Welcome to the College of Staten Island, a senior college of The City University of New York. CSI is an institution with an unwavering commitment to providing a quality education that will give you the tools to cope, prevail and succeed; to change and enjoy. At CSI, your graduate education encompasses much more than a classroom and textbook experience. The serene, 204 acre, park-like setting nourishes the soul; our magnificent Sports and Recreation Center will strengthen your body as your mind and spirit are enhanced with culturally rich programs and events offered through our Center for the Arts.

The College of Staten Island offers more than a dozen graduate programs in the arts, sciences, technology and education. At the College, you will have the opportunity to study and work with an outstanding faculty, many of whom are intellectually renowned in their fields, on a state-of-the-art campus offering access to computer labs, excellent scientific facilities and modern communications. This combination of diverse degree programs, talented faculty and superior facilities affords to CSI students an array of perspectives on our world. The possibilities for exploration are limitless.

The College of Staten Island through its faculty, staff, students, alumni and friends is bound together by a common commitment to help prepare all of its students to meet the opportunities and challenges that lie ahead in today’s advanced technological and diverse society. Become confidently prepared to meet the future, fulfill your dreams and aspirations, explore your creativity and achieve success in your chosen career. In the spirit of partnership — for surely that is what a truly dynamic, interactive education is — I wish you a very successful graduate career at CSI — one filled with learning, diversity, excitement and promise.

Sincerely,

Marlene Springer
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## COLLEGE CALENDAR

### FALL 2001

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 27</td>
<td>Mon</td>
<td>First day of classes</td>
</tr>
<tr>
<td>Sep 1-2</td>
<td>Sat-Sun</td>
<td>No classes</td>
</tr>
<tr>
<td>Sep 3</td>
<td>Mon</td>
<td>College closed</td>
</tr>
<tr>
<td>Sep 17-19</td>
<td>Mon-Wed</td>
<td>No classes</td>
</tr>
<tr>
<td>Sep 26-27</td>
<td>Wed-Thurs</td>
<td>No classes</td>
</tr>
<tr>
<td>Oct 1</td>
<td>Mon</td>
<td>Last day to file for January 2002 graduation</td>
</tr>
<tr>
<td>Oct 8</td>
<td>Mon</td>
<td>College closed</td>
</tr>
<tr>
<td>Oct 9</td>
<td>Tues</td>
<td>Classes follow Mon schedule</td>
</tr>
<tr>
<td>Oct 24</td>
<td>Wed</td>
<td>Mid-term grades due</td>
</tr>
<tr>
<td>Nov 22-25</td>
<td>Thurs-Sun</td>
<td>College closed</td>
</tr>
<tr>
<td>Dec 14</td>
<td>Fri</td>
<td>Reading Day</td>
</tr>
<tr>
<td>Dec 16</td>
<td>Sun</td>
<td>Last day of classes</td>
</tr>
<tr>
<td>Dec 17-23</td>
<td>Mon-Sun</td>
<td>Final Examinations</td>
</tr>
<tr>
<td>Dec 24</td>
<td>Mon</td>
<td>College closed, Winter Recess begins</td>
</tr>
<tr>
<td>Dec 25</td>
<td>Tues</td>
<td>College closed</td>
</tr>
<tr>
<td>Dec 31</td>
<td>Mon</td>
<td>College closed</td>
</tr>
<tr>
<td>Jan 1</td>
<td>Tues</td>
<td>College closed</td>
</tr>
<tr>
<td>Jan 21</td>
<td>Mon</td>
<td>College closed</td>
</tr>
</tbody>
</table>

### SPRING 2002

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 29</td>
<td>Tues</td>
<td>First day of classes</td>
</tr>
<tr>
<td>Feb 12</td>
<td>Tues</td>
<td>College closed</td>
</tr>
<tr>
<td>Feb 18</td>
<td>Mon</td>
<td>College closed</td>
</tr>
<tr>
<td>Feb 20</td>
<td>Wed</td>
<td>Class follow Mon schedule</td>
</tr>
<tr>
<td>Mar 1</td>
<td>Fri</td>
<td>Last day to file for June 2002 graduation</td>
</tr>
<tr>
<td>Mar 21</td>
<td>Thurs</td>
<td>Mid-term grades due</td>
</tr>
<tr>
<td>Mar 25-31</td>
<td>Mon-Sun</td>
<td>No classes, Spring recess</td>
</tr>
<tr>
<td>May 1</td>
<td>Wed</td>
<td>Last day to file for August 2002 graduation</td>
</tr>
<tr>
<td>May 15</td>
<td>Wed</td>
<td>Last day of classes</td>
</tr>
<tr>
<td>May 16-17</td>
<td>Thurs-Fri</td>
<td>Reading days</td>
</tr>
<tr>
<td>May 18-24</td>
<td>Sat-Fri</td>
<td>Final Examinations</td>
</tr>
<tr>
<td>May 27</td>
<td>Mon</td>
<td>College closed</td>
</tr>
<tr>
<td>June 6</td>
<td>Thurs</td>
<td>Commencement</td>
</tr>
</tbody>
</table>
ABOUT THE COLLEGE

The College of Staten Island is a senior college of The City University of New York. The master’s degree is awarded in selected fields of study: Biology (M.S.); Cinema Studies (M.A.); Computer Science (M.S.); English (M.A.); Environmental Science (M.S.); History (M.A.); Liberal Studies (M.A.); Nursing, Adult Health (M.S.); Childhood (Elementary) Education (M.S.Ed.); Adolescence (Secondary) Education (M.S.Ed.); Special Education (M.S.Ed.); Physical Therapy (B.S./M.S.); and the Sixth-Year Professional Certificate is awarded in Education Supervision and Administration.

The doctoral program in Polymer Chemistry is offered jointly with the City University Graduate School and University Center and Brooklyn College; and the College participates in the City University doctoral programs in Biology (Neuroscience), Computer Science, Psychology (Learning Processes), and Physics.

The academic year follows a two-semester pattern, with a separate summer session. Classes are scheduled day, evening, and weekends.

The College of Staten Island of The City University of New York was founded in 1976 through the union of two existing colleges – Staten Island Community College and Richmond College. Staten Island Community College, the first community college in the University, opened in 1955. Richmond College, an upper-division college offering undergraduate and graduate degrees to students who had successfully completed the first two years of college study elsewhere, was founded in 1965. The merger of these two colleges resulted in the only public four-year institution of higher learning on Staten Island.

THE CAMPUS

Completed in 1994, the 204-acre campus of CSI/CUNY is the largest site for a college in New York City. Set in a park-like landscape, the campus is centrally located on the Island. Mature trees and woodlands, flowering trees and ornamental plantings, fields and outdoor athletic facilities, the great lawn, sculpture, and seating areas create a green oasis in an urban setting.

Fourteen renovated neo-Georgian buildings serve as classrooms, laboratories, and offices. The academic buildings house approximately 300 classrooms, laboratories and instructional spaces, study lounges, department and program offices, and faculty offices. The Library and Campus Center serve as focal points for the Academic Quadrangles with the Center for the Arts located midway between the Quadrangles at the fountain plaza. The Sports and Recreation Center and the athletic fields are located near the main entrance to the campus.

Sixteen works of art, a permanent collection of works either commissioned or purchased through the Art Acquisitions Program of the Dormitory Authority of the State of New York, are installed throughout the campus. Artists and the free-standing sculptures and reliefs are: Vincenzo Amato, Body of Hector/Glaucus, Miriam Bloom, Sboolfoo, Fritz Bultman, Garden at Nightfall (extended loan), Chryssa, Untitled, Lucille Friedland, Big Stride (gift of the artist), Red Grooms, Marathon, Sarah Haviland, Staten Island Arch, Jon Isherwood, Borromini’s Task, Zero Higashida, Maquette for a Small Universe, Valerie Jaudon, Untitled, Niki Ketchman, Red Inside, Win Knowlton, Ellipse, Mark Mennin, Torak, Don Porcaro, Moon Marker, Hans Van de Bovenkamp, Stele in the Wind, Daniel Wurtzel, Ark.

Astrophysical Observatory: The 16-foot dome astrophysical observatory was completed in 1996. In addition to serving students in astronomy courses, the facility is used for faculty and student research projects, environment monitoring projects, and community programs.

Biological Sciences/Chemical Sciences Building: An ultra modern facility, the building contains classrooms, laboratories, faculty offices, research facilities for faculty and students, the Center for Environmental Science, and the Center for Developmental Neuroscience and Developmental Disabilities.

Campus Center: The Campus Center incorporates facilities for a complete program of student activities and offices for student organizations; food services; health services; a study lounge; bookstore; and the studios of WSIA-FM, the student operated radio station.

Center for the Arts: Entered from the Great Lawn and from the Alumni Walk, the Center for the Arts houses two academic wings for programs in the arts as well as superb public spaces: the Clara and Arleigh B. Williamson Theatre, a 900-seat concert hall, a recital hall, an experimental theater, lecture halls, an art gallery, and a small conference center.

Library: Designed with inviting reading rooms, open shelves, and study carrels, its research and study facilities are enhanced by computer data-based operations available to all students. Library Media Services makes accessible pedagogical multimedia materials to distant classrooms and laboratories by means of the campus fiber-optic network.

Sports and Recreation Center: This 77,000 square-foot multi-purpose facility and surrounding athletic fields serve the intercollegiate and intramural sports and recreation program for students.

RESEARCH CENTERS

Academic centers at CSI devoted to research are the Center for Developmental Neuroscience and Developmental Disabilities and the Center for Environmental Science.

Center for Developmental Neuroscience and Developmental Disabilities
Dr. Ekkhart Trenkner, Director
Office: Biological Sciences/Chemical Sciences Building, room 320
The Center for Developmental Neuroscience and Developmental Disabilities (CDN) is supported jointly with the New York State Institute for Basic Research (IBR). The Center conducts, promotes, and sponsors research, education, and training in the developmental neurosciences with special emphasis on research and educational programs in the specific field of developmental disabilities. The Center provides for collaborative efforts between the College and IBR, as well as with the University’s doctoral programs in Biology, subprogram in Neuroscience
and Physiology, and in Psychology, subprogram in Learning Processes. On the CSI campus, the Center has established research laboratories for investigations in cellular and molecular neuroscience and provides advanced research training for graduate and undergraduate students.

Center for Environmental Science
Dr. Alfred M. Levine, Director
Office: Biological Sciences/Chemical Sciences Building, room 310
The Center for Environmental Science, established in 1987, provides support for research and policy recommendations concerning environmental problems. One of the major purposes of the Center is to define and solve environmental problems on Staten Island and its environs through research that includes studies of respiratory diseases, toxic and carcinogenic chemicals in the air, and the population at risk for lung cancer.

THE CITY UNIVERSITY OF NEW YORK
The City University of New York (CUNY), of which the College of Staten Island is a part, traces its beginning to 1847 and a public referendum that provided tuition-free higher education for residents of New York City. The municipal college system grew rapidly and its various colleges were consolidated as The City University of New York by an act of the New York State Legislature in 1961. CUNY is comprised of eleven senior colleges, six community colleges, a graduate school, a law school, and a medical school. It is the largest municipal college system and the third largest university in the nation.

THE BOARD OF TRUSTEES
The City University is governed by the Board of Trustees composed of 17 members, ten of whom are appointed by the Governor of New York, and five by the Mayor of New York City. The chairperson of the University Faculty Senate serves ex officio, without vote; the chairperson of the University Student Senate serves ex officio, with vote.

SPONSORSHIP AND ACCREDITATION
CSI is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, 215-662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Commission on Recognition of Postsecondary Accreditation. The M.A. in Liberal Studies is accredited by the Association of Graduate Liberal Studies Programs. The B.S./M.S. program in Physical Therapy is accredited by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association.

Copies of these accreditation documents as well as the respective accreditation documents for the various academic disciplines are available for review in the College library.
ADMISSIONS

Office of Recruitment and Admissions
North Administration Building (2A), room 404
Director: Ms. Mary Beth Reilly
Telephone: (718) 982-2010

Graduate Applications
Application booklets and information about the graduate programs may be obtained from the:
- Office of Recruitment and Admissions
- College of Staten Island / CUNY
- North Administration Building (2A), room 404
- 2800 Victory Boulevard
- Staten Island, New York 10314
- Telephone: (718) 982-2010
- email: recruitment@postbox.csi.cuny.edu
- www.csi.cuny.edu

Academic Requirements for Graduate Programs
Applicants for graduate study should have a bachelor’s degree or its equivalent from an accredited institution of higher education. In addition, applicants are expected to meet the specific requirements of the graduate program to which they are applying. Some programs may require scores on the Graduate Record Examinations (GRE).

A TOEFL score of 550 or higher is required for all students for whom English is a second language.

