events, and community programs.

All of these facilities are available for recreational use by students, faculty, staff, and recreation members. For more information, call 973/353-5924 (recreation) or 973/353-5474 (athletics).

## ALUMNI

### Alumni Relations

The university seeks the full support of its alumni and, in return, offers them a number of services and programs. The responsibility for working with the university's entire alumni body, now numbering over 250,000, is vested in the Department of Alumni Relations. The department has two main objectives. First, it maintains contact with Rutgers alumni, informing them of the university's programs with the hope that they will assist Rutgers in fulfilling its educational goals. Second, the department encourages alumni to continue their university friendships after graduation through social, educational, and reunion activities.

All undergraduate colleges and most graduate and professional schools have their own alumni association that sponsors programs based on the interests of the alumni of that college such as undergraduate scholarships, sponsorship of programs for student recruitment and career guidance, and support for a variety of campus events. Active membership is maintained through payment of regular alumni dues. Each alumni association is represented in the Rutgers University Alumni Federation which

sponsors university-wide programs such as homecoming, distinguished alumni awards, legislative receptions, group travel, and insurance. The Department of Alumni Relations provides guidance and administrative services to the college association, as well as to the network of regional alumni clubs throughout the country. The department is responsible for the addresses and biographical records of alumni.

The university publishes a magazine for alumni and friends of the university.

The department's Newark office is located at 15 Washington Street, Newark, NJ 07102 (973/353-5242).

### **Rutgers University Foundation**

The Rutgers University Foundation was incorporated in 1973 as a semiautonomous division of the university responsible for soliciting funds from private sources.

With a full professional staff and a national network of volunteers who sit on advisory committees and assist in the solicitation of funds, the foundation has steadily—indeed, dramatically—increased the amount of annual private support for Rutgers, private support that provides funding for more than 1,500 university programs that encompass every division of the university and every campus.

In the process of developing new ways to finance programs at Rutgers from nonpublic sources, the foundation has garnered national recognition and awards for its fund-raising and communications. The professional staff includes experts in corporate and foundation relations, an area that accounts for more than half of the private monies received by the university. It also includes specialists in deferred and planned giving, in fund-raising for athletics, in soliciting annual gifts, in obtaining major and special gifts, and in managing campaigns to fund capital needs.

In 1984, the foundation undertook the most ambitious fund-raising endeavor in the university's history, the \$125 million Campaign for Rutgers. Using advanced fund-raising methods to identify new philanthropic sources for Rutgers, the foundation structured the campaign to raise funds for areas that have direct bearing on the quality of education and research at the university. Campaign funds were earmarked to support distinguished professorships, to underwrite new program development and departmental research, to allow for renovation of campus facilities, to endow scholarships and fellowships, and to establish a pool of "opportunity resources" for all university divisions. In 1990, the campaign concluded 34 percent over goal and in the process increased annual contributions to the university from \$9 million to \$27 million.

Since the conclusion of the Campaign for Rutgers, annual contributions have continued to rise, exceeding \$53 million during the 1996–1997 fiscal year, and the foundation has undertaken several successful multimillion-dollar "special purpose" campaigns: the Campaign for the Center for the Study of Jewish Life, the Campaign for the School of Law–Newark, the Campaign for Rutgers Stadium and Women's Athletic Scholarships, the Alexander Library Campaign, and the university-wide Campaign for Community, Diversity, and Educational Excellence.

Further information about the foundation may be obtained from the Rutgers University Foundation, Winants Hall, Rutgers, The State University of New Jersey, 7 College Avenue, New Brunswick, NJ 08901-1261 (732/932-7777).

# Academic Policies and Procedures

This chapter contains important regulations that govern the enrollment and academic progress of Rutgers–Newark students. For regulations that apply to the College of Nursing alone, see the College of Nursing section of this catalog; for regulations that apply to Newark College of Arts and Sciences alone, see the NCAS chapter in the Liberal Arts section of this catalog; for regulations that apply to University College–Newark alone, see the UC–N chapter in the Liberal Arts section of this catalog; for regulations that apply to the School of Management alone, see the School of Management section of this catalog.

## STUDENT RESPONSIBILITY TO KEEP INFORMED

This catalog, along with the *Schedule of Classes* and registration material distributed each term, provides essential information. Students are responsible for keeping themselves informed of current policies, procedures, and changes printed in these publications and in the official notices that are announced or posted.

Students should also be aware that the curricular requirements are those in effect in the academic year of their admission. Students who withdraw for two or more terms are subject to the requirements in effect during the term that they return. Students who change their major are governed by the curricular requirements and regulations in effect during the academic year in which the change is made.

## EXCEPTIONS TO ACADEMIC REGULATIONS

Students may request exceptions and waivers to any academic regulation either of the college or the university through a petition to the appropriate dean. The petition should cite the regulation in question and state the basis for waiver or exception upon which the request rests. Petitions for exceptions or waivers of college or university regulations are reviewed by the appropriate committee or officer of the college. Petitions for exceptions or waivers of university regulations are forwarded to the appropriate university officer.

## REGISTRATION AND COURSE INFORMATION

Official admission to one of the colleges precedes registration for courses.

The registration process consists of three steps:

1. The selection of courses with the assistance of an adviser.
2. The submission of registration materials.
3. The payment of tuition and fees for the approved program.

The registration process is completed only after full tuition and fees are paid in accordance with billing instructions.

Registration dates for each term are announced in advance by the Office of the Registrar in the *Schedule of Classes*. New students receive instructions for registration by mail from the director of admissions or the appropriate Office of the Dean before they enter college. Continuing students receive instructions by mail from the registrar. Students seeking reentry must obtain the necessary information, in person, at the appropriate dean's office.

## World Wide Web

Registration and course information, including registration instructions, grades, and transcripts, are now available at [registrar.rutgers.edu/NWINDEX.HTM](http://registrar.rutgers.edu/NWINDEX.HTM), the Newark Registrar's web site. Current students wishing to access grades or transcripts must have an active Pegasus account. Contact Rutgers University Computing Services (RUCS), Engelhard Hall, to establish a computing account.

## Late Registration

Students who do not complete registration during the period specified in the registration instructions may do so during the late registration period. A late registration fee of \$50 is charged. The university reserves the right to refuse registration to a student who does not adhere to published registration schedules.

## Registration at Other Units of Rutgers

A student may register for a course at other divisions of Rutgers. Written permission must be obtained from the appropriate dean at the school of matriculation. If the course is in the student's major, written permission must be obtained from the chairperson of the major department as well as the dean.

## Registration at Colleges Outside Rutgers

A student who wishes to enroll in courses at another institution and enroll simultaneously at Rutgers must obtain permission from the appropriate dean. If a course is required for the student's major, permission must be obtained from the student's departmental chairperson, also. All such requests must be made in writing well in advance of the deadline for registration at the other institution. Credit is not granted for work carried concurrently without prior permission.

Students who wish to enroll in a course offered at Essex County College or the University of Medicine and Dentistry of New Jersey must follow these procedures:

1. Obtain signatures on the Cross Registration form, indicating approval by the appropriate dean and/or the student's departmental chairperson.
2. Register at Rutgers. Include the Essex County College or University of Medicine and Dentistry of New Jersey course on the course registration card. The "exchange registration" numbers are listed in the *Schedule of Classes* under "Exchange (376)."
3. Submit the signed Exchange Registration form to the registrar of the school offering the course.

Students who wish to enroll in a course offered at the New Jersey Institute of Technology must follow these procedures:

1. Consult registration materials mailed to students each term.
2. Include each New Jersey Institute of Technology course on the Rutgers course registration card. New Jersey Institute of Technology courses are listed as School 28 in the *Schedule of Classes*. Courses required for joint New Jersey Institute of Technology and Rutgers–Newark programs are listed in the *Schedule of Classes*, after the Rutgers courses. Register for NJIT courses in person at the Newark registrar's office.

Grades received from New Jersey Institute of Technology for exchange registration courses appear on the Rutgers transcript and are calculated in both the term and cumulative grade-point averages. Satisfactory completion of exchange registration courses at Essex County College or the University of Medicine and Dentistry of New Jersey appear as transfer credit.

## Summer Session Registration

Separate periods of instruction are offered during the summer from May through August. For information, consult the summer session catalog. The summer session office is located in Room 208 Blumenthal Hall. The telephone number is 973/353-5112.

## Change of Courses

College of Nursing students must obtain permission from their academic adviser and/or the appropriate dean to add or drop courses. Students may add courses up to the fifth day of instruction of the term.

Newark College of Arts and Sciences, School of Management, and University College–Newark students may add courses through the fifth day of classes on the Rutgers Touchtone Telephone Registration System. Dates for drop/add are listed in the *Schedule of Classes*.

Students may drop courses through the tenth day without payment of a late fee. No record of courses dropped during this period of time appears on the student's record.

From the eleventh day of instruction until the end of the eleventh week of instruction of the term, a student may drop a course and receive a *W* (withdrawal) grade. For each course dropped after the tenth day of the term, the university imposes a fee.

No course may be dropped after the eleventh week of the term. A student who stops attending a course and fails to give written notice to the registrar receives a failing grade in that course. No refund is granted for a course dropped after the tenth day of classes.