Applications are evaluated after all official transcripts and supporting documents have been received and applicants are notified by mail regarding their acceptance.

Please see the section on the particular graduate program for specific requirements.

Non-Matriculated Status
A student who does not fully qualify for matriculation may be admitted as a non-matriculated student. No more than 12 credits may be taken as a non-matriculated student unless the student already holds a master’s degree. Acceptance as a non-matriculated student in no way commits the College to grant matriculation at a later date.

Non-matriculated students who are completing undergraduate coursework to qualify for admission must maintain a minimum GPA of 3.0 to be considered for matriculation.

Doctoral Programs
Application to the doctoral programs in Biology (Neuroscience), Computer Science, Physics, Polymer Chemistry, and Psychology (Learning Processes) are made directly to the Graduate School and University Center/CUNY, 365 Fifth Avenue, New York, New York 10016, (212) 817-7470; email: admissions@gc.cuny.edu; www.gc.cuny.edu.

Readmission
Graduate students who do not register for a semester and then decide to return in a subsequent semester, and who have not maintained their matriculated status, must apply for readmission at least 30 days before registration. Requirements for programs may change and students applying for readmission must meet current requirements. (See fee schedule.)

Veterans
The veterans advisement service is supervised by the Registrar. Assistance is available in interpreting regulations and policies of the Veterans Administration, and educational and financial counseling is offered. The office of the veterans adviser is in the North Administration Building (2A), room 110.

Immunization Requirement
New York State Public Health Law requires immunization against measles, mumps, and rubella for some students. All students born on or after January 1, 1957, who are enrolling for six or more equated credits must have proof of immunization on file at the College Health Center, Campus Center, room 112, one week prior to registration. Transfer students must request that their health records be transferred to CSI. Information and the immunization forms are available at the Health Center and the Registrar’s Office, and in the Schedule of Classes.
Tuition and Fees

Office of the Bursar
North Administration Building (2A), room 105
Bursar: Dr. Cornell C. Frank
All tuition and fees listed in this Catalog and in any registration material issued by the College are subject to change by action of the Board of Trustees without prior notice.

Graduate Tuition for Master's Degree Programs

New York State Residents

<table>
<thead>
<tr>
<th>part time</th>
<th>full time</th>
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<tbody>
<tr>
<td>per equated credit</td>
<td>per semester</td>
</tr>
<tr>
<td>$185.00 *</td>
<td>$2175.00</td>
</tr>
<tr>
<td>* Plus $65 per excess contact hour</td>
<td></td>
</tr>
</tbody>
</table>

Non-State Residents (including foreign students)

<table>
<thead>
<tr>
<th>part time</th>
<th>full time</th>
</tr>
</thead>
<tbody>
<tr>
<td>per equated credit</td>
<td>per semester</td>
</tr>
<tr>
<td>$320.00 *</td>
<td>$3800.00</td>
</tr>
<tr>
<td>* Plus $85 per excess contact hour</td>
<td></td>
</tr>
</tbody>
</table>

Graduate students who register in an undergraduate course as part of their program, and are receiving graduate credit for the course, will be charged at applicable graduate rates according to residency. Charges to be included are not to exceed the stipulated maximum semester rate for the applicable graduate tuition. Graduate students taking an undergraduate course as non-degree students, and receiving undergraduate credit, pay applicable undergraduate tuition.

Student Status

Graduate students are considered part time if registered for 11 equated credits or less, and full time if registered for 12 or more equated credits.

Place of Residence

Students are eligible for the tuition rate for residents of New York State if they meet the following requirements for resident status: are 18 years of age or older; are United States citizens or aliens with permanent resident status; have maintained their principal place of abode in New York State for a period of 12 consecutive months immediately preceding the first day of classes for the semester under consideration, and state their intention to live permanently and maintain their principal place of abode in New York State. The residence of a person under the age of 18 is that of his/her parents unless the person is an emancipated minor (one whose parents have intentionally and voluntarily renounced all the legal duties and surrendered all the legal rights of their position as parents). Students currently classified as nonresidents, who wish to apply for resident status, must present proof that the above conditions have been met to the Office of Admissions or the Office of the Registrar.

Maintenance of Matriculation Fee

Graduate students who are not registered in a given semester must pay a maintenance of matriculation fee of $250 for New York residents or $403 for non-residents a semester if they wish to maintain their matriculated status. If the fee is not paid, the student will be considered to have withdrawn and must apply for readmission.

Non-instructional Fees

The Student Activity Fee is billed to all students at the following rate:

<table>
<thead>
<tr>
<th>full time</th>
<th>part time</th>
</tr>
</thead>
<tbody>
<tr>
<td>$74.00</td>
<td>$48.00</td>
</tr>
</tbody>
</table>

Fees include a $4.00 contribution to New York Public Interest Research Group (refundable through NYPIRG office) and an 85 cent University Student Government fee. Non-instructional fees are nonrefundable.

Miscellaneous Fees and Charges

Consolidated Service Fee $5 (all students pay this fee)

| Application | $40 |
| Readmission | $10 |
| Late registration | $15 |
| Reinstatement | $15 |
| Program change | $10 |
| Payment reprocessing | $15 |
| Special examination | $15 |
| each additional | $5 |
| Transcript | $4 each |
| Duplicate diploma | $15 |
| Duplicate I.D. card | $5 |
| Duplicate bill | $5 |
| Thesis binding | $15 |

Notes:

When students withdraw from courses, their tuition is not refunded. The student is responsible for fees, materials, and services for the semester for which he/she registered, even though he/she may withdraw from courses. Students are responsible for any fees and charges which are due at the time of withdrawal.

Materials Charges

Special materials charges of $10 or more are required in some courses. Details may be found in each semester's Schedule of Classes. Materials charges are not refundable.

Library Fines

Overdue books: general circulation: 10 cents per day, including days on which the Library is closed, to a maximum of the current price of the item.

Reserve items: $1.20 per overdue hour to a maximum of the current price of the item.

Damaged books: borrower must pay any overdue fines up to and including the date the item is reported as being damaged, plus an amount to be determined by the nature and extent of the damage, not to exceed the current price of the item, plus a processing charge of $10.

Lost items: borrower must pay a $10 processing charge in addition to the current price of the item.
Payment
A student is not registered until all financial obligations to the College have been satisfied. Before registration can be completed, students must have paid in full unless the student (a) has been awarded financial aid sufficient to cover tuition and fees, (b) is enrolled in a University Payment Plan, (c) is eligible for tuition waiver, or (d) is in a special registration status, e.g., veteran.

The registration dates are printed in the Schedule of Classes for each semester. During the registration process, a student’s bill is prepared with payment/validation due date indicated. Students registering late will be given a bill at the time of registration and are expected to pay their bill within three or fewer days. If a student’s bill is not paid and a student is not covered by one of the above categories the registration will be canceled. A student who has not fulfilled all financial obligations to the College will be barred from obtaining any transcripts or from registering for the next semester.

Refunds
When courses are canceled by the College a full refund of appropriate tuition and fees will be made. In cases of student initiated withdrawal, the date on which the withdrawal application is received by the Registrar, not the last date of attendance, is considered the official date of withdrawal for the purpose of computing refunds.

Withdrawal from a course before the beginning of classes allows a 100 percent refund of tuition only; withdrawal in order to register at another unit of City University during the same semester allows a 100 percent refund. The withdrawal application form is available from the Registrar. Withdrawals for medical reasons require documentation. Nonattendance of class or informing the instructor of intent to withdraw does not constitute an official withdrawal. The Schedule of Classes contains information about withdrawing from a course and the schedule for refunds.

Students should be aware that withdrawal or failure to complete a course effects their financial aid obligations. Questions about financial aid obligations should be referred to the Office of Financial Aid. If a portion of tuition charges have been paid with federal financial aid funds, that portion of any tuition refund is returned to the appropriate financial aid program. Details on the allowable refunds are printed in the Schedule of Classes.

Return of Title IV Funds
Title IV funds (Pell, SEOG, Direct and Perkins loans) to recipients who are withdrawn from all courses, officially or unofficially, are subject to recalculation to determine earned Federal Financial Aid. This calculation may result in a requirement of payment toward tuition and fees, which previously was determined to have been satisfied.
FINANCIAL AID

Office of Student Financial Aid
North Administration Building (2A), room 104
Director: Mr. H. Sherman Whipkey
Telephone (718) 982-2030

Application Procedures and Deadlines

Forms
Two application forms for financial aid are required by the College of Staten Island of The City University of New York (CUNY):
Free Application for Federal Student Aid (FAFSA) is the application for federal aid;
TAP/APTS Application and CUNY Supplement is the application for New York State Aid.

The FAFSA requires a college identification number: the number for CSI is 002698, and it must be included on the form. The FAFSA form is available at the Office of Student Financial Aid; from wall racks outside the service desk at room 104, North Administration Building (2A); by calling (718) 982-2030; or by application over the Web, www.fafsa.ed.gov.

The TAP/APTS Application and CUNY Supplement is mailed to the applicant by the University after receiving a student's FAFSA data. The NYSHEC (TAP) college identification number for CSI is 1417.

Students planning to attend the Summer or Fall terms should file by the Priority Deadline of March 31. Students planning to attend in the Spring semester, whether first time students or returning after an absence of one or more semesters should file by the Priority Deadline of November 30.

Student Service Center
CSI provides a Student Service Center where prospective and current students may schedule an appointment to use the computers to file the FAFSA on the Web. To make an appointment, call (718) 982-2601. The Student Service Center is located in North Administration Building (2A), room 107.

Transfer Students
Students transferring to CSI for a Spring term should call the Federal Student Aid Information Center at 1-800-433-3243 and have a duplicate Student Aid Report sent to CSI. The Federal Code for CSI is 002698. In addition, transfer students should request a TAP Change Form from the current college or from the CSI Student Financial Aid Office, complete it, and send it to the address provided using the CSI NYHESC code 1417. This process should be completed by the Priority Deadline of November 30. Transfer students for the Summer or Fall terms should follow the above instructions and complete the process by the Priority Deadline of March 31.

Eligibility for Federal Financial Aid
To be eligible for any of the Federal financial aid programs, a student must:

1. be a U.S. citizen, or
2. be an eligible non-citizen, and
3. be matriculated, and
4. take at least six credits a semester, and
5. not be in default of a Federal Loan (Perkins, Stafford or Direct Loan) or have completed the required process to obtain “Renewed Eligibility”; and
6. not owe a refund on any Title IV Grant, and
7. be making satisfactory progress towards a graduate degree.

Students who withdraw from all classes, either officially or unofficially, will have their attendance records reviewed to determine if the federal aid disbursed to them exceeds the amount they were entitled to. Overpayments will be billed to the student. Failure to repay these overpayments within 30 days will result in the College withholding all academic privileges, and the overpayment will be reported to the National Student Loan Data System (NSLDS). This system will withhold all future federal aid until the overpayment is resolved.

Changes in tax laws now require that students report some grants, scholarships, and fellowships to the Internal Revenue Service as taxable income. Recipients of funds from these sources are strongly urged to consult their tax advisers or the Internal Revenue Service to determine the impact on their personal tax circumstances. In addition, all students are urged to maintain accurate records of financial aid received and receipts for expenses related to attendance at college, such as books, supplies, tuition, and fees.

Federal Satisfactory Academic Progress
Students will be measured against the Federal Satisfactory Academic Progress standard at the end of the Spring term to determine eligibility for receipt of Title IV student financial assistance for the upcoming year.

Appeals
Graduate students who fall below Federal Satisfactory Academic Progress guidelines may appeal through the Registrar’s Office to retain eligibility for receipt of Title IV federal student assistance.

Federal Work-Study Program
This program provides on- and off-campus employment opportunities for eligible students. At the time this catalogue was written, on-campus wage rates were $8.00 per hour for graduate students. Work schedules are developed around a student’s class schedule and the average work schedule consists of ten hours per week.

Federal Perkins Loan Program
This is a loan program and funds received under this program must be repaid. All students receiving a Federal Perkins Loan must attend a Federal Perkins pre-loan conference and take and pass the CUNY Default Reduction Test before the first disbursement of the loan proceeds each year. No Federal Perkins Loans will be disbursed to students who do not comply. Students are required to disclose their
driver’s license number when applying for a Federal Perkins Loan and must provide, in writing, changes of address to the Office of Student Financial Assistance within ten days of the change. Federal Perkins Loan borrowers must report to the Office of Student Financial Aid and request an Exit Interview eight weeks prior to graduation, if they plan to transfer to another institution, leave the college for any reason, or continue their education as a less than half-time student (less than six credits). Students should be aware that federal regulations require the University to report the disbursement/default of a Federal Perkins Loan to credit bureaus. Deferments and cancellations are available on these loans in certain circumstances and are discussed in detail in the Exit Interview. Federal Perkins Loans are awarded to students by the University. If a student defaults on a loan, all future college services will be withheld.