## Withdrawal and Readmission

### Withdrawal from College

A student who wishes to withdraw from all courses must obtain a Notification of Withdrawal form from the appropriate dean. The form must be signed by staff in the dean's office, the business office, the financial aid office (if the student receives financial aid), and the housing office (if the student lives in university housing). The completed form then must be submitted to the Office of the Registrar. A withdrawal form may be submitted by mail if illness prevents a student from presenting it in person.



A student who leaves the university without officially withdrawing in this manner receives a failing grade in each course. The date on which the dean signs the withdrawal form is considered the official withdrawal date.

A student is not eligible for any refund of tuition unless the withdrawal is formally reported to the registrar according to the proper procedure.

A student who officially withdraws from college prior to the end of the eleventh week of instruction receives grades of *W* for all courses. A student who leaves college during the final two weeks of instruction receives grades of *F* in all courses.

### Readmission to College

A student who is dismissed from college for any reason, who withdraws during a term, or who fails to register for the next regularly scheduled term (not including summer session) may not register again without receiving permission to reenter the college from the appropriate dean or the Scholastic Standing Committee. Students seeking reentry to the college must initiate the process at least thirty days prior to the beginning of the term for which registration is sought. A student who has been dismissed for academic reasons must, in addition, submit a written appeal to the Scholastic Standing Committee.

## GRADES AND RECORDS

Grades represent the level of quality of the student's performance measured against standards of knowledge, skill, and understanding as evaluated by the instructor. Grades are reported to the university registrar at the end of each term by the following symbols:

Grade	Definition	Numerical Equivalent
A	Outstanding	4.0
B+	Excellent	3.5
B	Good	3.0
C+		2.5
C	Satisfactory	2.0
D	Poor	1.0
F	Failing	0.0

### Other Grade Symbols

**P/NC (Pass/No Credit).** A nonnumerical grade of *Pass* (equivalent to grades of *A*, *B+*, *B*, *C+*, and *C*) or *No Credit* (equivalent to grades of *D* and *F*) is assigned to a student who has registered for a course on that basis. This option is open only to juniors and seniors in good academic standing. No more than one course may be taken on a *Pass/No Credit* basis during a single term or during the summer session, and credit is not allowed for more than four courses. This option may be used for electives only; it may not be used for courses required in the major or for courses used to satisfy the general curriculum requirements. A student must request the *Pass/No Credit* option at the Office of Student Affairs. This request must be made at the time of registration. This option may not be changed once the course officially begins. Degree credit is given for a grade of *Pass*. Neither *Pass* nor *No Credit* grades are included in the grade-point average.

**X (Examination Not Taken).** Assigned only when the instructor believes a student might have passed the course had the final examination been taken. The student must

arrange with the instructor to take the deferred examination. Deferred examinations from the fall term must be taken within two weeks after the beginning of the spring term. Deferred examinations from the spring term must be taken within two weeks after the close of the spring term.

**INC. (Incomplete).** Converts to *F* at the end of two terms.

**DF.** Disciplinary failure.

**RD, RF.** Reexamination permitted. May be used only when the instructor considers the examination grade to be so inconsistent with the student's previous work that the instructor cannot assign a grade better than *D*. The *R* grade symbol entitles the student to a reexamination in the course to try to improve the grade. The student must arrange to take the reexamination within two weeks of the end of the term. If reexamination is not taken within the time specified, the symbol *R* is dropped from the student's record and the numerical grade remains unchanged.

**T (Temporary).** Grades of *TB+*, *TB*, *TC+*, *TC*, *TD*, and *TF* are used for all incomplete and temporary grades. Temporary grades are given at the discretion of the instructor when course work requirements have not been properly completed, e.g., major assignments or examinations. The letter following the *T* represents the grade the instructor would assign if the outstanding work were to remain uncompleted. This temporary grade becomes permanent if the work is not completed as required and notice is not received from the instructor to convert the temporary grade to a permanent one. The permanent grade may not be poorer than the assigned letter grade. Fall term *T* grades must be completed by the end of the sixth week of the spring term. Spring term and summer session *T* grades must be completed by October 15. The deadline for October graduates is September 15. It remains, however, the prerogative of an individual faculty member and/or the Office of Student Affairs to set earlier deadlines and internal procedures for completing the work required. It is the responsibility of the student to contact the instructor for an interpretation of the *T* grade and to establish a timetable for the completion of the work.

**TZ.** The grade *TZ* can be assigned to a student who does not appear to have attended class or to have completed any course work, and where the faculty member does not desire to assign *F* or *TF*. The grade is used rather than leaving the grade blank, and will be assigned by the registrar if the faculty member leaves the grade blank or a computer-entry error has credited a blank grade. If the student to whom the grade of *TZ* has been assigned fails to clear up the registration problem within the following term, the *TZ* grade will revert to an *F* and the cumulative grade-point average recalculated accordingly.

**W (Withdrawal).** A *W* is assigned when a course has been dropped after the tenth day of classes and before completion of the eleventh week of the term. A failing grade is assigned if a course is dropped without the proper permission or after the eleventh week of the term.

**TT.** A *TT* grade is used in the honors program and in the medical technology major in lieu of first term course grades. The grade may be raised or lowered when the research thesis or honors project is presented at the end of the second term.

**S/U (Satisfactory/Unsatisfactory).** Grades used in courses where the *N* credit prefix is used. *S* (equivalent to grades of *A*, *B+*, *B*, *C+*, and *C*), *U* (equivalent to grades of *D* and *F*).



## Credit Prefixes

**E.** The symbol *E* preceding course credits indicates that no credit is earned toward the degree and that no grade is computed in the cumulative grade-point average.

**J.** The symbol *J* preceding course credits indicates that those credits are earned toward the degree but the grade is not computed in the cumulative grade-point average.

**K.** The symbol *K* preceding course credits indicates that those credits are not earned toward the degree but the grade is computed in the cumulative grade-point average.

**N.** The symbol *N* indicates no credit earned toward the degree, no grade computed in the cumulative grade-point average, no final exam taken, and the receipt of a grade of *S* or *U*.

**P/NC.** This symbol preceding course credits indicates a course taken on a *Pass/No Credit* basis.

**R.** The symbol *R* indicates that the course has been repeated and that the original grade was *D* or *F*.

## Term Grades

At the end of each term, grades are available through the Touchtone Grade Reporting System. Unofficial transcripts can be ordered through the touchtone system or directly at the registrar's office.

## Warning Notices

Before the ninth week of instruction of the term, warning notices are mailed to students for those courses in which their performance has been less than satisfactory. Students who receive warnings should immediately consult the faculty member(s) concerned and their academic adviser to discuss an appropriate course of action.

Warning notices should be taken seriously. They may be issued for a variety of reasons, including poor attendance, failure to submit assignments on time, inadequate preparation for the level of course work expected, or an inability to demonstrate a reasonable grasp of the subject matter.

A warning is *not* a final determination of grade. With proper advice and sufficient effort, students who receive these notices may be able to bring their performance to an acceptable level. Failure to receive a warning notice does not imply that a passing grade will be awarded at the end of the term.

## Student Complaints about Grades

Students who wish to file a complaint about a course grade, or a grade received for a particular piece of work in a course, should (1) attempt to resolve the matter through discussion with the instructor. If the issue cannot be satisfactorily resolved between student and instructor, the student may (2) specify in writing the basis for the complaint and request a review by the department chairperson. A written complaint about a grade for work completed while the course is in progress must be submitted to the department chairperson no later than two weeks after notification of the grade. A student must submit a written complaint about a final grade to the department chairperson no later than four weeks after the end of the exam period for that term.

A student who wishes to appeal the decision of the department should appeal in writing to the Dean of Student Affairs. Written notification of the action taken by either the chairperson or by the dean is sent to the student within four weeks of the filing of the appeal, excluding those weeks in which classes are not in regular session.

## Cumulative Grade-Point Average

The cumulative grade-point average is computed by multiplying the grade received in each course taken for credit (and to be included in the average) by the number of credits earned in the course. The grade points earned in all such courses are added together and the sum is divided by the total credits earned in those courses.

Grade (Numerical Equivalent) x Credits = Grade Points

$$\frac{\text{Total Grade Points}}{\text{Total Credits}} = \text{Cumulative Grade-Point Average}$$

## Repeating Courses

A student who earns a grade of *D* or *F* in a course taken at Newark College of Arts and Sciences, University College–Newark, or New Jersey Institute of Technology may repeat the course at any of these schools and only the higher of the two grades is computed in the cumulative grade-point average. The option is subject to the following limitations:

1. The original *D* or *F* remains on the transcript.
2. The course repeated must carry the same subject number and course title, or the equivalent as approved by the Faculty of Arts and Sciences–Newark.
3. If the course is repeated more than once, the repeat option cancels only one grade (the lowest); all other grades are included in the computation of the cumulative grade-point average.
4. Degree credit is awarded only once, no matter how many times the course is repeated.

## Omission of First Term Grades

A student may elect to omit from the cumulative grade-point average all grades earned in the first term. To exercise this option, the student must file a written request at the Office of the Registrar during the first two weeks of the term following the term in which the student has earned 56 credits. This rule is not applicable to transfer students unless the student transferred from another division of the university offering the same option, or the student transferred into the college with fewer than 12 credits.