**Federal Direct Loan Programs**

The elements listed below are common to all the Federal Direct Loan programs unless otherwise noted:

1. The application may be obtained from the Student Financial Aid Office or from the CSI Web Site at www.csi.cuny.edu/finaid or at a Federal Direct pre-loan session, for first-time borrowers.
2. Promissory Notes must be completed, signed, and returned to the processor before any loan funds are credited toward tuition or disbursed to the borrower.
3. All Direct Loans must be repaid.
4. For the first loan at CSI, a pre-loan interview is required; this can be done on the Web accessible through the College Web Site mentioned in #1. Entrance interviews are offered at College workshops every Tuesday at 10:00 AM, Wednesday at 2:00 PM and Thursday at 6:30 PM in the North Administration building (2A), room 406.
5. Prior to graduation, transferring to another college, leaving this College for any reason, or taking fewer than six credits a term, student recipients of Federal Direct Loans must request an Exit Interview.
6. Changes in address should be reported immediately to the Financial Aid Office and the Federal Direct Loan Service Center.
7. If the College is notified that a student has defaulted on a loan, all college services will be withheld.

**Federal Direct Subsidized Loans**

FAFSA data must be received before a Federal Direct Loan can be processed. Graduate students may borrow up to $18,500 annually if the College budget permits. The aggregate graduate Federal Direct Loan limit is $138,500 which includes undergraduate borrowing.

**New York State Aid - Tuition Assistance Program (TAP)**

To apply, complete the Free Application for Federal Student Aid (FAFSA) and the TAP/APTS Application and CUNY Supplement, which will be mailed to applicants once the FAFSA data has been received by the University. The TAP eligibility criteria are:

1. be a New York State resident for a year, and
2. be a U.S. citizen or permanent resident alien or paroled refugee, and
3. be a full-time matriculated student, and
4. enroll for at least 12 credits which meet the requirements of the curriculum in which the student is currently matriculated and
5. meet the TAP Progress and Pursuit guidelines, and
6. not be in default on a Federal Loan or if in default, have completed the required process to obtain “Renewed Eligibility,” and
7. be economically eligible based on current New York State criteria.

**Scholarships**

A limited number of scholarships are available for full-time graduate students in recognition of academic excellence and community/college service. Designated scholarships are awarded for study in a variety of fields. Information and applications are available at the Office of the Vice President for Student Affairs, South Administration Building (1A), room 301, telephone (718) 982-2336.
ACADEMIC POLICIES AND PROCEDURES

Advisement
Upon acceptance to the College of Staten Island, graduate students are assigned an academic adviser. Before registration each semester students must meet with their advisers to plan their programs.

Registration
Students must register each semester. Registration materials are sent by the Office of the Registrar prior to registration to all current, readmitted, and newly admitted students. Registration is not complete until all financial obligations have been satisfied. Programs may be changed and courses dropped or added until the end of the first week of classes. A detailed set of instructions for registration is published each semester in the Schedule of Classes. Students who do not register each semester must maintain their matriculation or apply for readmission (see section under Admissions).

Full-Time Classification
Graduate students are classified as full time if they are taking 12 or more credits. Graduate students are also eligible for "Certified Full Time" status from the Registrar even though not enrolled in 12 credits of course work if they are engaged in such activities as individual research on a degree-related project, teaching in the College, serving as a research assistant, or doing thesis research. Such certification must be in writing from the graduate program coordinator and must define the activity in terms of credit hours.

Attendance Policies
Instructors are required to keep an official record of class attendance. Students are expected to attend all sessions. A student who is absent in excess of 15 percent of the class hours in one semester is assigned a grade of WU (withdrew unofficially), subject to the discretion of the instructor.

Graduate Program Policies
The following academic policies apply to all of the graduate degree programs in the College. Please refer to the program description for any specific policies.

1. Transfer Credits. Graduate courses taken within the last five years at an accredited college or university may be accepted at the discretion of the coordinator of the graduate program. A maximum of 12 graduate credits in graduate courses, with a minimum grade of 3.0 (B) in each course, may be applied toward a graduate degree from the College of Staten Island. For specific requirements, please see the program description.

2. Undergraduate Courses. Graduate students may not enroll in undergraduate courses for graduate credit. Graduate students may, however, enroll in undergraduate courses in order to remedy deficiencies in their preparation for graduate study. Such courses will not be credited toward the requirements of the graduate degree. Non-matriculated students who are completing undergraduate coursework to qualify for matriculated status must maintain a minimum GPA of 3.0 in order to be considered for matriculation. (See also specific requirements for remedying deficiencies in the description of the degree program.)

3. Credits as a Non-Matriculated Student. Not more than 12 credits of graduate courses may be taken as a non-matriculated student, unless the student already holds another master’s degree.

4. Independent Study. Graduate students may take a maximum of two independent study courses. Approval of the graduate program coordinator and the Dean of the Division is required.

5. Five-Year Time Limit. All credits for a graduate degree must be completed within five years. Extensions may be granted only with the written permission of the program coordinator.

6. Grade Point Average for Retention. Students must have a minimum grade point average (GPA) of 3.0 (B) to be retained in a graduate program. Students whose GPA falls below 3.0 are on probationary status. While they are on probationary status, their registration forms must be signed by the coordinator of their program and they may enroll in no more than one course per semester. Students may raise their GPA only through enrollment in graduate courses approved by their program coordinator.

A student may remain on probation for a maximum of three semesters: if, after taking three courses while on probation, the student’s GPA remains below 3.0, the student is automatically dropped from the graduate program.

7. Grade Point Average for Graduation. Students must have a minimum GPA of 3.0 (B) in graduate-level courses in their program to graduate.

8. Grade Appeals. Students wishing to appeal a grade other than WU (withdrew unofficially) or FIN (F from incomplete) must do so within sixty school days, excepting summer session, following the end of the semester. Appeals must be submitted in writing to the chairperson of the department in which the course was offered. Upon receipt of the appeal, the chairperson shall direct the student to discuss the issue with the instructor who assigned the grade. If the issue remains unresolved, the student may request a review by the Department Committee on Grade Appeals, composed of three faculty members. The committee shall review all information presented by the student and the instructor and render a decision within 30 days of the student's request. If the committee upholds the appeal by a vote of 3-0, the chairperson shall change the grade to reflect the decision of the committee. If the committee does not uphold the student, there is no further appeal within the College.

In all deliberations on grade appeals, the burden shall be on the student to prove that a violation of the College’s regulations occurred or that the instructor’s own stated criteria for grading, which shall have been enunciated at the beginning of the semester, have not been followed. Students needing advice on the procedure may consult a counselor.

Students wishing to appeal a WU or a FIN grade must file a written petition supported by documentation to the Committee on Course and Standing.
9. **Academic Dismissal**. Students whose academic performance falls below the minimum requirements may be dismissed from the College upon review by the Committee on Course and Standing.

10. **Graduation**. Students who believe they will have fulfilled the degree requirements must file for graduation by the date specified in the College calendar in the Schedule of Classes. There is no fee for this application. Application cards for graduation may be obtained at the Registrar’s Office.

**Grading Symbols and GPA equivalents**

Grading symbols used are: A (4.0), A- (3.7), B+ (3.3), B (3.0), B- (2.7), C+ (2.3), C (2.0), F (0), INC (incomplete), FIN (failure due to incomplete), W (withdrew), WA (administrative withdrawal), WU (withdraw unofficially), and PEN (for thesis courses).

- **F** Graduate courses in which a student has received an F grade may be repeated, however, the grade of F will continue to be calculated in determining the GPA. Students should refer to the requirements of the program for any specific policy regarding F grades.

- **INC** The grade INC is a temporary grade assigned when, in the instructor’s judgment, course requirements are not completed for valid reasons. Recipients of INC are required to complete all assignments before the end of classes during the succeeding semester. Students should not register a second time for a course in which an INC is given. Rather, arrangements should be made with the instructor to complete the remaining work. If a student registers again for a course in which an INC was awarded, the INC will become a FIN and the course will appear a second time on the student’s transcript with the grade earned.

- **FIN** If a grade of INC is not changed before the last day of classes of the succeeding semester, it will automatically be changed to a grade of FIN. If the required work is not completed for continuing valid reasons, the course instructor may grant an extension. Such extensions shall not exceed a period of more than two years beyond the original due date of the uncompleted work.

- **W** Students may withdraw without academic penalty from any course up to the end of the eighth week of the semester (see College calendar for deadline to withdraw). Students may withdraw from a course without academic penalty between the eighth and tenth week only with the consent of their faculty adviser or a counselor. Under no circumstances will a W be assigned after ten weeks without positive action by the Committee on Course and Standing or its designee. Consult the Office of the Registrar for the procedures to be followed when withdrawing from a course. If these procedures are not followed, students may receive a penalty grade (WU). In cases of illness, students may apply to the Medical Office for a medical withdrawal.

- **WA** Students not in compliance with the New York State immunization requirement receive the grade of WA. This grade carries no academic penalty.

- **WU** An unofficial withdrawal results in a grade of WU. No credit is received for a course in which this grade is assigned; it is equivalent to a grade of F.

**Committee on Course and Standing**

The Committee on Course and Standing reviews student records and considers student appeals related to admission, readmission, and graduation. Students can petition the Committee through a counselor in the Division of Student Affairs.

**The “Grandfather” Clause**

Requirements in this Catalog were approved effective September 1, 2001. The “Grandfather” clause is designed for students who matriculated in a program prior to that date. This provides that students may meet degree requirements in effect the year of their matriculation in a particular program, provided also that they have maintained continuous enrollment in that program. Students not in continuous enrollment are subject to any new requirements in effect the year of readmission.

**Transcripts and Grade Reports**

Grade reports are issued at the end of each semester, and transcripts are sent to each student in July. Students may request that their transcript be sent to other institutions (see Fee Schedule). Official transcripts are signed and sealed by the Registrar.

**Academic Integrity**

Integrity is fundamental to the academic enterprise. It is violated by such acts as borrowing or purchasing term papers, essays, reports, and other written assignments; using concealed notes or crib sheets during examinations; copying the work of others and submitting it as one’s own; and misappropriating the knowledge of others. The sources from which one derives one’s idea, statements, terms, and data must be fully and specifically acknowledged in the appropriate form; failure to do so, intentionally or unintentionally, constitutes plagiarism. Violations of academic integrity may result in failure of a course and in disciplinary actions with penalties such as suspension or dismissal from the College.

**Academic Freedom**

The City University of New York subscribes to the American Association of University Professors 1940 Statement of Principles on Academic Freedom, and the College of Staten Island respects academic freedom for faculty and students as well as freedom in their personal lives for all individuals in the campus community.

**Computer User Responsibilities**

The computer resources of The City University of New York and the College of Staten Island must be used in a manner that is consistent with the University’s educational purposes and environment. All users of computer resources are expected to act in a spirit of mutual respect and cooperation, and to adhere to the regulations for their use (see undergraduate catalog, appendix ii). The University reserves the right to monitor, under appropriate conditions, all data contained in the system to protect the integrity of the system and to ensure compliance with regulations.

**I.D. Cards**

A validated I.D. card, issued by Campus Security, must be carried by a student on campus at all times.
ACADEMIC SERVICES/STUDENT SERVICES

Campus Center - Office: Campus Center, room 107.
The Campus Center is the focal point of extra and co-curricular student life for undergraduate and graduate students. The Center houses the Office of Student Life and offices for Student Activities and Student Government. Services offered in the Campus Center include the bookstore, cafeteria, Park Cafe, and College Health Center. Lounges for entertainment and studying, a computer lab, game rooms, conference and meeting rooms, and lockers are available for student use. WSIA-FM broadcasts from the Campus Center.

Center for the Arts - Office: Center for the Arts, room 116
The Center for the Arts contains, in the instructional wing, the Department of Performing and Creative Arts, studios, performance and rehearsal spaces, a screening room, a recital hall, a studio theater, film and video production facilities, and laboratories for communications and graphics. The workshops include facilities for print making, painting, sculpture, photography, electronic music, and recording. The Center houses the Clara and Arleigh B. Williamson Theatre, a 442-seat, proscenium-stage theater; a 911-seat Concert Hall; a recital hall and a lecture hall; and an art gallery.

Center for International Service - Office: North Administration Building (2A), room 206
The Center for International Service encourages and supports the international component of the academic life of the College. The Center provides direction and assistance in matters affecting the College’s international student population; sponsors study abroad programs; directs scholar and student exchange programs; administers the English Language Institute; and facilitates international development programs. Guidance for the Center’s activities is provided by a faculty advisory committee.

Disability Services - Office: Center for the Arts, room 101
The office has responsibility for providing services for students with a documented disability. All documentation is kept confidential and should be submitted directly to the Office of Disability Services. Services include pre-admissions counseling and accessibility information, advisement, priority registration, and testing accommodations. Software for tutorial programs, personal computers, scientific calculators, tape recorders, and a Braille writer are available. The Resource Center for the Deaf serves the specific needs of deaf and hearing impaired students by providing interpreters, tutors, and notetakers. The College’s policy for students with disabilities conforms to federal guidelines and the office offers services mandated by federal and state law. All students with disabilities are encouraged to use the services of the office. Services are available also to students who are temporarily disabled.

Evening, Summer, and Weekend Sessions - Office: North Administration Building (2A), room 204
A wide choice of courses have regularly scheduled evening, summer, and weekend classes as integral components of the College’s offerings.

Degrees in more than 20 disciplines may be earned by attending evening and weekend classes. Courses are scheduled to accommodate matriculated students in graduate, baccalaureate, and associate’s degree programs who can attend only in the evening or on weekends, as well as those students whose classes are mainly on weekdays.

The Summer Session offers undergraduate and graduate courses in a mix of schedules: four-week courses meet day and evening Monday through Thursday in June and July; six-week courses meet Saturday and Sunday mornings during June and July; eight-week courses meet day and evening Monday/Wednesday or Tuesday/Thursday during June and July.

Matriculated and non-matriculated students may register for one or more courses in the evening, summer, and weekend sessions.

Health Services - Office: Campus Center, room 112
The College Health Center is staffed by a part-time nurse practitioner (funded by the student activity fee) in collaboration with Staten Island University Hospital and College personnel. A Nurse Practitioner and a full-time Registered Nurse are available for emergency care, consultations, immunizations, HIV/AIDS counseling and testing, and other services. The telephone is (718) 982-3045.

Laboratories
The Biological Sciences/Chemical Sciences Building (6S), home of the Department of Biology, the Department of Chemistry, the Center for Environmental Science, and the Center for Developmental Neurosciences and Developmental Disabilities, contains 74 state-of-the-art laboratories for study and research. The ten departmental buildings in the academic quadrangles house instructional, tutorial, and research laboratories, and personal computer classrooms.

Library/Media Services - Office: Library, room 109
Chief Librarian, Professor James Marcum
The Library is the focal point of the South Academic Quadrangle. The building, with its distinctive rotunda, is designed to house 300,000 volumes, computer facilities for database searching, periodical subscriptions, and Media Services. The general reference center is located on the first floor. The archives, the microform collections, and the periodicals reference center are located on the second floor. The circulating book collections and the print journal holdings are housed on the top floor. Areas for individual and small group study spaces are being developed on the second and third floors.

Hours of Service:
Monday – Thursday 8:00 a.m. – 10:00 p.m.
Friday 8:00 a.m. – 8:00 p.m.
Saturday 8:30 a.m. – 5:00 p.m.
Sunday 12:00 noon – 5:00 p.m.

Hours during summer session, intersession, and holidays are posted at the Library entrance and on the Library homepage, www.library.csi.cuny.edu. Normal hours of operation may be subject to change.
Borrowing Privileges: Students and faculty must present current ID cards in order to borrow books that circulate. ID cards are obtained from the College Office of Public Safety. Overdue books, lost books, or unpaid fines may result in the suspension of borrowing privileges.

The Collection: The collection totals 208,000 bound volumes of books, 1,400 current print journal subscriptions, 10,000 full text journals online, 800,000 titles in microform, 2,000 videos and films, and over 4,000 sound recordings.

The Online Catalog: The CSI Library is a member of the CUNY-wide integrated library system. Access to CUNY+, the online union catalog portion of the system, is located on workstations throughout the library. CUNY+ is also known as CUNY+WEB and is available from remote locations via the Library homepage.

Reference librarians are on duty at the General Reference Desk on the first floor at all times when the library is open to assist with traditional sources of information and with computerized databases. Students and faculty have free access to ERIC and other databases on CD-ROM or via the Internet. The library instruction component of reference includes orientation tours, the compilation of bibliographic aids, and lectures by reference specialists in connection with specific course assignments.

Media Services - Library, room 201
Media Services provides viewing and listening facilities and classroom services for its collections of videotapes, films, sound filmstrips, slides, audiotapes, and recordings. The media distribution system provides access to the media collections via fiber optic technology, connecting over 40 classrooms, laboratories, and conference rooms.

Network - Office: North Administration Building (2A), room 201
The Network program provides academic programs and support services for specific student populations -- adults returning to the classroom, teachers on sabbatical, healthcare paraprofessionals, state employees, and other groups affiliated with external agencies. Through the Network offices, undergraduate and graduate courses are scheduled at off-campus sites as well as on campus to accommodate these students. Network staff provide pre-admissions counseling and academic advisement and facilitate the enrollment process.

Office of Information Technology - North Administration Building (2A), room 303
Assistant Vice President for Technology Systems, Professor Michael Kress
The Office of Information Technology advances and supports the use of information technology at the College. OIT administers 20 general purpose computer laboratories and 23 specialized computing laboratories in conjunction with academic departments for student use. The microcomputers, approximately 3,000 on campus, are connected to local area networks that connect through a CISCO high speed network. This hardware configuration allows students, faculty, and staff full access to specialized software, the Internet, on-line library resources, and e-mail. Forty-five classrooms, two conference rooms, and two portable units are equipped to run multimedia presentations from a central location. One of the conference rooms is equipped for two-way video conferencing. Microcomputers on campus use, for the most part, Windows 2000, Windows 98, Windows 95, and Windows NT. The OIT homepage is www.csi.cuny.edu/helpdesk/.

Email Accounts
Students seeking to establish an Email account in the College’s system apply at the Office of Information Technology, North Administration (2A), room 306; or apply by telephone at (718) 982-3695. A valid student identification card for the current semester is required.

Sports and Recreation Center - Office: Sports and Recreation Center, room 204
This 77,000 square-foot multi-purpose facility and surrounding athletic fields serve the intercollegiate and intramural sports and recreation program for students. On a membership basis, faculty, staff, alumni, and the general public also have access to the facilities. The Staten Island Advance Sports Hall of Fame, established in 1995, is housed in the Center.

Student Services - Office: South Administration Building, room 301
Vice President Carol Jackson
The Division of Student Affairs is concerned with all aspects of student life at the College and provides a comprehensive program of support services that include, in addition to those services listed above, academic, personal, and career counseling; placement; as well as extra-curricular activities that are scheduled in both day and evening hours.
Admissions Requirements

The Department of Biology Graduate Admissions Committee makes all decisions regarding admission to the program as a matriculated or non-matriculated student. Applicants are required to submit a CSI Graduate Admissions Application and a Department of Biology Application.

1. B.S. in Biology degree from an accredited college (students in the last semester of undergraduate study and students with a baccalaureate in another discipline may also be considered for admission).

2. Overall GPA of 2.75 (B-) and of GPA of 3.0 (B) in undergraduate science and mathematics courses.

3. Two letters of recommendation testifying to the applicant's ability to complete successfully the program of graduate study.

4. General Aptitude Test and the Advanced Test in Biology of the Graduate Record Examination.

5. A grade of 550 on the TOEFL test is required of all applicants for whom English is a second language.

Retention in the Program

A minimum GPA of 3.0 (B) is required for the 30 credits of required courses, of which 6 credits may be allocated to thesis research. Four courses are required of all candidates: BIO 603, BIO 604, BIO 605, ESC 601. The remaining courses, 11 credits, will be chosen according to the student's career goals.

Prior to the completion of 15 credits, students are required to take an oral examination on their research proposal and appropriate scientific knowledge. The Committee for the student's oral examination and later the thesis defense will consist of at least three members, two of whom must be faculty in the Biology Department, including the student's adviser.

Prior to the completion of 15 credits, students must provide evidence of proficiency in writing and speaking, computer skills, and statistics.

Transfer Credits

Acceptance of any graduate course taken elsewhere toward the requirements of a CSI degree is at the discretion of the coordinator of the graduate program. A maximum of nine credits of courses taken elsewhere in the City University may be applied to M.S. in Biology, and a maximum of six credits of courses taken at colleges outside the University may be accepted for transfer. A grade of 3.0 (B) is the minimum for transfer credit.

Degree Requirements: 30 credits

Four required courses: (13 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 603</td>
<td>Scientific Communication I</td>
<td>3</td>
</tr>
<tr>
<td>BIO 604</td>
<td>Scientific Communication II</td>
<td>3</td>
</tr>
</tbody>
</table>
BIO 605 Statistical Analysis 4 credits
ESC 601 The Biosphere and Our Species 3 credits

Ecology, Evolution, and Behavioral Biology; Molecular Cellular and Developmental Biology; Multidisciplinary; and Physiology courses chosen from the following lists: (11 credits)

Ecology, Evolution, and Behavioral Biology
BIO 720 Entomology
BIO 721 Evolution of Primates
BIO 722/ESC 722 Marine Ecology
BIO 723 Ornithology
BIO 724 Plant Population Biology
BIO 730 Principles and Methods of Systematics, Evolution, and Phylogeny
BIO 735 Biogeography
BIO 736 The Mammals

Molecular, Cellular, and Developmental Biology
BIO 740 Advanced Microscopy
BIO 741 Cell Culture Techniques
BIO 742 Cell Physiology
BIO 743 Cellular Toxicology
BIO 744 Laboratory Methods in Cell Biology
BIO 750 Laboratory Methods in Molecular Genetics
BIO 751 Molecular Genetics

Multidisciplinary
BIO 760 Introduction to Bioinformatics and Genomics
BIO 761 Mathematical Methods in Biology
BIO 771 Principles of Epidemiology

Physiology
BIO 780 Comparative Physiology
BIO 781 Laboratory Methods in Physiology
BIO 782 Vertebrate Endocrinology
BIO 783 Environmental and Evolutionary Physiology

In satisfying these 11 credits, students may take up to nine credits in other departments at CSI, at other senior colleges in CUNY or at the Graduate School.

Research
BIO 799 Thesis Research 1 – 6 credits

Courses

BIO 603 Scientific Communication I 3 hours; 3 credits
The course focuses on scientific writing, with emphasis on the preparation, editing, and evaluation of scientific manuscripts and grant proposals. The student will critique current literature, prepare manuscripts, and review and author grant proposals.

BIO 604 Scientific Communication II 3 hours; 3 credits
This course is a continuation of BIO 603 and emphasis will be placed on public speaking. The student will prepare materials for oral presentation, including making slides and transparencies, and for poster presentations for delivery at scientific meetings. Students will also make oral and poster presentations to an audience of faculty and fellow students.
Prerequisite: BIO 603

BIO 605 Statistical Analysis 3 lecture hours, 3 laboratory hours; 4 credits
Statistical analysis as applied to all biological fields; course will emphasize analysis of students’ own data. ANOVA, regression, time series, and randomization tests will be included. Students must learn SPSS statistical program.
Prerequisite: BIO 272, or equivalent

ESC 601 The Biosphere and Our Species 3 hours; 3 credits
A required course that covers the structure and function of the biospheric ecosystem on the planet Earth, and the impacts of our species upon it in terms of ecology, resource use and exploitation, sociopolitical aspects, economics, environmental ethics, and related topics.

BIO 720 Entomology 3 hours; 3 laboratory hours; 4 credits
A comprehensive introduction to entomology. Lectures will introduce insect structure and behavior with emphasis on 1) adaptations for locomotion; 2) ecology and reproductive behavior; 3) physiological processes; 4) insect generated sound and its function; 5) migration and distribution; 6) developmental and metamorphic stages. Laboratory sessions will involve dissection of preserved and fresh specimens, observation of live animals, field collection and identification.
Prerequisite: BIO 322 or BIO 338 or BIO 360 or equivalent, or permission of the instructor

BIO 721 Evolution of Primates 3 hours; 3 credits
Examines the evolution of primates from tree shrews to apes. Adaptations of morphology, physiology, locomotion, diet, foraging behavior, ability to learn, tool use, territoriality, aggressive behavior, dominance hierarchies, mating systems, dispersal, social structure and communication systems in Old and New World species to their environment. The socio-biology and ecology of selected species will be treated in greater detail.
Prerequisite: BIO 322 or BIO 338 or BIO 360 or equivalent, or permission of the instructor

BIO 722 Marine Ecology (Also ESC 722) 3 hours; 3 credits
Field-oriented study of estuarine and pelagic ecosystems. This course will emphasize how spatial and temporal scales are critically important in the study of marine organisms. Students will learn specialized sampling and analytical techniques necessary for the study of marine systems. Topics will include comparisons of “rate-based” versus “abundance-based” studies of population dynamics plus comparisons of individual, population and community levels of analysis.
Prerequisite: BIO 360 or equivalent
BIO 723  Ornithology
3 lecture hours, 3 laboratory hours; 4 credits
A comprehensive introduction to ornithology. Lecture will introduce bird structure and behavior with emphasis on 1) anatomical and physiological adaptations for flight; 2) ecology and reproductive behavior; 3) song and its function; and 4) migration and distribution. Most laboratory sessions will be field trips for locating and identifying birds, observation of bird behavior and recording bird songs. One or more laboratory session will include anatomical dissection and behavior of captive birds. There will be at least one overnight field trip to study nocturnal migration.
Prerequisite: BIO 322 or BIO 338 or BIO 360 or equivalent, or permission of the instructor

BIO 724  Plant Population Biology
3 hours; 3 credits
Ecological and evolutionary perspectives on the dynamics of plant populations. Topics include demography, life-history evolution, ecological genetics, phenotypic and genotypic variation within and between populations, competition, reproduction and breeding systems, pollination ecology, seed dispersal and germination, symbioses, clonality, and coevolution. In addition, the application of population concepts to environmental and conservation problems will be covered.
Prerequisites: BIO 228 and BIO 312 and BIO 360 or equivalents.