## Transcripts

Requests for official transcripts are accepted only from the student concerned. Requests should be made in person or in writing to the Office of the Registrar, Rutgers, The State University of New Jersey, 249 University Avenue, Newark, NJ 07102. Remittance at the rate of \$3 per copy, payable to Rutgers, The State University, must accompany the request. The fee is waived, however, if the transcript is issued to any other division of Rutgers. Transcripts are neither issued for students with outstanding financial obligations to the university nor for students for whom a disciplinary charge is pending resolution and who have failed to respond to those charges.

## Holds

The privileges of registration, advance registration, receipt of a diploma at commencement, and receipt of transcripts of record are barred to students having outstanding obligations to the university. Obligations may take the form of unpaid monies, unreturned or damaged books and equipment, parking fines, other charges for which a student may become legally indebted to the university, and failure to comply with disciplinary sanctions or administrative actions.

University departments and offices may place "holds" on registration, diplomas, and transcripts for any students having an outstanding obligation.

Registration is barred for students with obligations of \$100 or more. Transcripts are held for any outstanding debts. Grades and transcripts may also be withheld for not complying with immunization requirements.

## SCHOLASTIC STANDING

A student's scholastic standing, the basis for continuance in college, probation, honors, and graduation, is determined by the weighted average of all the grades earned in courses taken at Rutgers and at New Jersey Institute of Technology through the Exchange Registration Program which are applicable to the student's degree program. Students must maintain a cumulative grade-point average of 2.0 or better.

### Scholastic Review

The Scholastic Standing Committee reviews and takes action on the record of any student whose work is considered deficient. Such students may be dismissed from the college or placed on probation. The decisions of the committee constitute the final authority on these matters.

### Probation

Students with a cumulative grade-point average of less than 2.0 are placed on academic probation. Such students may be notified by letter to make an appointment to see one of the deans of the college or a member of the Scholastic Standing Committee. A course of action to improve the student's academic standing may be specified in a contract signed by the student. The terms of the contract may include a limitation on extracurricular activities, on the number of credit hours carried, and/or changes in the student's program of study.

### Dismissal

A student is dismissed from the college when his or her cumulative grade-point average is less than the minimum indicated below or the term grade-point average is less than 2.0 for two consecutive terms:

0-55 credits	1.500
56-90 credits	1.700
over 90 credits	1.900
graduation	2.000

To graduate, a student must achieve a cumulative grade-point average of 2.000 or better. The Scholastic Standing Committee may dismiss any student when it becomes improbable that the minimum average or other graduation requirements will be met.

However, no student is dismissed for academic reasons until 24 credits (or two terms for part-time students) have been attempted. No student is dismissed without having

been placed on probation in the immediately preceding term; no student is dismissed who has obtained a term grade-point average of 2.0 or better when that average is based upon a minimum of 8 credits for NCAS students or 6 credits for UC-N students in the immediately preceding term.

School of Management students falling below a 2.5 cumulative grade-point average are subject to dismissal from the School of Management. They remain enrolled in the Newark College of Arts and Sciences or University College-Newark, subject to the requirements listed above.

Students who are dismissed may apply for readmission after a minimum of one year and proof of successful college-level work at another institution.

### Appeal Procedure

A student has the right to appeal academic dismissal when such action has been based solely upon the numerical criteria indicated above, and when there is strong evidence that the student will do much better work in the future.

To appeal an academic dismissal, the following materials must be submitted within ten days of notification by the college:

1. A letter from the student stating the reasons for the appeal. The letter should be sent to the Scholastic Standing Committee, c/o Office of Student Affairs, Hill Hall, Rutgers, The State University of New Jersey, Newark, NJ 07102.  
The student must describe any problems that may have interfered with academic performance in the past and explain why substantial improvement is expected in the future.
2. Other supportive material that may be relevant to the case including medical claims.
3. The Scholastic Standing Committee welcomes letters of support from the student's academic adviser and others who are familiar with his or her academic performance and personal circumstances.

It is the responsibility of each student to become familiar with the academic regulations of the college, particularly with regard to scholastic standing requirements. An error of omission on the part of the college is not sufficient grounds for readmitting a student on appeal if satisfactory progress toward the degree has not been made.

## Graduation

Degrees are conferred by the university upon recommendation of the appropriate faculty. Degrees are conferred and diplomas issued at the annual commencement each May. A student who completes degree requirements in October or January may request a diploma in December or April, respectively. October and January diplomas may be picked up at the Office of the Registrar.

Diplomas are withheld if a student has a hold against his or her record.

It is the responsibility of each student to ensure that all the graduation requirements of the college, including certification of the major, have been fully met well before the expected date of graduation. Student records are officially closed upon graduation. To participate in Commencement ceremonies, a student must have successfully completed all degree requirements. Inquiries concerning graduation may be directed to the Office of Student Affairs.

Diploma application forms must be completed and filed in the Office of Student Affairs by candidates for graduation as follows:

Degree Granted	Application Deadline
October	August 3
January	October 19
May	January 22

Unless the application is filed by the appropriate date, the degree is not conferred and graduation is delayed.

Students who, in May, require fewer than 12 credits to complete degree requirements, may be able to satisfy the deficiency during the subsequent summer session, thus qualifying for the degree in October. In such instance, the student is given a statement from the registrar indicating completion of all requirements for graduation; however, the diploma is not conferred until commencement the following May. This is also true for those who complete all degree requirements at the end of the fall term and qualify for the degree in January.

Requests for diplomas to be mailed should be sent to the registrar as early as possible, and should indicate the address to which the diploma should be mailed in July.

## RESIDENCY REQUIREMENT (Credits That Must Be Taken at Rutgers)

NCAS and UC-N degree candidates must complete a minimum of 30 of the terminal 42 credits toward the degree at the college awarding the degree unless a student's curriculum specifically provides for instruction outside the university. Courses may be taken at either NCAS or UC-N. In the case of joint-degree programs with NJIT, courses taken for the major at NJIT will meet the residency requirements. Up to 12 of the 42 terminal credits may be taken outside the university providing written permission has been granted by the Office of Student Affairs and by the chairperson of the department in which the student is majoring.

## CLASS SCHEDULES AND HOURS

Starting and closing dates for each term, scheduled holidays, and other important scheduling information can be found in the academic calendar.

### Attendance

Attendance at all regularly scheduled meetings of a course is expected. The course instructor is expected to state in writing the attendance requirements for each course. The recognized grounds for absence are: illness requiring medical attention, curricular or extracurricular activities approved by the faculty, personal obligations claimed by the student and recognized as valid, recognized religious holidays, and severe inclement weather causing dangerous traveling conditions.

The president of the university or an official appointed by the president is authorized to cancel classes, or any part thereof, in the event that weather conditions so dictate.

## Absence Due to Religious Observance

It is the policy of the university to excuse without penalty students who are absent because of religious observances and to allow the makeup of work missed because of such absence. Examinations and special required out-of-class activities ordinarily are not scheduled on those days when such students refrain from participating in secular activities. Absences for reasons of religious obligation are not counted for purposes of reporting. A student absent from an examination because of required religious observance is given an opportunity to make up the examination without penalty.

## Cancellation of Classes

It is the general policy of the university not to cancel classes because of inclement weather. However, there are instances where especially adverse and hazardous weather conditions make it impossible to travel and to conduct academic activities at the campus. On those infrequent occasions, appropriate announcements are made over the following local radio stations: WABC, WCBS, WMCA, WOR, WMTR, WDHA, WERA, WBGO, and WCTC. Arrangements for makeup work are announced by individual instructors.

## Final Examinations

Final examinations are held at the close of each term. A student who misses a final examination for a valid reason may ask the instructor for a deferred examination. If the student is denied permission to take a deferred examination, this decision may be appealed to the department chairperson, and finally to the appropriate dean.

Deferred examinations from the fall term must be taken within two weeks after the beginning of the spring term. Deferred examinations from the spring term must be taken within two weeks after the close of the spring term. In cases of extreme hardship, the time may be extended for a strictly limited period with written permission of the dean and the instructor.

## POLICY ON ACADEMIC INTEGRITY SUMMARY

"Academic freedom is a fundamental right in any institution of higher learning. Honesty and integrity are necessary preconditions to this freedom. Academic integrity requires that all academic work be wholly the product of an identified individual or individuals. Joint efforts are legitimate only when the assistance of others is explicitly acknowledged. Ethical conduct is the obligation of every member of the university community and breaches of academic integrity constitute serious offenses" (Academic Integrity Policy, p. 1).

The principles of academic integrity entail simple standards of honesty and truth. Each member of the university has a responsibility to uphold the standards of the community and to take action when others violate them.

Faculty members have an obligation to educate students to the standards of academic integrity and to report violations of these standards to the appropriate deans.

Students are responsible for knowing what the standards are and for adhering to them. Students should also bring any violations of which they are aware to the attention of their instructors.



## Violations of Academic Integrity

Any involvement with cheating, the fabrication or invention of information used in an academic exercise, plagiarism, facilitating academic dishonesty, or denying others access to information or material may result in disciplinary action being taken at either the college or university level. Breaches of academic integrity can result in serious consequences ranging from reprimand to expulsion.

Violations of academic integrity are classified into four categories based on the level of seriousness of the behaviors. Brief descriptions are provided below. This is a general description and is not to be considered as all-inclusive.

### Level One Violations

These violations may occur because of ignorance or inexperience on the part of the person(s) committing the violation and ordinarily *involve a very minor portion of the course work*. These violations are considered on academic merit and not as disciplinary offenses.