BIO 730  Principles and Methods of Systematics, Evolution and Phylogeny
3 lecture hours, 3 laboratory hours; 4 credits
Species concepts and the history of evolutionary thought. Mechanisms of evolutionary change. The history of life.
Prerequisite: BIO 322 or equivalent.

BIO 735  Biogeography
4 hours; 4 credits
An introduction to the distribution of both terrestrial and aquatic animals and plants on earth with emphasis on their prehistoric, historic, and present distributions and how these relate to the ecological conditions of the periods, methods of dispersal and movement across the planet will be described and discussed. Historical changes in scientific thought concerning the means of movement (e.g., land bridges, rafting, plate tectonics) presented, the flora and fauna of unique regions of the earth (e.g., Madagascar, Australia, South America, and Antarctica) will be examined for similarities and differences in their compositions. The effects of humans, early and present, on distribution.
Prerequisite: BIO 322 or BIO 338 or BIO 360 or equivalent, or permission of the instructor. NOTE: ESC 735 may substitute for this course.

BIO 736  The Mammals
3 hours; 3 credits
The evolution of the various orders of mammals from monotreme to marsupial to placental. Studies of the various morphological, physiological, and behavioral characteristics that define each order. Emphasis on adaptations of behavior, social structure and mating systems to environmental conditions.
Prerequisite: BIO 322 or BIO 338 or BIO 360 or equivalent, or permission of the instructor

BIO 740  Advanced Microscopy
6 laboratory hours; 3 credits
Preparations of biological specimens for use in confocal laser scanning microscopy, scanning and transmission of electron microscopy, image analysis of micrographs.
Prerequisite: BIO 272 or equivalent.

BIO 741  Cell Culture Techniques
6 laboratory hours; 3 credits
Preparation and propagation of eukaryotic cell lines from primary tissue isolates.
Prerequisite: BIO 352 or equivalent.

BIO 742  Cell Physiology
3 lecture hours, 3 laboratory hours; 4 credits
Students will examine the function of living cells, including examination of membrane composition and biogenesis, membrane transport proteins, electrical properties of membranes, and interaction between cells and extracellular matrix and cell-cell interactions.
Prerequisite: BIO 352 or equivalent.

BIO 743  Cellular Toxicology
(Also ESC 743)
4 hours; 4 credits
Toxicology is the overview of the mechanisms by which exogenous agents produce deleterious effects in biological systems. An overview of the sensitive analytical techniques that have facilitated studies on the metabolism and biotransformation of xenobiotics and have contributed to interpretation of the biological and toxicological effects of xenobiotics will be presented. Since the action of toxins is ultimately exerted at the cellular level, emphasis will be placed on the description of representative model cell systems that play an important role in the identification and assessment of potential environmental hazards. A variety of prokaryotic and eukaryotic cell systems are currently in use for the study of different toxic effects including cytotoxicity, genotoxicity, and mutagenesis.
Prerequisites: CHM 256, and BIO 314 and BIO 352 or equivalent.

BIO 744  Laboratory Methods in Cell Biology
6 laboratory hours; 3 credits
Use of current cell biology techniques available. Techniques will include subcellular fractionation, polyacrylamide gel electrophoresis, immunoblot techniques, polymerase chain reaction and in situ hybridization. Use of confocal laser scanning and electron microscopes will be included.
Prerequisite: BIO 352 or equivalent.

BIO 750  Laboratory Methods in Molecular Genetics
6 laboratory hours; 3 credits
Techniques needed to form, recover and analyze recombinant DNA will be performed. Southern analysis and PCR will also be included.
Prerequisites: BIO 312 and BIO 352 or equivalent.

BIO 751  Molecular Genetics
4 hours; 4 credits
Topics will include nucleic acid and chromosome structure, transcription, translation, protein localization, and regulation of gene expression, DNA replication and repair, biotechnology, signal transduction, regulation of the cell cycle and oncogenes. Both prokaryotic and eukaryotic systems will be discussed.
Prerequisites: BIO 312 and BIO 352 or equivalent.
**BIO 760** Introduction to Bioinformatics and Genomics  
4 hours; 4 credits  
Introduction to the representation and analysis of biological sequence and structural information. Description and use of nucleic acid, protein, structure, sequence motif, genome, literature and other relevant databases. Overview and discussion of basic sequence manipulations and analyses including sequence assembly and editing, restriction and protease analysis, coding region identification, gene prediction, database searching and similarity analysis, pairwise and multiple sequence alignment, PCR primer design, phylogenetic analyses, protein structure and property prediction, RNA structure prediction, microarray analyses. Course format includes lectures and sequence analysis exercises.  
Prerequisite: BIO 312 or equivalent. Recommended: BIO 370 or BIO 352 or equivalent and BIO 751 or equivalent. Not open to students who have taken BIO 326.

**BIO 761** Mathematical Models in Biology  
3 lecture hours, 3 laboratory hours; 4 credits  
Prerequisites: MTH 230 or equivalent plus at least one advanced course in Biology (300 level or above).

**BIO 771** Principles of Epidemiology  
3 hours; 3 credits  
Introduction to principles and methods of epidemiological investigation of both infectious and noninfectious diseases. How studies of the distribution and dynamics of diseases in communities and populations contribute to an understanding of their etiology, modes of transmission, and pathogenesis. Clinical examples of the evaluation of treatment, prevention, costs, and policy implications of disease.  
Prerequisites: BIO 272 and basic computer knowledge.

**BIO 780** Comparative Physiology  
4 hours; 4 credits  
Class will survey major taxonomic groups to identify diverse solutions to universal problems of nutrient acquisition and transport, osmoregulation, movement and maintenance of homeostasis.  
Prerequisites: BIO 205 and BIO 213 or BIO 215.

**BIO 781** Laboratory Methods in Physiology  
6 laboratory hours; 3 credits  
Diverse topics of physiological techniques including respirometry, enzyme and metabolite assays, analysis of osmolarity and osmolytes will be addressed depending upon the research requirements of specific students.  
Prerequisites: BIO 205, BIO 370 or equivalents.

**BIO 782** Vertebrate Endocrinology  
6 laboratory hours; 3 credits  
Focus will be on the role of chemical messengers of endocrine and neural origin in the control of vertebrate physiological processes, i.e., growth and regulation of cellular function. In addition, the cellular source, biosynthesis, chemistry and storage of the messengers, the factors and mechanisms controlling messenger secretion, and the cellular mechanisms of messenger actions will be emphasized.  
Prerequisites: BIO 205, BIO 332, CHM 256 or equivalent.

**BIO 783** Environmental and Evolutionary Physiology  
3 hours; 3 credits  
The class will focus on questions in ecological and evolutionary physiology. It will include examination of specific examples of environmental adaptation, especially to extreme environments. Discussion of methodological approaches and current philosophical debates on identifying adaptation in physiological processes will also be covered. Class will include critiques of primary literature.  
Prerequisites: BIO 434 or equivalent and BIO 605. Recommended: BIO 370 or equivalent.

**BIO 799** Thesis Research  
Hours and credits vary, maximum 6 credits with a maximum of 3 credits in one semester. This course may be repeated. No student may apply more than a total of six credits of Thesis Research toward the degree.

**Master of Arts in Cinema Studies (M.A.)**  
Program Coordinator: Assistant Professor David Gerstner  
Center for the Arts (1P), room 232A  
Email: Gerstner@postbox.csi.cuny.edu  
Telephone: (718)982-2546  
(See section Graduate Courses in Selected Disciplines for cinema courses for teachers.)  

The program offers graduate courses in film history, aesthetics, theory, and cultural criticism. The program is designed to provide graduate students with an intensive and comprehensive study of the varied ways to approach film, e.g., as an art object, as a set of discursive practices, as a particular signifying system, as a set of strategies which evokes certain responses within particular interpretive communities, as a set of economic and social institutions, and as powerful ideological devices for expressing and suppressing selective aspects of national identity or race or gender. The student will develop a working familiarity with a number of different methods and methodologies, and will have the opportunity to work individually with faculty members. Extensive use is made of the film archives of the College, of the University; and of the other archives, museums, libraries, and research facilities in New York City. The College maintains a well-equipped filmmaking workshop, and its facilities are available under certain circumstances to graduate students. Students in the graduate program are encouraged to study filmmaking, but filmmaking courses are not required for completion of the degree.

**Admission Requirements**  
The Bachelor of Arts degree in liberal arts and sciences major. Satisfactory completion, with a B average, on the undergraduate level, of the courses required for the B.A. in Cinema Studies at the College of Staten Island, or their equivalent. Students transferring from other majors or other colleges will be permitted to remedy undergraduate deficiencies while working toward the M.A., but courses taken to remove deficiencies must be in addition to their regular course work for the M.A., and at a minimum must include CIN 100 Introduction to Film and CIN 210 History and Theory of Film 1.  
Applications are accepted Fall and Spring semesters.
Degree Requirements

32 credits in graduate cinema studies courses which must include:

- CIN 705 Cinema Research and Analysis

and at least three of the following courses:

- CIN 713 Studies in Major Directors
- CIN 722 Studies in Theory and Criticism
- CIN 731 Studies in National Cinemas
- CIN 742 Studies in Genres

Note: A maximum of eight credits in film production may be counted toward the degree, with the approval of the candidate’s graduate adviser. Since there are only undergraduate production courses, graduate students who are approved for these credits will earn them through registration and satisfactory completion of 300-level undergraduate film production courses taken for graduate credit at graduate tuition. Such registration will also be subject to approval by the undergraduate faculty teaching those courses. No graduate independent study in film production is permitted.

Satisfactory completion of one of the following three options:

Option A: Thesis

Topics suitable for the master’s thesis span the entire range of cinema theory and history. Possible topics include studies of individual directors and their films as well as critical bibliographies of specific subjects. The topic should be one that can be written about adequately within the suggested length of the essay (approximately 50 pages, not including footnotes and bibliography). Whenever possible, the topic of the thesis should extend or at least reflect the candidate’s graduate course work. Candidates should be aware of the following steps to be taken in completing the thesis option:

1. Each candidate is strongly advised to take CIN 705 Cinema Research and Analysis in the first semester of graduate studies. The focus of the course will be in part the preparation of the master’s thesis.
2. Each candidate must choose a committee composed of three members of the graduate faculty in Cinema Studies. The chair of the committee will direct the entire preparation of the thesis, and the other two members will approve the outline and read the final thesis.
3. Each candidate must submit a detailed outline to the committee before undertaking the actual writing of the thesis. The committee must approve this outline and may request a meeting with the candidate to discuss it.
4. The completed thesis must be submitted in three copies, one for each member of the committee. The committee may request a meeting with the candidate to discuss the thesis. When the committee approves the thesis, the student must then present two copies of the approved thesis: one is bound and catalogued by the College library; the other is retained in the Department files. In all matters of format, the MLA Handbook will be the guide and arbiter.

Note: Students who elect Option A must have maintained an A- average or higher.

Option B: Examination

This option consists of a comprehensive take-home written examination. This examination will be divided into two parts:

1. Film History: this section includes the following subject-areas: periods, genres, auteurs, and national cinemas.
2. Film Theory: this section includes critical writings on cinema, from classical film theory (e.g., cognitivism, formalism) to contemporary film theory (e.g., semiotics, psychoanalysis, feminism, and cultural studies approaches).

Each section will comprise three questions. Students must answer one question from each section.

The examination will be taken only upon completion of course work. It will be given once a year, in June. Applications to take the examination must be made no later than March 15 of the year the examination is to be taken.

Each student must submit four lists of areas of specialization - two for the Film History section and two for the Film Theory section. The lists must include a detailed filmography and bibliography.