*Examples:* Improper footnoting or unauthorized assistance on academic work.

*Recommended Sanctions:* Makeup assignment.

### Level Two Violations

Level two violations involve incidents of a more serious nature and affect a more significant aspect or portion of the course.

*Examples:* Quoting directly or paraphrasing without proper acknowledgement on a moderate portion of the assignment; failure to acknowledge all sources of information and contributors who helped with an assignment.

*Recommended Sanctions:* Probation, a failing grade on the assignment, or a failing grade in the course.

### Level Three Violations

Level three offenses involve dishonesty on a significant portion of course work, such as a major paper, hourly, or final examination. Violations that are premeditated or involve repeat offenses of level one or level two are considered level three violations.

*Examples:* Copying from or giving others assistance on an hourly or final examination, plagiarizing major portions of an assignment, using forbidden material on an hourly or final, using a purchased term paper, presenting the work of another as one's own, altering a graded examination for the purposes of regrading.

*Recommended Sanctions:* Suspension from the university for one or more terms, with a notation of "academic disciplinary suspension" placed on a student's transcript for the period of suspension, and a failing grade in the course.

### Level Four Violations

Level four violations are the most serious breaches of academic integrity. They include repeat offenses of level three violations.

*Examples:* Forgery of grade change forms, theft of examinations, having a substitute take an examination, dishonesty relating to senior thesis, master's thesis, or doctoral dissertation, sabotaging another's work, the violation of the ethical code of a profession, or all infractions committed after return from suspension for a previous violation.

*Recommended Sanctions:* Expulsion from the university and a permanent notation on the student's transcript.

Faculty who believe that violations have occurred should immediately contact the Office of the Dean. Students who suspect that other students are involved in actions of academic dishonesty should speak to the instructor of the course. Questions on reporting procedures may be directed to the Office of the Dean.

## UNIVERSITY CODE OF STUDENT CONDUCT SUMMARY

*A university in a free society must be devoted to the pursuit of truth and knowledge through reason and open communication among its members. Its rules should be conceived for the purpose of furthering and protecting the rights of all members of the university community in achieving these ends.*

*All members of the Rutgers University community are expected to behave in an ethical and moral fashion, respecting the human dignity of all members of the community and resisting behavior that may cause danger or harm to others through violence, theft, or bigotry. All members of the Rutgers University community are expected to adhere to the civil and criminal laws of the local community, state, and nation, and to regulations promulgated by the university. All members of the Rutgers University community are expected to observe established standards of scholarship and academic freedom by respecting the intellectual property of others and by honoring the right of all students to pursue their education in an environment free from harassment and intimidation.*

*Preamble  
University Code of Student Conduct*

### Overview

Communities establish standards in order to ensure that they are able to fulfill their mission and keep their members from harm. The University Code of Student Conduct (referred to as "the code" in the remainder of this summary) defines those kinds of behavior that violate the standards of the Rutgers University community and also provides the mechanism for addressing alleged violations. In doing so, the code protects the rights of those accused of offenses (referred to as "respondents" in the remainder of this summary) by providing due process while also protecting victims of those offenses and the university community as a whole.

### Process

The following summary presents key aspects of the code. Students should consult the code itself for complete information on each point.

#### *Filing a Complaint*

Any individual may file a complaint against a student suspected of violating the code by notifying the dean of students (or equivalent) of the respondent's college or school, or the director of judicial affairs in the Division of Student Affairs.

#### *Preliminary Review*

Upon receipt of a complaint, a preliminary review is conducted by the dean of students (or equivalent) or his or her designee to assess the evidence and determine if it is sufficient to proceed to a hearing. The dean conducting this



review also assesses the seriousness of the charges. The most serious charges can, upon a finding of responsibility, result in separation from the university (suspension or expulsion) and are heard at university hearings. Less serious offenses (nonseparable offenses) are heard according to the procedures in place at the student's college or school of affiliation.

### **Separable Offenses**

The following offenses are deemed serious enough to potentially result in separation from the university should a student be found responsible at a hearing:

1. violations of academic integrity
2. forgery, unauthorized alteration or unauthorized use of any university documents or records or any instrument or form of identification
3. intentionally furnishing false information to the university or intentionally initiating or causing to be initiated any false report, warning, or threat of fire, explosion, or other emergency
4. use of force against any person or property or the threat of such force
5. sexual assault or nonconsensual sexual contact
6. hazing
7. violation of the university's Student Life Policy against Verbal Assault, Defamation, and Harassment (Copies are available from the judicial affairs office or dean of students' office.)
8. unauthorized entry into, unauthorized use of, or misuse of university property, including computers and data and voice communication networks
9. intentionally or recklessly endangering the welfare of any individual or intentionally or recklessly interfering with any university activity or university sponsored activity
10. use, possession, or storage of any weapon, dangerous chemical, fireworks, or explosive, whether or not a federal or state license to possess the same has been issued to the possessor
11. the distribution of alcohol, narcotics, or dangerous drugs on university property or among members of the university community, if such distribution is illegal, or the possession of a sufficiently large quantity as to indicate an intention to distribute illegally
12. theft of university services or theft of, or intentional or reckless damage to, university property or property in the possession of, or owned by, a member of the university community, including the knowing possession of stolen property (Intentional or reckless misuse of fire safety equipment is regarded as damage under this section of the code.)
13. the violation of the ethical code of one's intended profession either by graduate students enrolled in any of the university's professional or graduate schools or by undergraduate students in clinical courses or settings related to their intended profession
14. violations of federal, state, or local law where such violations have an adverse effect on the educational mission of the university
15. failure to comply with the lawful directions of university officials, including campus police officers acting in performance of their duties

16. knowingly providing false testimony or evidence; disruption or interference with the orderly conduct of a disciplinary conference or hearing; violating the terms of any disciplinary sanction imposed in accordance with this code, or any other abuse of the university's disciplinary procedures.

### **Campus Advisers**

Both complainants and respondents may select a campus adviser to assist them during the disciplinary process. Campus advisers may fully represent students, including speaking on their behalf. The Office of the Vice President for Student Affairs maintains a list of trained campus advisers for this purpose. Students are free to select any member of the university community to serve as their advisers, whether they are on the list or not.

### **Attorneys**

Complainants and respondents may also, at their own expense, seek the advice of an attorney in addition to that of a campus adviser. Attorneys are free to advise students, to assist in the preparation of their cases, and to attend hearings, but may not speak on behalf of their clients or question witnesses at a hearing.

### **University Hearings**

University hearings are presided over by a hearing officer and heard by a hearing board usually composed of three students and two faculty members. It is the hearing board's responsibility to determine whether the accused student is responsible or not responsible for violating the code. If the hearing board determines a student to be responsible by the standard of clear and convincing evidence, it also recommends a sanction for the offense to the vice president for student affairs. The vice president for student affairs considers the hearing board recommendation and determines the sanction.

### **Appeals**

A student found responsible for violating the code may appeal the finding, the sanction, or both. Appeals are filed through the Office of the Vice President for Student Affairs, which forwards them to the Appeals Committee of the appropriate campus (Camden, Newark, New Brunswick).

### **Authority for Student Discipline**

Ultimate authority for student discipline is vested with the Board of Governors of Rutgers, The State University of New Jersey. This authority has been delegated to university administrators, faculty, students, committees, and organizations as set forth in the University Code of Student Conduct. The above summary is intended to present some key facts of the code. Copies of the code are available from all dean of students' offices and have been placed at the reference desks of all university libraries. In addition, the director of judicial affairs in the Division of Student Affairs will provide copies of the code upon request and is available to answer any questions about the code or related judicial matters.

## UNIVERSITY SAFETY AND SECURITY

The safety and security of all members of the university community is of paramount concern to the university's public safety staff.

Comprising commissioned police officers with full investigative and arrest authority, security officers, and dispatchers, members of the public safety staff patrol each campus and respond to requests for assistance on a full-time basis, 365 days a year and twenty-four hours a day. However, it is the duty of all students, faculty, and staff to actively maintain a safe environment, to use due care in their own safety and the safety of others, and to comply with all local, state, and university regulations regarding their own protection and the protection of others.

Primary responsibility for safety and security on the New Brunswick/Piscataway campus is vested in the associate vice president for administration and public safety. On the Newark and Camden campuses, these responsibilities reside in the Office of the Provost.

### Public Safety Information

Information regarding public safety at Rutgers is available from the campus police departments. The publication *Safety Matters*, a brochure outlining public safety statistics, services, and programs on each of Rutgers' regional campuses, is published annually and distributed free of charge. To receive a copy of *Safety Matters*, please call the appropriate Rutgers Police Department office at one of the following numbers:

Camden: 609/225-6009  
Newark: 973/353-5478  
New Brunswick: 732/932-8407

## ADMINISTRATIVE PROCEDURES FOR RESPONDING TO DISRUPTIONS

An academic community, where people assemble to inquire, to learn, to teach, and to reason together, must be protected for those purposes. While all members of the community are encouraged to register their dissent from any decision on any issue and to demonstrate that dissent by orderly means, and while the university commits itself to a continual examination of its policies and practices to ensure that causes of disruption are eliminated, the university cannot tolerate demonstrations that unduly interfere with the freedom of other members of the academic community.