Each filmography must include ten films. Filmographies will not be approved by the faculty until the student can document access to each of the films.

Each bibliography should include at least five full-length books and a number of key essays.

Selection of an area of specialization related to American cinema must be accompanied by the selection of an area of specialization related to some non-American cinema. Likewise, selection of an area of specialization related to classical film theory must be accompanied by the selection of an area of specialization related to contemporary film theory.

The questions on the examination will take into account the specific areas of knowledge indicated by the candidate. Answers to the question should each be ten double-spaced typed pages minimum. Completed examinations will be due ten days after issuance.

Candidates should be aware of the following steps to be taken in completing the examination option:

1. Each candidate is strongly advised to take CIN 705 Cinema Research and Analysis in the first semester of graduate studies. The focus of the course will be in part preparation for the comprehensive examination.
2. Each candidate must choose a committee composed of three members of the graduate Cinema Studies faculty. The chair of the committee will direct the entire preparation of the examination, and the other two members will approve the candidate’s choice for part two of the examination and will read the entire examination.
3. Each candidate must submit a detailed proposal for the examination before undertaking the actual preparation. The committee must approve this proposal and may request a meeting with the candidate to discuss it.
4. The complete examination will be read by the entire committee, which may request a meeting with the candidate to discuss it. When the committee approves the examination, it will be retained in the Department files, although the candidate may retain a copy.
Option C: Original Film
For this option, students may submit an original film work. Students who elect this option must also fulfill the requirements of Option B, item (1), Film History. The examination will be held at the College and will be of three hours duration.

Maintenance of Candidacy
To maintain candidacy for the M.A. degree, full-time students must maintain a B (3.0) average in each 12-credit semester. Part-time students must maintain a B average in each successive 12-credit sequence of courses taken.

Note: All candidates should be aware that they must pay the maintenance of matriculation fee during any semester in which they are not enrolled, unless they are not using College facilities (including the library and screening facilities) during this period. In this case, they may pay the reinstatement fee and the maintenance fee for the semester in which they are graduating. If the candidate has not paid for each semester, the reinstatement and maintenance fee for one semester may be paid, provided that the candidate has not used the College facilities and that the request is supported by a written statement from the committee chair.

Courses

CIN 700  Perception of Film
4 hours; 4 credits
An introduction to the terms and techniques of cinema analysis -- the contribution of composition, lighting, editing, dialogue, scoring, set design, acting, and direction in creating the meaning and effect of a film. Open to all graduate students without prerequisite. Not intended for students who have taken CIN 100.

CIN 705  Cinema Research and Analysis
4 hours; 4 credits
Tools and procedures of cinema research including library and archive research and cinema analysis including detailed study of a single film. The research and the analysis will be coordinated, so that a candidate’s study of a single film relates to all other material relevant to an understanding of it. The course will cover both the initial tasks of preparing for the master’s essay or for the examination. Required of all candidates for the M.A. degree, who are encouraged to enroll in it during their first semester.
Prerequisite: matriculation in the graduate Cinema Studies program; or CIN 100 or CIN 700 with permission of instructor.

CIN 713  Studies in Major Directors
4 hours; 4 credits
Intensive study of the works of a single important director, or pair of directors, whose work is related. This course may be repeated for credit; see Degree Requirements.
Prerequisite: matriculation in the graduate Cinema Studies program; or CIN 100 or CIN 700 with permission of instructor.

CIN 722  Studies in Film Theory and Criticism
4 hours; 4 credits
Intensive study of specific works of film theory and/or criticism. This course may be repeated for credit; see Degree Requirements.
Prerequisite: matriculation in the graduate Cinema Studies program; or CIN 100 or CIN 700 with permission of instructor.

CIN 731  Studies in National Cinemas
4 hours; 4 credits
Intensive study of the historical, theoretical, and critical aspects of the film art and industry of individual countries, examining films within a national-cultural context. This course may be repeated for credit; see Degree Requirements.
Prerequisite: matriculation in the graduate Cinema Studies program; or CIN 100 or CIN 700 with permission of instructor.

CIN 741  Experimental Film
4 hours; 4 credits
The history and theory of nonrepresentational anti-realism and abstraction in the cinema from the earliest experiments to computer films. Among the filmmakers to be discussed will be Cohl, Durand, Eggeling, Richter, Duchamp, Dali, Cocteau, Brakhage, Baillie, Snow, Anger, and the Whitney brothers.
Prerequisite: matriculation in the graduate Cinema Studies program; or CIN 100 or CIN 700 with permission of instructor.

CIN 742  Studies in Genres
4 hours; 4 credits
Historical, theoretical, and critical studies of representative film genres (the western, the musical, film noir, the thriller, science fiction, etc.). This course may be repeated for credit; see Degree Requirements.
Prerequisite: matriculation in the graduate Cinema Studies program; or CIN 100 or CIN 700 with permission of instructor.

CIN 743  Direct Cinema
4 hours; 4 credits
Historical, theoretical, and critical study of direct cinema, with particular attention to the work of Richard Leacock, D.A. Pennebaker, Marcel Ophuls, Albert and David Maysles, and Frederick Wiseman.
Prerequisite: matriculation in the graduate Cinema Studies program; or CIN 100 or CIN 700 with permission of instructor.

CIN 744  Cinema and Ideology
4 hours; 4 credits
Intensive study in cinema, as it reflects a particular ideology, and/or as it can be studied theoretically and critically according to a particular ideology.
Prerequisite: matriculation in the graduate Cinema Studies program; or CIN 100 or CIN 700 with permission of instructor.

CIN 745  Third World Cinema
4 hours; 4 credits
Intensive study of the cinema, both fiction and nonfiction, of third world countries, such as Mexico, Egypt, and India, with particular emphasis on the relationship of aesthetics and ideology in the emerging countries.
Prerequisite: matriculation in the graduate Cinema Studies program; or CIN 100 or CIN 700 with permission of instructor.
The program is designed to provide advanced education in this expanding discipline. It serves those students who wish to increase their professional competence for business, industry, and research and development laboratories, as well as those students who wish to enter careers in research and teaching. Students may continue in doctoral programs in Computer Science including the City University program in which CSI participates.

All students are required to take five foundation courses covering theoretical computer science, operating systems, computer architecture, programming methodology and applied mathematics for computer scientists. The required Graduate Research Laboratory course is designed to enhance the capability of students to do independent work in the field. Courses to meet the remaining requirements are chosen in consultation with a graduate program adviser to create a program that meets the needs of the individual student.

Any other registered CSI graduate course in Computer Science shall be counted as an elective for the purposes of fulfilling the M.S. in Computer Science degree requirements, with the following exceptions: those courses specifically identified as computing for teachers or other computer science teacher education courses.

**Admission Requirements**

1. A Bachelor of Science degree in Computer Science or related area with a B average (3.0 out of 4.0) overall and in the major.
2. Graduate Record Examination.
3. Satisfactory completion or demonstrable knowledge of High-Level Language CSC 126
   Assembly Language CSC 220
   Discrete Mathematics CSC 228
   Information Structures CSC 326
   Systems Programming CSC 330
   Switching Theory CSC 346
   Calculus MTH 230 or 231, and 232, 233, or 235, 236
   Abstract Algebra MTH 339
   Probability MTH 311

   or their equivalents. (See the CSI undergraduate catalog for descriptions of these courses.)

Applications are accepted for Fall and Spring semesters.

**Degree Requirements**

1. Matriculated status
2. A program of 12 courses (36 credits) with at least a 3.0 (B) average. The following core courses are required of all students:
   CSC 718 Operating Systems Design
   CSC 722 Computability
   or
   CSC 724 Formal Language Theory
   CSC 727 Algorithms and Information Structures
   CSC 740 Computer Systems Design
   CSC 755 Applied Mathematics for Computer Science
   CSC 759 Graduate Research Laboratory

   The remaining courses will be chosen from:
   CSC 706 Computer Graphics
   CSC 710 Software Engineering
   CSC 712 Compiler Construction
   CSC 713 Advanced Systems Programming
   CSC 714 Software Systems Analysis and Design
   CSC 715 Data Base Theory
   CSC 731 Topics in Artificial Intelligence
   CSC 732 Advanced Topics in Artificial Intelligence
   CSC 733 Natural Language Processing
   CSC 735 Knowledge Engineering I
   CSC 741 Digital Image Processing
   CSC 742 Advanced Microcomputer Systems Design
   CSC 744 Computer Performance Evaluation
   CSC 747 Digital Signal Processing
   CSC 748 Quantitative Analysis of Computer Architecture
   CSC 750 Computer Aided Analysis and Design
   CSC 752 Management Information Systems
   CSC 754 Topics in System Simulation
   CSC 757 Communication Networks
   CSC 758 Media Transmission and Network Management

   Exceptional students may be permitted to satisfy six credits of the total credit requirement with a Master’s thesis.

3. Graduate Research Laboratory and Seminar (CSC 759)

   M.S. degree candidates are required to participate in the Graduate Research Laboratory and Seminar in their last semester. Students will be required to present a project paper on a selected topic, demonstrating command of the current computer science literature. Papers will be researched and prepared under the supervision of the M.S. degree adviser and/or a faculty member in whose area of expertise the student is interested. Master’s thesis students will report on their work. The Graduate Research Laboratory and Seminar course is designed to enhance the capability of students to do independent work in the field. Students’ work will be evaluated by the graduate committee of the department. A satisfactory evaluation is required for graduation.

**Specialization Areas**

Certain specialization areas within computer science are well represented by the department faculty research interests. Students interested in specializing in any of these areas are recommended to take the listed courses. For additional CUNY Graduate Center courses in a specialization area, consult the graduate program coordinator.
Software Engineering
CSC 710 Software Engineering
CSC 713 Advanced Systems Programming
CSC 714 Software Systems Analysis and Design
CSC 715 Data Base Theory
CSC 744 Computer Performance Evaluation

Graphics and Image Processing
CSC 706 Computer Graphics
CSC 715 Data Base Theory
CSC 741 Digital Image Processing

Knowledge Engineering
CSC 713 Advanced Systems Programming
CSC 731 Topics in Artificial Intelligence
CSC 733 Natural Language Processing
CSC 735 Knowledge Engineering I

Software System Design
CSC 706 Computer Graphics
CSC 712 Compiler Construction
CSC 713 Advanced Systems Programming
CSC 714 Software Systems Analysis and Design
CSC 715 Data Base Theory

Computer Engineering
CSC 706 Computer Graphics
CSC 714 Software Systems Analysis and Design
CSC 742 Advanced Microcomputer System Design
CSC 744 Computer Performance Evaluation
CSC 750 Computer Aided Analysis and Design
CSC 754 Topics in System Simulation

Information Systems
CSC 706 Computer Graphics
CSC 714 Software Systems Analysis and Design
CSC 715 Data Base Theory
CSC 752 Management Information Systems
CSC 757 Communication Networks

Courses

CSC 705 Advanced Microcomputer Systems Design
3 hours; 3 credits
Introduction to microcomputer development systems, simultaneous hardware and software development. In-circuit emulation for debugging hardware and software. Interfacing details. Interrupt handling. Laboratory work in the design and implementation of actual systems.
Prerequisites: CSC 460 and 461 or equivalent

CSC 706 Computer Graphics
3 hours; 3 credits
Display memory, generation points, vectors, etc. Interactive versus passive graphics. Analog storage of images in microfilm, etc. Digitizing and digital storage. Pattern recognition by features, syntax tables, random nets, etc. Data structures and graphics software. The mathematics of three dimensions, projections and the hidden-line problem. "Graphical programs," computer-aided design and instruction, and animated movies.

CSC 710 Software Engineering
3 hours; 3 credits
Developing large-scale reliable software systems. Modelling tools and techniques. Performance analysis and trade offs, debugging techniques. Documentation, testing and management of software. Study and practical application of principles of good program development. A significant project will be required.

CSC 712 Compiler Construction
3 hours; 3 credits
The grammars of programming languages: lexical analyzers, parsers, code emitters and interpretation; global and peep-hole optimization; run-time support; error management; translatory writing systems.
Prerequisite: CSC 727

CSC 713 Advanced Systems Programming
3 hours; 3 credits
System and program design for advanced software and hardware architectures. Pre- and post-analysis of system implementations. Topics may include Non-von Neumann Architectures.

CSC 714 Software Systems Analysis Design
3 hours; 3 credits

CSC 715 Data Base Theory
3 hours; 3 credits
In-depth review of data base systems and extensive survey of the current literature on the topic.
Prerequisite: CSC 727

CSC 718 Operating Systems Design
3 hours; 3 credits
Processors and concurrent programming; memory management, I/O and file systems, scheduling, protection, user interfaces and distributed system issues.

CSC 722 Computability
3 hours; 3 credits

CSC 724 Formal Language Theory
3 hours; 3 credits
Classification of languages by grammars and automata. The Chomsky hierarchy: regular, context free, context sensitive and recursively enumerable languages and their associated grammars and automata. Closure properties for families of languages. Decision problems for grammars and automata.
CSC 727  Algorithms and Information Structures  
3 hours; 3 credits  

CSC 731  Topics in Artificial Intelligence  
3 hours; 3 credits  
Current topics in AI. Examples include machine learning, language or image understanding, automatic programming, formal reasoning, heuristics and game playing, intelligent computer-assisted instruction, knowledge representation and expert systems, robotics.  
Prerequisite: CSC 727

CSC 732  Advanced Topics in Artificial Intelligence  
3 hours; 3 credits  
In-depth study of specialized areas in artificial intelligence such as image understanding, pattern recognition, natural language understanding, machine learning, planning, temporal and spacial reasoning. Further topics may include: mathematics for artificial intelligence, measures of uncertainty, statistical reasoning; new architectures for artificial intelligence, neural networks; comparative study of languages for artificial intelligence.  
Prerequisite: CSC 731 or equivalent

CSC 733  Natural Language Processing  
3 hours; 3 credits  
Prerequisite: CSC 727

CSC 735  Knowledge Engineering I  
3 hours; 3 credits  
Foundation of knowledge engineering, knowledge elicitation, knowledge formalization, and knowledge representation. Expert elicitation techniques, general systems knowledge structures and meta-knowledge structures, GSPS roadmap for problem solving strategies, expert system shells, frame and rule based reasoning. Role of object oriented programming.  
Prerequisite: CSC 722 or CSC 724

CSC 740  Computer System Design  
3 hours; 3 credits  
Designs of systems using processors, memories, input/output (I/O) devices and I/O interfaces as building blocks. Computer system organization and architecture: accumulator, general-register, and stack machines, multiprocessors and other organizations. Memory and I/O buses, I/O interface design and typical I/O devices. Memory hierarchies.

CSC 741  Digital Image Processing  
3 hours; 3 credits  
Prerequisite: CSC 727

CSC 742  Advanced Microcomputer Systems Design  
3 hours; 3 credits  
Introduction to microcomputer development systems, simultaneous hardware and software development. In-circuit emulation for debugging hardware and software. Interfacing details. Interrupt handling. Laboratory work in the design and implementation of actual systems.  
Prerequisite: CSC 740

CSC 744  Computer Performance Evaluation  
3 hours; 3 credits  
The system life cycle model and its impact on computer performance and capacity planning. Topics include load drivers and benchmarks, simulation and analytic queueing models, statistical methods, workload characterization, software and hardware monitors, performance triggering, bottleneck identification, load, service and capacity relationships.

CSC 747  Digital Signal Processing  
3 hours; 3 credits  
Prerequisites: CSC 727, CSC 755

CSC 748  Quantitative Analysis of Computer Architecture  
3 hours; 3 credits  
An advanced course in computer architecture, the course covers a variety of classical computer architecture topics with heavy emphasis on quantitative approach to analyzing computer architecture and evaluating design tradeoffs.  
Prerequisite: CSC 740 or strong undergraduate course in Computer Architecture

CSC 750  Computer Aided Analysis and Design  
3 hours; 3 credits  

CSC 752  Management Information Systems  
3 hours; 3 credits  
The role of computers in management information systems. Analysis of information requirements, design approaches, processing methods, data
management control of operations. Planning and control systems; analytical and simulation models of decision making. Economics of information, implementation of integrated systems, organizational social implications of information technology.

**CSC 754 Topics in System Simulation**
3 hours; 3 credits
Techniques for the simulation of complex systems; simulation of computer systems. Statistical issues in simulation. Simulation methodology. Survey of simulation languages.

**CSC 755 Applied Mathematics for Computer Science**
(Also MTH 626)
3 hours; 3 credits
Selected topics in mathematics and mathematical system areas which are essential for advanced studies in computer science. Topics are drawn from probability, statistics, queueing theory, numerical analysis, universal algebra, mathematical logic, general systems theory and cybernetics.

**CSC 757 Communication Networks**
3 hours; 3 credits
Motivations and objectives of computer networks; overview of layered architecture and the ISO Reference Model; network functions, Circuit-switching and packet-switching; physical layer protocols; data link protocols including HDLC and multi-access link control. Network control, transport, and session protocols including routing flow control; end-to-end communication and inter-networking. Presentation layer protocols including virtual terminal and file transfer protocols, cryptography, and text compression. Specific examples and standards will be cited throughout the course for point-to-point, satellite, packet radio, and local networks.
Prerequisite: CSC 740

**CSC 758 Media Transmission and Network Management**
2 hours lecture and one hour conference; 3 credits
Basic requirements of transmission media, fiber optic medium, typical attenuation and dispersion characteristics, mathematical treatment of the fiber medium. The copper medium, twisted wire pair, coaxial media, premises distribution system, role of new cables for high-speed digital systems, mathematical treatment of the copper medium. Limits of copper based telecommunication systems, role of fiber and coaxial system, characterization, and limitations.
Prerequisite: CSC 740 or CSC 757

**CSC 759 Graduate Research Laboratory**
3 hours; 3 credits
In-depth research and development of current topics under study in the departmental research facility, and in associated graduate courses. A significant project and technical paper is required utilizing, where applicable, state of the art equipment in the laboratory. Topics of current research interest include, image processing, multilevel expert systems, distributed functionally specific processors, advanced knowledge engineering, artificial intelligence, voice recognition and synthesis and natural language processing. Topics vary by semester and are keyed to current faculty research.

Courses offered at the CUNY Graduate School and University Center may be taken by advanced graduate students by special arrangement.

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**Graduate Programs in Education**
Department Chairperson: Assistant Professor Susan Sullivan
Email: sullivan@postbox.csi.cuny.edu
Telephone: (718)982-3718
Education Building (3S), room 208

The Department of Education offers programs leading to the Master of Science in Education (MSEd) in Childhood Education, Adolescence Education, and Special Education; and the Sixth-Year Professional Certificate in Education Supervision and Administration. Admission and degree requirements are shown under the program descriptions that follow.

Education courses are identified according to the following ALPHA designations:
- EDA - Supervision and Administration;
- EDC - Early Childhood;
- EDD - General Education;
- EDE - Childhood Education (Elementary Education);
- EDP - Special Education;
- EDS - Adolescence Education (Secondary Education).

Students are also referred to the section on Graduate Courses in Selected Disciplines for courses of interest to teachers and courses designed especially for professionals in education, from early childhood education through high school. Graduate courses are available in American studies, art, biology, computer science, dramatic arts, history, mathematics, political science, and philosophy of science.

**Policies**
The following policies apply to students in the master’s degree programs:

**Admission with Advanced Standing**
A student having completed graduate work at another institution (within the past five years) may apply for advanced standing. Credit may be allowed toward graduate programs at the College of Staten Island with the following limitations:

1. No more than 12 credits from another branch of the City University of New York may be accepted. No more than six credits will be accepted from any other institution.
2. No course will be accepted for which the student received a grade of less than 3.0 (B). Only courses taken within five years prior to application will be considered.
3. Acceptance of courses meeting the above requirements is not automatic. Acceptance of any course taken elsewhere toward the requirements for the CSI degree is at the discretion of the coordinator of the graduate program. Courses submitted must be equivalent to courses offered at CSI that meet the student’s programmatic needs. Therefore, students are urged to submit advanced standing requests prior to, or as soon as possible after, matriculation into the program. Forms are available at the Registrar's Office.

**Grade Point Average**
Students must maintain a 3.0 (B) grade point average to receive a graduate degree in education.
Advanced students may be allowed to take one or two specific graduate courses at other institutions with prior approval of the Graduate Program Coordinator and Department Chairperson.

**Master of Science in Childhood Education (M.S. Ed.)**

Program Coordinator: Associate Professor Jed Luchow  
Email: Luchow@postbox.csi.cuny.edu  
Telephone: (718)982-3740  
Education Building (3S), room 223

The program is designed to increase the elementary school teacher's competence in teaching, understanding of current educational research and theory, and knowledge in selected areas of the liberal arts and sciences. Upon satisfactory completion of the program, students will have met the academic requirements of the New York State Department of Education for professional certification in childhood education.

**Admission Requirements**

The baccalaureate degree in a liberal arts and sciences major, or 36 credits in a liberal arts and sciences concentration, and an overall grade point average (GPA) at or above 2.75.

Applicants whose GPAs are lower than 2.75 may appeal to the Program Coordinator; however, such appeals will be granted only under extraordinary circumstances. Applicants appealing for admission must present documentation demonstrating their ability to succeed in the program and may be required to take up to 24 credits in undergraduate liberal arts and science courses, as prescribed by the Program Coordinator, in which they must earn grades no lower than 2.7 (B-).

Candidates must have (or qualify for) a New York State initial certificate in childhood education. A copy of the certificate must be submitted with the application for admission to the program. Applicants who have not completed the requirements for State certification may be admitted as non-matriculated students until they obtain initial certification.

Applications are accepted for Fall and Spring semesters.

**Degree Requirements**

The program consists of a minimum of 33-34 graduate credits. All students are required to complete an acceptable educational research project, which is carried out under faculty supervision in course EDD 631 Educational Seminar II.

**Credit Distribution**

1. Required Education Courses  
   - EDD 630 Educational Seminar I  
   - EDD 631 Educational Seminar II  
   - EDP 660 Teaching Students with Special Needs in the General Education Classroom  
   9 credits

2. Required Areas of Study  
   24 credits

Educational Psychology. One course from among the following:

- EDD 611 Advanced Educational Psychology
- EDD 612 Sociocultural Development during Childhood
- EDD 613 Developmental Psychology: Childhood

Social Foundations of Education. One course from among the following:

- EDD 602 Studies in Urban and Metropolitan Education
- EDD 606 History of Urban Education in the United States
- EDD 616 Comparative and International Education
- EDD 624 Multiethnic Approaches in Teaching

The Disciplines and Pedagogy: Six courses

Students must take three courses from Group A and three from Group B. They must also take at least one course in each of the following areas: English Language Arts, Mathematics, Science and Technology, and Social Studies.

**Group A:** Three courses from among the following:

- DRA 601 Drama in the Schools
- EDD 627/MTH 627 Historical Perspectives on Mathematics Topics
- EDD 640 The Social Impact of Technology
- EDD 626/HST 626 Historical Themes and Interpretations
- EDD 618 The Idea of the Contemporary University
- EDD 628 Philosophy and Children
- ESC 602 Environmental Science for Elementary School Teachers
- POL 636 The Judicial Process
- POL 737 The United States Constitution

**Group B:** Three courses from among the following:

- EDC 600 Contemporary Curriculum in Early Childhood Education
- EDD 620 The Teacher and Curriculum Improvement
- EDD 642 New Media of Instruction
- EDE 620 Advanced Social Studies Education
- EDE 630 Advanced Science Education
- EDE 631 Advanced Science in Early Childhood
- EDE 640 Advanced Mathematics Education
- EDE 642 Advanced Mathematics in Early Childhood Education
- EDE 650 Advanced Study in Reading
- EDE 651 Integrated Strategies for Underachieving Readers
- EDE 652 Children’s Literature
- EDE 661 Music and Movement in Childhood Education
- EDE 662 Advanced Art

The following are considered courses in English Language Arts: DRA 601, EDC 600; EDE 650; EDE 651; EDE 652. The following are considered courses in Mathematics: EDD 627/MTH 627; EDE 640;
Master of Science in Adolescence Education (M.S. Ed.)

Program Coordinator: Associate Professor Eileen Donoghue
Education Building (3S), room 213
Email: Donoghue@postbox.csi.cuny.edu
Telephone: (718) 982-3730

The program is designed to further the competence of secondary school teachers in the areas of biology, English, mathematics, or social studies beyond the baccalaureate level. Upon satisfactory completion of the program, students will have met the academic requirements of the New York State Department of Education for professional certification in one subject area in adolescence education.

Admission Requirements
The baccalaureate degree in an appropriate major with a grade point average (GPA) at or above 2.75. Applicants whose GPAs are lower than 2.75 may appeal to the Program Coordinator; however, such appeals will be granted only under extraordinary circumstances. Applicants appealing for admission must present documentation demonstrating their ability to succeed in the program and may be required to take up to 24 credits in undergraduate liberal arts and science courses, as prescribed by the Program Coordinator, in which they must earn grades no lower than 2.7 (B-).

Applicants must have (or qualify for) a New York State initial certificate to teach in their area of specialization at the secondary level. A copy of the certificate must be submitted with the application for admission to the program.