With this in mind, the following administrative procedures have been formulated to guide the implementation of university policy:

1. The president of the university and the vice president for academic affairs will have the authority throughout the university to declare a particular activity to be disruptive. When neither the president nor the vice president for academic affairs is available to make such a decision, the senior vice president and treasurer or the provosts of Newark and Camden have the same authority.

2. Broadly defined, a disruption is any action that significantly or substantially interferes with the rights of members of the academic community to go about their normal business or that otherwise unreasonably interrupts the activities of the university.
3. A statement will be read by the appropriate officers as specified in (1) or by such officers as they may designate for the purpose of such reading and will constitute the official warning that the activity is in violation of university policy, that it must cease within a specified time limit, and where appropriate, that no commitments made by university officials will be honored if those commitments are made under duress.
4. If the activity continues beyond the specified time limit as determined by the official in authority, the authorized officers as specified in (1) will have the discretion to call upon the university police to contain the disruption. Ordinarily, the president of the university alone, or in his or her absence the vice president for academic affairs, will have the authority to decide that civil authorities beyond the campus are to be called upon to contain those disruptions that the university police are unable to handle. In extraordinary circumstances, where neither the president nor the vice president for academic affairs is available to make such a decision, the senior vice president and treasurer or the provosts of Newark and Camden have the same authority.
5. The deans of students are the chief representatives of the deans of the colleges in all matters of student life. Members of the university community who are aware of potentially disruptive situations are to report this to the deans of students on their respective campuses. In a disruption, the deans of students and their staff members have a twofold responsibility: to protect against personal injury and to aid in providing for the order of the university. In the latter case, the deans of students, as well as other university personnel, may be called upon to coordinate or assist members of the academic community in ending the disruption, directing it to legitimate channels for solution, or identifying those who have violated the rights of others.

## NONDISCRIMINATION POLICY

It is the policy of Rutgers, The State University of New Jersey, to make the benefits and services of its educational programs available to students without discrimination on the basis of race, religion, color, national origin, ancestry, age, sex (except Douglass College, which is entitled under the law to remain a single-sex institution), sexual orientation, disability, marital status, or veteran status. The university complies with Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and the Americans with Disabilities Act of 1990. Questions about these laws, or allegations of student rights violations, should be directed to Brian Rose, Director of Compliance and Student Policy Concerns and Designated Employee for Student Rights Compliance, Rutgers, The State University of New Jersey, 3 Bartlett Street, New Brunswick, NJ 08901-1190 (732/932-7312).

## Discrimination Based on Sexual Orientation

Rutgers, The State University of New Jersey, has a clear policy that seeks to guarantee that the services and benefits offered to its students are available equally to all. This includes equality regardless of sexual orientation. However, ROTC programs are governed by the United States Department of Defense, which maintains a policy of discrimination against gays, lesbians, and bisexuals. Hence, equal opportunities are not guaranteed to all who may wish to fully participate in ROTC programs.

The university's opposition to the Department of Defense policy of discrimination will be actively maintained until full equality of access and benefits is available to all, regardless of sexual orientation. In the meantime, the university has secured the rights of all students to enroll in and receive academic credit for ROTC courses. Students who believe that they have been subjected to discrimination by ROTC, or by any other division of the university, should contact Dr. Roselle L. Wilson, Vice President for Student Affairs (732/932-8576).

## POLICY PROHIBITING HARASSMENT

The university prohibits harassment based on race, religion, color, national origin, ancestry, age, sex, sexual orientation, disability, marital status, or veteran status. Harassment is a kind of discrimination that violates state and federal civil rights laws, and is defined for purposes of those laws and the university's policy as any behavior:

1. that is unwelcome,
2. that targets a person because he or she has one or more of the protected characteristics,
3. that is engaged in by a person employed by or doing business with the university, and
4. that is sufficiently severe or pervasive to negatively alter that person or a group member's living, educational, or working environment.

*Sexual harassment* can take the form of unwelcome sexual advances; requests for sexual favors; or other unwelcome written, verbal, electronic, telephonic, or physical conduct of a sexual nature. *Hostile environment harassment* on the basis of sex, race, religion, color, national origin, ancestry, age, sexual orientation, disability, or marital or veteran status is persistent behavior that has the purpose or effect of unreasonably interfering with a person's work or academic performance or creating a hostile environment.

If you think you have been harassed on the basis of any of the protected categories listed above, have observed harassing behavior, or if you need more information, you are encouraged to contact the Director of University Harassment Compliance, Rutgers, The State University of New Jersey, 3 Bartlett Street, New Brunswick, NJ 08901-1190 (732/932-3122), or by email at [msgriff@rci.rutgers.edu](mailto:msgriff@rci.rutgers.edu). You may obtain copies of the policy prohibiting harassment and the process for making or responding to a complaint on our web page (<http://www.rci.rutgers.edu/~msgriff/>).

## POLICY AGAINST VERBAL ASSAULT, DEFAMATION, AND HARASSMENT

### Statement of Principles

Intolerance and bigotry are antithetical to the values of the university and unacceptable within the Rutgers community. One of the ways the university seeks to effect this value is through a policy of nondiscrimination, which prohibits discrimination on the basis of race, religion, color, sex, age, sexual orientation, national origin, ancestry, disability, marital status, or veteran status in university programs. In order to reinforce institutional goals of nondiscrimination, tolerance, and civility, the following policy against verbal assault, defamation, and harassment makes clear to students that such behavior toward others violates acceptable standards of conduct within the university. (This policy is not intended to supersede the university's policy against harassment.)

Verbal assault, defamation, or harassment interferes with the mission of the university. Each member of this community is expected to be sufficiently tolerant of others so that all students are free to pursue their goals in an open environment, able to participate in the free exchange of ideas, and able to share equally in the benefits of our educational opportunities. Beyond that, each member of the community is encouraged to do all that she or he can to ensure that the university is fair, humane, and responsible to all students.

A community establishes standards in order to be able to fulfill its mission. The policy against verbal assault, defamation, and harassment seeks to guarantee certain minimum standards. Free speech and the open discussion of ideas are an integral part of the university community and are fully encouraged, but acts that restrict the rights and opportunities of others through violence, intimidation, the destruction of property, or verbal assault, even if communicative in nature, are not protected speech and are to be condemned.

### Prohibited Conduct

Any of the following acts, even if communicative in nature, are prohibited "separation offenses" (charges that could lead to suspension or expulsion from the university) under the provisions of the University Code of Student Conduct:

1. Use of force against the person or property of any member of the university community or against the person or property of anyone on university premises, or the threat of such physical abuse. (Verbal assault may be prosecuted as a "threat of...physical abuse.")
2. Theft of, or intentional damage to, university property, or property in the possession of, or owned by, a member of the university. (Acts of graffiti or other vandalism may be prosecuted as "intentional damage to...property.")
3. Harassment, which is statutorily defined by New Jersey law to mean, and here means, purposefully making or causing to be made a communication or communications anonymously or at extremely inconvenient hours, or in offensively coarse language, or in any other manner likely to cause annoyance or alarm, or subjecting or threatening to subject another to striking, kicking, shoving or other offensive touching, or engaging in any other course of conduct or of repeatedly committed acts with purpose to alarm or seriously annoy any other person. Harassment is considered a separation offense under the University Code of Student Conduct.



4. Defamation, which is judicially defined to mean, and here means, the unprivileged oral or written publication of a false statement of fact that exposes the person about whom it is made to hatred, contempt, or ridicule, or subjects that person to loss of the goodwill and confidence of others, or so harms that person's reputation as to deter others from associating with her or him. Defamation is considered a separation offense under the University Code of Student Conduct.

While any of the four categories of acts listed above is a separation offense, that, if proven, could lead to a sanction of expulsion or suspension from the university under the provisions of the University Code of Student Conduct, clearly minor instances of such prohibited behavior should be resolved at the college level and not be treated as separation offenses requiring a university-level hearing. The initial judgments of whether a particular act is of a separable or nonseparable level are made by the appropriate college official and are subject to review by the Office of the Vice President for Student Affairs.

Students who believe themselves to be victims of verbal assault, harassment, or defamation should report such incidents to the dean or the dean of students of their college or school. In addition, the following individuals have been identified to handle complaints:

Brian Rose, director of compliance and student policy concerns, 3 Bartlett Street, College Avenue campus, 732/932-7312;

Cheryl Clarke, director of diverse community affairs and lesbian/gay concerns, Bishop House, Room 105, College Avenue campus, 732/932-1711;

Rory P. Maradonna, associate provost for student life, Armitage Hall, Room 248, Camden campus, 609/225-6050;

Raymond T. Smith, associate provost for student affairs, S.I. Newhouse Center, Newark campus, 973/353-5541.

Some complaints can and should be resolved by informal methods, while others will require the implementation of formal procedures. All complaints are treated confidentially; complainants are encouraged to report incidents even if they do not wish to pursue the matter beyond the reporting stage.

## STUDENT RECORDS AND PRIVACY RIGHTS

Rutgers, The State University of New Jersey, complies with the Family Educational Rights and Privacy Act of 1974 (FERPA) and makes public announcement of the law. FERPA was designed to protect the confidentiality of student records, guarantee student access to certain records, regulate disclosure of information from student files, provide opportunities for students to correct or amend records and add explanatory statements, and provide opportunities for students to file complaints with the U.S. Department of Education alleging infractions of the law.

The confidentiality of student educational records is protected by FERPA. However, the university is permitted to provide directory information without the student's consent unless he or she requests in writing that such information be kept confidential. Rutgers defines directory information as name, campus mailing address and telephone number, campus email address, permanent address and telephone number, school of attendance, major field of study, class

year, dates of attendance, current credit load, credit hours earned, degree(s) received, and date(s) of degree(s).

The most common ways by which the university releases student directory information are:

- through the verifications division of the Office of the Registrar or similar offices that have access to student records. (The office is called upon to verify that a student is enrolled at the university by potential employers and credit agencies, among others.)
- through the campus-wide information system known as INFO on the Rutgers University Computer Network (RUNet), which is accessible via the Internet.

Students may request that directory information be kept confidential by obtaining a form for this purpose from their dean's office or from the registrar's office. Students should be aware that requesting confidentiality of directory information makes this information unavailable to all, including prospective employers, credit agencies, and others to whom you may want this information known or verified. Thus, it is recommended that students carefully consider whether personal privacy concerns outweigh the possible inconvenience and detriments of having directory information withheld. Subsequent to filing the request, directory information remains confidential while a student is enrolled or until a written request that this restriction be lifted is received from the student by the registrar's office. As with all confidential records, Rutgers will release a student's confidential directory information only with the student's written consent or if otherwise required by law.

The university uses a student's social security number as a student identification number. While this number is not released as directory information and its confidentiality is protected in the same manner as are other educational records as defined by FERPA, the university offers students the opportunity to acquire a substitute student number. Students wishing to have a substitute number assigned should fill out the appropriate forms in the registrar's office. The university recommends that those receiving financial aid not acquire a substitute number because the social security number is key to student identification by state and federal financial aid agencies. Thus, it is recommended that a substitute number be obtained only if student privacy concerns outweigh the possibility of a serious disruption in financial aid.

Further information on the law and Rutgers' policy and procedures on compliance with FERPA is available from the director of compliance and student policy concerns in the Division of Student Affairs (732/932-7312).

## STUDENT RESIDENCY FOR TUITION PURPOSES

A determination of residency status for the purpose of tuition assessment is made by the university based on information provided by the applicant in accordance with the procedure outlined in the policy. A copy of the policy may be secured from the registrar's office or the admissions office.

### Procedure

#### *The Initial Determination*

At the time an individual initially applies for admission into any graduate or undergraduate college or division of the



university, the respective admissions office determines an admitted applicant's resident status for tuition assessment.

The determination made at this time shall prevail for each term unless a change is authorized as provided hereinafter.

#### ***After the Initial Determination***

The status of residency for tuition purposes of students continuing in a college or division of the university is determined by the registrar of the respective college or division. The determination made by the registrar either conforms to the initial determination of the admissions office or reflects a change as provided hereinafter.

#### ***Request for a Change of Status***

Requests for a change in residency status are accepted no later than the last week of the term for which changed status is sought. All supporting affidavits, deemed appropriate by the adjudicating official pursuant to New Jersey Administrative Code, Volume 9, Section 5 et seq., must be filed by the petitioner in accordance with the time limit specified in the preceding sentence, but in no case later than four weeks from the conclusion of the term for which the residency assessment is requested. Failure to comply with this provision, unless judged otherwise by the adjudicating official, voids the petition for the term in question. If, based on the information submitted in the request, the student qualifies for resident tuition assessment, such change relates only to the current and subsequent terms. No adjustments in tuition assessments are made and no refund vouchers are processed for any prior term.

#### ***Appeals***

Appeals from the initial determination and any determination made after a request by a student for a change in residency status are accepted no later than three months after the date of notification of any such determination. Unresolved appeals are forwarded to either the university director of graduate admissions or to the university registrar. These officers respond to the student within thirty working days of the receipt of the appeal in the appropriate office. Appeals from this determination should be submitted to the vice president for university budgeting by the student within two weeks after the director of admissions or the university registrar has issued a determination. The decision of the vice president for university budgeting will be final.

#### ***Students' Responsibilities***

Students are responsible for providing relevant information upon which a residency determination can be made. The burden of proving his or her residency status lies solely upon the student. Moreover, it is considered the obligation of the student to seek advice when in doubt regarding eligibility for in-state tuition assessment. If the student delays or neglects to question his or her eligibility status beyond the period specified above, the student forfeits his or her right to a residency assessment to which he or she might have been deemed to be eligible had he or she filed an appeal at the appropriate time.

#### ***Penalties***

If a student has obtained or seeks to obtain resident classification by deliberate concealment of facts or misrepresentation of facts or if he or she fails to come forward with notification upon becoming a nonresident, he or she is subject to disciplinary action.

## **RESEARCH POLICY AND RESEARCH CENTERS**

Research at the university, apart from that conducted by students in connection with their academic course work, is in general intended to lead to publication in some form so that its results are available to interested persons everywhere. The university does not accept grants from or enter into contracts with governmental agencies or any other sponsors for research projects of which the results may not be made publicly accessible; all university-conducted research must be available for public scrutiny and use.

Most research projects at the university are carried on by faculty members and students within the facilities offered by their own departments, but for on-campus research that cannot be conducted in department facilities, laboratories, or the library, the university has provided a number of cooperative research centers and bureaus. A list of the university's research centers may be found in the Divisions of the University chapter.

Many members of these organizations are active in graduate instruction. Information about their programs and activities may be found in *Research at Rutgers*, a handbook and bibliography published by the Research Council, the university agency that sponsors and coordinates faculty research.

## **PATENT POLICY**

All students are governed by the university's patent policy, which is described in a statement available in the Office of Research and Sponsored Programs and the offices of all deans and department chairpersons.

## **POLICY REGARDING SOLICITATIONS**

The university does not permit personal or mail solicitations or requests for contributions for charitable or other purposes, including the sale of chances, lottery tickets, and raffle tickets or the sale of magazines, Christmas cards, and similar items. Exceptions are made for the United Fund Drive and the Annual Hospitals Appeal.

The issuance or distribution of products or samples of products or leaflets or other printed materials and the posting of signs or advertisements in any building of the university requires the approval and permission of the vice president and treasurer or of the appropriate business manager.

## **EQUITY IN ATHLETICS DISCLOSURE ACT REPORTS**

In compliance with the Equity in Athletics Disclosure Act, Rutgers provides information on men's and women's athletic programs, and the participation rates for male and female athletes. The first report was issued in October 1996 with annual updates thereafter. The reports are available at the reference desks of the main branches of the university library system (Alexander Library, Library of Science and Medicine, Robeson Library, and Dana Library), and at the intercollegiate athletics offices.

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# Divisions of the University

## ACADEMIC DIVISIONS

Rutgers, The State University of New Jersey, provides educational and research services throughout the state on campuses located in Camden, Newark, and New Brunswick. The principal university center is located in New Brunswick, where Rutgers originated two centuries ago.

### **Camden**

Camden offers programs at three undergraduate colleges and at five graduate schools. With an enrollment of five thousand students, it offers exceptional educational opportunities in addition to providing the advantages and resources associated with a major state university.

#### **Faculty of Arts and Sciences–Camden**

Margaret Marsh, *Ph.D.*, *Dean*

Established in 1983 as a result of academic reorganization of the Camden campus, the Faculty of Arts and Sciences–Camden offers academic programs for undergraduate and graduate work in twenty-three arts and sciences disciplines and in a variety of interdisciplinary areas.

#### **School of Business–Camden**

Milton Leontiades, *Ph.D.*, *Dean*

Established in 1988, the School of Business–Camden sets major requirements and teaches all courses leading to the Bachelor of Science degree in the professional areas of accounting and management. The School of Business also sets the major requirements and teaches all courses leading to a Master of Business Administration degree.

#### **Camden College of Arts and Sciences**

Margaret Marsh, *Ph.D.*, *Dean*

A coeducational, liberal arts college, CCAS is the successor institution to the College of South Jersey, which was established in 1927 and became part of the state university in 1950.

#### **University College–Camden**

Margaret Marsh, *Ph.D.*, *Dean*

University College–Camden is an evening college of liberal arts and professional studies serving part-time students since 1950.

#### **Graduate School–Camden**

Margaret Marsh, *Ph.D.*, *Dean*

Graduate programs in the liberal arts were started in Camden in 1971 under the jurisdiction of the Graduate School–New Brunswick. The Graduate School–Camden was established as an autonomous unit in 1981.

#### **School of Law–Camden**

Rayman L. Solomon, *J.D.*, *Ph.D.*, *Dean*

Founded in 1926, the School of Law–Camden joined the university in 1950 as the South Jersey Division of the School of Law–Newark. It became an independent unit of the university in 1967. The law school offers a curriculum leading to the degree of Juris Doctor, including advanced study in special areas.

#### **Summer Session–Camden**

Thomas Venables, *Ed.D.*

The Summer Session, begun in 1913 and established as a division of the university in 1960, offers a wide variety of graduate and undergraduate courses during three sessions in the summer months.

### **Newark**

Newark offers programs at three undergraduate colleges and at four graduate schools. With an enrollment of approximately ten thousand students, it offers strong academic programs, excellent facilities, and an outstanding faculty.

#### **Faculty of Arts and Sciences–Newark**

Steven J. Diner, *Ph.D.*, *Dean*

The Faculty of Arts and Sciences–Newark was established in 1985 to expand and strengthen the instructional program for undergraduate students at the Newark campus. The combined faculties of Newark College of Arts and Sciences and University College–Newark offer courses and academic programs in more than sixty subject areas.

#### **Newark College of Arts and Sciences**

Steven J. Diner, *Ph.D.*, *Dean*

Founded in 1930 as Dana College, this undergraduate, coeducational, liberal arts college became part of Rutgers when the University of Newark was integrated into the state university in 1946.

#### **College of Nursing**

Hurdis Margaret Ann Griffith, *Ph.D.*, *Dean*

The College of Nursing was established in 1956 as an expansion of the university's offerings in the former School of Nursing of the Newark College of Arts and Sciences. Its graduate program is conducted through the Graduate School–Newark.

## **University College–Newark**

Steven J. Diner, *Ph.D.*, *Dean*

University College–Newark is an evening and weekend college of liberal arts and professional studies serving part-time students since 1934. Within the context of the liberal arts tradition, University College students are offered a full range of courses and curricula, including programs in business and preparation for the professions leading to the degrees of Bachelor of Arts and Bachelor of Science.

## **Faculty of Management**

Howard Tuckman, *Ph.D.*, *Dean*

Established in 1993, the Faculty of Management encompasses the Graduate School of Management and the School of Management. The School of Management is an upper-division undergraduate school, founded in 1993, that offers the Bachelor of Science degree jointly with either the Newark College of Arts and Sciences or University College–Newark. Degree programs are available in accounting, finance, management, and marketing. The Graduate School of Management, founded in 1929 as the Seth Boyden School of Business and incorporated into Rutgers in 1946, offers three programs. Two of these programs, management and professional accounting, lead to the Master of Business Administration degree. The third program offers the Ph.D. degree in management jointly with the Graduate School–Newark and the New Jersey Institute of Technology.

## **Graduate School–Newark**

Norman Samuels, *Ph.D.*, *Dean*

The Graduate School–Newark was established as a separate instructional division of the university with degree-granting authority in 1976.

## **School of Criminal Justice**

Leslie W. Kennedy, *Ph.D.*, *Dean*

The School of Criminal Justice, which opened in 1974, offers a graduate program that provides students with a sound foundation for work in teaching, research, or criminal justice management. The Master of Arts degree is offered through the school, and the Ph.D. degree is offered in conjunction with the Graduate School–Newark.

## **School of Law–Newark**

Eric Neisser, *J.D.*, *Acting Dean*

The university's graduate programs in law originated in other institutions. The New Jersey School of Law, founded in 1908, and the Mercer Beasley School of Law, founded in 1926, merged in 1936 to become the University of Newark School of Law, which became part of Rutgers in 1946.

## **Summer Session–Newark**

Hugo Kijne, *Ph.D.*

The Summer Session, begun in 1913 and established as a division of the university in 1960, offers a wide variety of graduate and undergraduate courses during three sessions in the summer months.

## **New Brunswick**

The New Brunswick campus is the largest and most diversified of the university's three campuses with sixteen academic units, eighteen hundred faculty, and thirty-three thousand students enrolled in undergraduate and graduate programs.

## **Faculty of Arts and Sciences–New Brunswick**

Richard F. Foley, *Ph.D.*, *Dean*

Established in 1981 as a result of academic reorganization of the New Brunswick campus, the Faculty of Arts and Sciences–New Brunswick teaches all arts and science courses for undergraduate and graduate students in degree-granting units and sets the major requirements for all arts and science majors. Organized into disciplines and departments, it offers forty-four undergraduate major programs and twenty-nine graduate programs, which are administered by the Graduate School–New Brunswick.

## **Douglass College**

Barbara Shailor, *Ph.D.*, *Dean*

Founded in 1918 as the New Jersey College for Women, Douglass is the largest women's college in the nation. While maintaining rigorous standards of instruction in the fundamental disciplines of the liberal arts, Douglass supports and develops programs which link major courses of study to future careers. The college also implements special programs as well as independent activities designed to help women students develop the qualities required for achievement in any field of endeavor.

## **Livingston College**

Arnold Hyndman, *Ph.D.*, *Dean*

Livingston College opened in 1969 as a coeducational institution dedicated to serving a diverse student body reflecting the racial, ethnic, and socioeconomic composition of today's society. As a college of the liberal arts and professions, Livingston is committed to a multidisciplinary program that brings together a diverse group of students, faculty, and staff in a cosmopolitan community dedicated to learning.

## **Rutgers College**

Carl Kirschner, *Ph.D.*, *Dean*

Rutgers College was chartered in 1766 and is the original nucleus around which the university developed. Formerly an undergraduate college for men, it is now coeducational. Dedicated to the promotion of excellence in undergraduate education, Rutgers College provides its students with clear guidelines in the pursuit of a liberal arts education.

## **University College–New Brunswick**

Emmet A. Dennis, *Ph.D.*, *Dean*

University College–New Brunswick is an evening college of liberal arts and professional studies serving part-time students since 1934. Within the context of the liberal arts tradition, University College–New Brunswick students are offered a full range of courses and curricula, including programs in business and preparation for the professions leading to the degrees of Bachelor of Arts and Bachelor of Science.



## **Cook College**

Bruce C. Carlton, *Ph.D.*, *Dean*

A coeducational and residential college, Cook offers undergraduate programs in various applied disciplines with emphasis on environmental, agricultural, food, and marine sciences. Formerly the College of Agriculture and later the College of Agriculture and Environmental Science, Cook College adopted its present name in 1973. Graduate programs are offered through the Graduate School–New Brunswick.

## **College of Engineering**

Michael T. Klein, *Ph.D.*, *Dean*

Instruction in engineering began at Rutgers in 1864, when New Jersey designated Rutgers College to be the State College for the Benefit of Agriculture and Mechanic Arts. The College of Engineering became a separate unit in 1914 and is dedicated to the sound technical and general education of the student. It offers a Bachelor of Science degree in even disciplines as well as a curriculum in applied sciences. Its graduate programs are conducted through the Graduate School–New Brunswick.

## **College of Pharmacy**

John L. Colaizzi, *Ph.D.*, *Dean*

First organized in 1892 and incorporated into the state university in 1927, the College of Pharmacy offers a five-year professional program leading to the Bachelor of Science degree and a graduate program leading to the Pharm.D. degree. Other graduate programs leading to advanced degrees through the Graduate School–New Brunswick are also available. In addition, the college sponsors an extension program for the benefit of practicing pharmacists throughout the state.

## **Mason Gross School of the Arts**

Marilyn Feller Somville, *Ph.D.*, *Dean*

This branch of Rutgers opened in July 1976. The school grants both undergraduate and graduate degrees. Formed to provide an education in the arts of the highest professional caliber, the school offers an M.F.A. degree in visual arts and theater arts; D.M.A., A.Dpl., M.M., and B.Mus. degrees in music; and a B.F.A. degree in visual arts, dance, and theater arts.

## **School of Business–New Brunswick**

Howard Tuckman, *Ph.D.*, *Dean*

Approved by the New Jersey Department of Higher Education in 1986, the School of Business–New Brunswick offers both undergraduate and graduate degrees. On the undergraduate level, it is a two-year, upper-division school offering programs in accounting, finance, management, and marketing. The school admits students from Douglass, Livingston, Rutgers, and University colleges in their junior year. The Bachelor of Science degree is jointly awarded by the School of Business–New Brunswick and the undergraduate college. The school's graduate program offers the Master of Accounting degree.

## **School of Communication, Information and Library Studies**

Gustav Friedrich, *Ph.D.*, *Dean*

This school was formed in 1982 by a merger of two schools to provide academic programs that focus on various facets of communication and information science. The school offers undergraduate programs of study in communication, and journalism and mass media. Students are admitted to the school in their junior year from the five residential undergraduate colleges in New Brunswick: Cook, Douglass, Livingston, Rutgers, and University colleges. Bachelor of Arts degrees are awarded jointly by the School of Communication, Information and Library Studies and the undergraduate college. At the graduate level, programs are offered that lead to the degree of Master of Library Service, the Master of Communication and Information Studies, and, jointly with the Graduate School–New Brunswick, to the Doctor of Philosophy degree. Courses for in-service librarians are also provided.

## **Edward J. Bloustein School of Planning and Public Policy**

James W. Hughes, *Ph.D.*, *Dean*

Founded in 1992, the Edward J. Bloustein School of Planning and Public Policy provides focus for all of Rutgers' programs of instruction, research, and service in planning and public policy. The school offers undergraduate programs in urban studies and public health, each leading to the baccalaureate degree. On the graduate level, the school confers Master of City and Regional Planning, Master of Public Health, and Doctor of Public Health degrees; the latter two degrees are offered jointly with the University of Medicine and Dentistry of New Jersey–Robert Wood Johnson Medical School. A dual-degree program in public health and applied psychology leading to the Master of Public Health and Doctor of Psychology degrees is offered with the Graduate School of Applied and Professional Psychology. Programs are also offered that lead to the Master of Science and Doctor of Philosophy degrees in urban planning and policy development; these latter two degrees are conferred by the Graduate School–New Brunswick.

## **School of Management and Labor Relations**

John F. Burton, *Ph.D.*, *Dean*

The School of Management and Labor Relations, formed in 1994, provides undergraduate instruction in labor studies. At the graduate level, programs are offered that lead to the degrees of Master of Science in Human Resource Management, Master of Arts in Labor and Industrial Relations, and Doctor of Philosophy in Industrial Relations and Human Resources.

## Graduate School–New Brunswick

Richard F. Foley, *Ph.D.*, *Dean*

Graduate programs in the arts and sciences have been offered since 1876. The Graduate School–New Brunswick awards advanced degrees in more than sixty disciplines and is responsible for all Doctor of Philosophy degrees at Rutgers–New Brunswick. The faculty is drawn from virtually all academic divisions of the university.

## Graduate School of Applied and Professional Psychology

Sandra L. Harris, *Ph.D.*, *Dean*

The GSAPP was established in 1974 to train direct-service psychologists who have a special commitment to community involvement. It offers the Doctor of Psychology (Psy.D.) degree in professional psychology with specializations in the areas of clinical psychology, school psychology, and organizational psychology. The GSAPP also awards the Master of Psychology (Psy.M.) degree *en passant* to the doctorate; the Psy.M. is not offered as a terminal degree.

## Graduate School of Education

Louise C. Wilkinson, *Ed.D.*, *Dean*

Courses in education were first offered by Rutgers College in the late nineteenth century. A separate school offering its own curricula was organized in 1924. The GSE offers programs leading to the degrees of Master of Education, Specialist in Education, and Doctor of Education.

## School of Social Work

Mary E. Davidson, *Ph.D.*, *Dean*

Established in 1954 to prepare students for professional social work practice, the SSW offers a two-year graduate curriculum leading to the Master of Social Work degree. Jointly with the Graduate School–New Brunswick, it offers a program leading to the Doctor of Philosophy degree, and its faculty also teaches an undergraduate social work program.

## Summer Session–New Brunswick

Thomas A. Kujawski, *Ed.M.*

The Summer Session, begun in 1913 and established as a division of the university in 1960, offers a wide variety of graduate and undergraduate courses during three sessions in the summer months.

## ACADEMIC CENTERS, BUREAUS, AND INSTITUTES

**Advanced Food Technology, Center for.** Food Science Building, Cook Campus

**Agricultural Experiment Station, New Jersey.** Martin Hall, Cook Campus

**Alcohol Studies, Center of.** Smithers Hall, Busch Campus

**American Affordable Housing Institute.** 33 Livingston Avenue, College Avenue Campus

**American Woman and Politics, Center for the.** Wood Lawn, Douglass Campus

**Animal Behavior, Institute of.** Smith Hall, Newark Campus

**Art Museum, Jane Voorhees Zimmerli.** College Avenue Campus

**Biological Research, Bureau of.** Nelson Biology Laboratories, Busch Campus

**Biostatistics, Institute for.** Hill Center, Busch Campus

**Biotechnology Center for Agriculture and the Environment.** Cook Campus

**Ceramic Research, Center for.** Engineering Building, Busch Campus

**Coastal and Environmental Studies, Center for.** Doolittle Hall, Busch Campus

**Computer Aids for Industrial Productivity, Center for.** Hill Center, Busch Campus

**Computer Science Research, Laboratory for.** Hill Center, Busch Campus

**Controlled Drug-Delivery Research Center.** Pharmacy Building, Busch Campus

**Crime Prevention Studies, Center for.** S.I. Newhouse Center for Law and Justice, Newark Campus

**Criminological Research, Institute for.** Lucy Stone Hall, Livingston Campus

**Critical Analysis of Contemporary Culture, Center for the.** 8 Bishop Place, College Avenue Campus

**Discrete Mathematics and Theoretical Computer Science, Center for.** Hill Center, Busch Campus

**Eagleton Institute of Politics.** Wood Lawn, Douglass Campus

**Economic Research, Bureau of.** New Jersey Hall, College Avenue Campus

**Edison Papers, Thomas A.** Van Dyck Hall, College Avenue Campus

**Employment Policy and Workforce Development, Center for.** Edward J. Bloustein School of Planning and Public Policy, 33 Livingston Avenue, College Avenue Campus

**Engineered Materials, Institute for.** Engineering Building, Busch Campus

**Engineering Research, Bureau of.** Engineering Building, Busch Campus

**Fiber Optic Materials Research Program.** Engineering Building, Busch Campus

**Fisheries and Aquaculture Technology Extension Center.** Martin Hall, Cook Campus

## UNIVERSITY LIBRARY SYSTEM

**Government Services, Center for.** Edward J. Bloustein School of Planning and Public Policy, 33 Livingston Avenue, College Avenue Campus

**Health, Health Care Policy, and Aging Research, Institute for.** 30 College Avenue, College Avenue Campus

**Historical Analysis, Center for.** 88 College Avenue, College Avenue Campus

**Human Evolutionary Studies, Center for.** 131 George Street, College Avenue Campus

**International Business Education, Center for.** Janice H. Levin Building, Livingston Campus

**International Conflict Resolution and Peace Studies, Center for.** Hickman Hall, Douglass Campus

**International Faculty and Student Services, Center for.** 180 College Avenue, College Avenue Campus

**Jazz Studies, Institute of.** Bradley Hall, Newark Campus

**Jewish Life, Center for the Study of.** 12 College Avenue, College Avenue Campus

**Journalism Resources Institute.** 185 College Avenue, College Avenue Campus

**Marine and Coastal Sciences, Institute of.** Martin Hall, Cook Campus

**Materials Synthesis, Center for.** Engineering Building, Busch Campus

**Mathematical Sciences Research, Center for.** Hill Center, Busch Campus

**Mathematics, Science, and Computer Education, Center for.** Science and Engineering Resource Center, Busch Campus

**Molecular and Behavioral Neuroscience, Center for.** Newark Campus

**Negotiation and Conflict Resolution, Center for.** Edward J. Bloustein School of Planning and Public Policy, 33 Livingston Avenue, College Avenue Campus

**Operations Research, Center for.** Hill Center, Busch Campus

**Packaging Engineering, Center for.** Engineering Building, Busch Campus

**Physics Research, Bureau of.** Serin Physics Laboratories, Busch Campus

**Rutgers Cooperative Extension.** Martin Hall, Cook Campus

**Surface Modification, Laboratory for.** Serin Physics Laboratories, Busch Campus

**Transportation Policy Institute.** Edward J. Bloustein School of Planning and Public Policy, 33 Livingston Avenue, College Avenue Campus

**Urban Policy Research, Center for.** 33 Livingston Avenue, College Avenue Campus

**Waksman Institute of Microbiology.** Hoes Lane, Busch Campus

**Walt Whitman Center for the Culture and Politics of Democracy.** Hickman Hall, Douglass Campus

**Wireless Information Network Laboratory.** Electrical Engineering Building, Busch Campus

**Women, Institute for Research on.** Voorhees Chapel, Douglass Campus

### Centers Operated Jointly

**Biotechnology and Medicine, Center for Advanced.**

**Environmental and Occupational Health Sciences Institute.**

**Hazardous Substance Management Research Center.**

**Alcohol Studies Library.** Smithers Hall, Busch Campus

**Annex.** Annex Building, Busch Campus

**Archibald Stevens Alexander Library.** 169 College Avenue, College Avenue Campus

**Art Library.** Hamilton Street, College Avenue Campus

**Bailey B. Pepper Entomology Library.** John B. Smith Hall, Georges Road and Jones Street, Cook Campus

**Blanche and Irving Laurie Music Library.** Douglass Library, Chapel Drive and George Street, Douglass Campus

**Chemistry Library.** Wright Chemistry Laboratory Building, Busch Campus

**Chrysler Herbarium Library.** Nelson Biology Laboratories, Busch Campus

**Criminal Justice Library.** S.I. Newhouse Center, 15 Washington Street, Newark Campus

**East Asian Library.** Alexander Library, College Avenue Campus

**Institute of Jazz Studies Library.** Bradley Hall, Newark Campus

**John Cotton Dana Library.** 185 University Avenue, Newark Campus

**Kilmer Area Library.** Avenue E, Livingston Campus

**Library of Science and Medicine.** Bevier Road, Busch Campus

**Mabel Smith Douglass Library.** Chapel Drive and George Street, Douglass Campus

**Mathematical Sciences Library.** Hill Center, Busch Campus

**Media Services.** Kilmer Area Library, Livingston Campus

**Paul Robeson Library.** 300 North Fourth Street, Camden Campus

**Physics Library.** Serin Physics Laboratories, Busch Campus

**School of Law–Camden Library.** Fifth and Penn Streets, Camden Campus

**School of Law–Newark Library.** S.I. Newhouse Center, Washington Street, Newark Campus

**School of Management and Labor Relations Library.** Ryders Lane, Cook Campus

**SERC Reading Room.** Science and Engineering Resource Center, Frelinghuysen Road, Busch Campus

**Special Collections and University Archives.** Alexander Library, College Avenue Campus

**Stephen and Lucy Chang Science Library.** Foran Hall, Cook Campus

# Index

*Note:* The following abbreviations are used in this index:

CN: College of Nursing  
FAS: Faculty of Arts and Sciences  
FOM: Faculty of Management  
NCAS: Newark College of Arts and Sciences  
NJIT: New Jersey Institute of Technology  
SOM: School of Management  
UC-N: University College-Newark

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