Candidates for admission must possess the baccalaureate degree in a liberal arts and sciences major, or 36 credits in a liberal arts and sciences concentration, and an overall grade point average (GPA) of at least 3.0. Candidates must have (or qualify for) a New York State Initial Certificate in Childhood Education. A copy of the certificate must be submitted with the application for admission to the program.

Candidates must also have completed 12 credits in psychology with a grade of B (3.0) or above in all courses. Students who have not completed the certification or psychology requirements may be admitted as non-matriculated students until these requirements are satisfied.

Applications are accepted Fall and Spring semesters.

Degree Requirements
The program consists of a minimum of 33-38 graduate credits distributed among eleven courses in the categories listed below. All students are required to complete an acceptable educational research project, which is carried out under faculty supervision in the course EDD 631 Educational Seminar II. Requirements for all students are as follows:

- EDD 620 Advanced Studies in Teaching Secondary School Mathematics
- EDD 626 Advanced Studies in Teaching Secondary School Science
- One course in Educational Psychology (EDD 611 or EDD 615)
- One course in Historical/Social Foundations of Education (EDD 602, EDD 606, EDD 616, or EDD 624)
- One course in the teaching of exceptional children (EDP 660)

In addition, within their area of specialization, students must take the following:
- Mathematics or Biology: four courses in area of specialization
- English or Social Studies: EDS 654 Reading in the Content Areas and three courses in area of specialization

Master of Science in Special Education (M.S. Ed.)

Program Coordinator: Associate Professor Effie P. M. Simmonds
Education Building (3S), room 226
Email: Simmonds@postbox.csi.cuny.edu
Telephone: (718) 982-3742

The program prepares students to teach students with disabilities in childhood. In addition to advanced course work, supervised field work experience is required. Satisfactory completion of this program fulfills the academic requirements of the New York State Department of Education for professional certification in teaching students with disabilities in childhood.

Admission Requirements
Candidates for admission must possess the baccalaureate degree in a liberal arts and sciences major, or 36 credits in a liberal arts and sciences concentration, and an overall grade point average (GPA) of at least 3.0. Candidates must have (or qualify for) a New York State Initial Certificate in Childhood Education. A copy of the certificate must be submitted with the application for admission to the program.

Candidates must also have completed 12 credits in psychology with a grade of B (3.0) or above in all courses. Students who have not completed the certification or psychology requirements may be admitted as non-matriculated students until these requirements are satisfied.

Applications are accepted Fall and Spring semesters.

Academic Policies
Students working full time will not be allowed to enroll for more than two graduate courses per semester.
Degree Requirements
The program consists of ten three-credit required courses and two electives for a total of 12 courses (36 credits). Several of the courses have fieldwork requirements. As a culminating experience, students complete an original research paper in EDP 642 Research Project in Special Education.

Required Courses 30 credits
*EDP 610 Psychology of Exceptional Children
EDP 611 Social Foundations of Special Education
EDP 621 Teaching English Language Arts and Social Studies in Special Education and Inclusive Classrooms
EDP 622 Classroom Management in Special Education and Inclusive Classrooms
EDP 624 Reading: Assessment and Instruction in Special Education and Inclusive Classrooms
EDP 626 Principles of Assessment in Special Education
EDP 630 Practicum in Special Education
EDP 640 Fundamentals of Educational Research in Special Education
EDP 642 Research Project in Special Education
EDP 680 Integrating Technology in Math and Science Instruction in Special Education and Inclusive Classrooms

Elective Courses 6 credits
One course from among the following:
EDD 620 The Teacher and Curriculum Improvement
EDP 625 Reading: Advanced Instructional Methods
EDP 665 Transition: Career and Vocational Education in Special Education

One course from among the following:
EDP 627 Assessment for Instruction in Special Education and Inclusive Classrooms
EDP 635 Primary Support Systems in Special Education and Inclusive Classrooms
EDP 675 Issues in Bilingualism in Special Education and Inclusive Classrooms
EDP 685 Perspectives on Normalization and Integration in Special Education

*Students who have satisfactorily completed EDP 310 and EDP 311 are not permitted to take EDP 610. Instead, they should take an additional elective in special education.

Sixth-Year Professional Certificate in Education Supervision and Administration
Program Coordinator: Professor David S. Seeley
Education Building (3S), room 220
Email: Seeley@postbox.csi.cuny.edu
Telephone: (718)982-3735

The program is designed to prepare qualified candidates for leadership positions in schools in New York City and the metropolitan area. Upon successful completion of the program, students will have met the academic requirements of the New York State Department of Education for certification as School Administrator and Supervisor.

Admission Requirements
1. A master's degree with a minimum average of 3.0 (B).
2. Evidence of four-years teaching experience in an accredited school or equivalent.
3. Professional recommendations (three).
4. An interview with faculty of the program.

Applications are accepted during the Spring for admission in the Summer session.

Degree Requirements
The program requires 30 credits of approved course work including: 23 credits in supervision, administration, curriculum, policy analysis, human relations; theory, research, and practice in educational leadership; four credits in a field experience seminar; and three credits in an appropriate graduate-level elective.

Courses
Alphabetical designation for education courses:
EDA - Supervision and Administration
EDC - Early Childhood Education
EDD - General Education
EDE - Childhood Education (Elementary Education)
EDP - Special Education
EDS - Adolescence Education (Secondary Education)

EDA

EDA 710 Curriculum Design and Development
3 hours; 3 credits
Principles of curriculum design and development; creation and maintenance of successful learning environments; the personal, social, cognitive, and demographic characteristics of school populations, and methods of evaluating and changing educational programs. Particular attention is given to curriculum issues, problems, and innovations for education in city schools.

EDA 720 Supervision and Improvement of Instruction in Elementary Schools Part I
3 hours; 3 credits

EDA 721 Supervision and Improvement of Instruction in Secondary Schools Part I
3 hours; 3 credits
Meaning, purpose, techniques, and organization of supervision in elementary and secondary schools; its relation to improvement of instruction and learning; evaluating teaching and creating programs for continuous professional growth of teachers in elementary and secondary schools.

EDA 722 Supervision and Improvement of Instruction in Elementary Schools Part II
3 hours; 3 credits
EDA 723  Supervision and Improvement of Instruction in Secondary Schools Part II  
3 hours; 3 credits  
Study of selected problems in supervision and curriculum improvement with emphasis on formulation of strategies, analytical skills, and evaluative procedures for the practicing supervisor in elementary and secondary education.

EDA 724  Organization and Administration of Elementary Schools Part I  
3 hours; 3 credits

EDA 725  Organization and Administration of Secondary Schools Part I  
3 hours; 3 credits
Introduction to theories and practices relating to the organization and administration of schools; administration is viewed as requiring the personal commitment of those who would lead schools in activities related to the assurance of an enlightened citizenry. The administrator’s responsibilities are studied in their political, social, and economic contexts. Topics emphasized also include organizational problems; the executive function; staff relationships; the administrator and students; analysis of challenges for educational administration in the City of New York.

EDA 726  Organization and Administration of Elementary Schools Part II  
3 hours; 3 credits

EDA 727  Organization and Administration of Secondary Schools Part II  
3 hours; 3 credits
Continued analysis of educational policy and administration in relation to local, state, and national conditions. Administration and leadership are studied in relation to student learning, the provision of school climates conducive to individual growth, community relationships, and the management of school resources.

EDA 728  Field Experience Seminar in Educational Supervision and Administration Part I  
2 hours; 2 credits

EDA 729  Field Experience Seminar in Educational Supervision and Administration Part II  
2 hours; 2 credits
Selected individual projects and problems in actual supervision and administration, with opportunities for the student to exercise a leadership role related to action research in the schools. The seminar also provides for sharing understandings with colleagues while assisting them in the implementation of action research findings in school programs.

EDA 730  Human Relations in Educational Supervision and Administration  
2 hours; 2 credits
Human and intergroup relations theory and practice applied to decision making, communication, personnel relationships, and other functions of educational leadership.

EDA 731  Research Seminar in Educational Supervision and Administration  
2 hours; 2 credits
Understanding and developing competence as a consumer in the use of research methods for studying issues and problems in educational policy, supervision, administration, curriculum development, and teaching.

EDA 732  Educational Leadership Part I  
2 hours; 2 credits

EDA 733  Educational Leadership Part II  
2 hours; 2 credits
A critical analysis of the responsibilities of educational leaders; the nature of educational leadership; integration of human relations and task oriented leadership; the crucial role of decision making in planning; instructional improvement; strategies for organizational change; ways to assure community understanding and involvement.

EDC

EDC 600  Contemporary Curriculum in Early Childhood Education  
3 hours; 3 credits
A study of controversial issues affecting early childhood programs, curriculum, and practice. Discussions of contemporary issues are placed within the context of the history of early childhood curriculum and curriculum theory. Emphasis is on enlarging and refining students’ thinking on issues that impact early childhood education.

EDC 601  Advanced Early Childhood Science and Mathematics Education  
3 hours; 3 credits
An integrated approach to teaching science and mathematics at the early childhood level, grades N-2.

EDD

EDD 602  Studies in Urban and Metropolitan Education  
3 hours; 3 credits
An examination of the growth of American cities and of the resulting educational changes for the children and youth of present-day urban areas. The status of immigrants and in migrants to the urban areas. Problems, resources, and promising programs of education in selected cities. This course meets the human relations requirement of the New York City schools.

EDD 606  History of Urban Education in the United States  
3 hours; 3 credits
Examination of major developments in American educational thought, practices, and organization as they occurred in the cities of the United States. Emphasis on the role of identity politics and material transformations in shaping the character of public schools. Contemporary efforts to reform urban education are placed in historical context. This course meets the human relations requirement of New York City Board of Education.
EDD 611  Advanced Educational Psychology
3 hours; 3 credits
This course is designed to acquaint the student with the broad scope of psychological investigations within the field of education. A critical analysis and evaluation of selected readings is intended to aid the student in interpreting professional literature.

EDD 612  Sociocultural Development During Childhood
3 hours; 3 credits
How a child becomes a member of a culture and the implications for development and schooling. A sociocultural perspective on child development will be used to achieve an understanding of children as members of their community and as participants in a world culture changing due to technology and popular culture. Discussion will move beyond research and theory to help students better understand the children in their classrooms.

EDD 613  Developmental Psychology: Childhood
3 hours; 3 credits
Psychological development of the child from birth to early adolescence, with emphasis on the cognitive, social, and emotional aspects of growth that play a major role in elementary school learning. Theoretical formulations and research findings will be related to situations and problems.

EDD 614  Developmental Psychology: Adolescence
3 hours; 3 credits
Psychological development from early to late adolescence with emphasis on those aspects of personal and social adjustment that influence school learning in middle schools and high schools. Theoretical formulations and research findings will be related to situations encountered in the class by teachers.

EDD 615  Comparative and International Education
3 hours; 3 credits
Comparison of educational philosophies and systems in the modern world.

EDD 616  The Idea of The Contemporary University
3 hours; 3 credits
Examination of the contemporary critique of higher education with particular focus on curriculum issues within the university and their connection with curriculum issues in the primary and secondary schools. The mission of the university is explored through the works of such thinkers as Michael Oakeshott, Alfred North Whitehead, Ortega y Gasset, and Martha Nussbaum in order to speculate on how their ideas inform our study. The course provides a forum for students to extend their understanding of the American university and its relationship to American society, especially lower educational institutions.

EDD 617  The Teacher and Curriculum Improvement
3 hours; 3 credits
Exploration of practices that improve the learning process. Examination of the role of the classroom teacher in planning classroom curriculum within the context of a specific school’s purpose, function, and structure. Use of the internet for curriculum development and delivery.

EDD 618  The School and its Community Relationships
3 hours; 3 credits
Examination of social forces affecting the school in American society. Socialization of the individual in the family, peer group, and community agency, in group educative processes, and in intergroup relations. Individual projects in testing general concepts through exploration of sociological phenomena in the local community.

EDD 619  Multiethnic Approaches to Teaching
3 hours; 3 credits
Examination of the role of race, gender, ethnicity, and class in education. Beginning with a self-assessment of the impact of these interconnected issues, students analyze learning environments, developing their own theoretical foundations for addressing race, gender, ethnicity, and social class in their classrooms. The course will focus the works of Paulo Freire, Henry Giroux, bell hooks, and Sandra Harding, among others. This course fulfills the human relations requirement of the New York City Board of Education.

EDD 620  Historical Themes and Interpretations
(Also HST 626)
3 hours; 3 credits
Examination of selected themes in world history, such as nationalism, globalization, minorities and society, religion and the state, and humans and their environment. Each semester the course will focus on the development of one theme, affording students the opportunity to deepen their interpretation through case studies, critical analysis of texts, museum work, and Internet research.

EDD 621  Historical Perspectives on Mathematics Topics
(Also MTH 627)
3 hours; 3 credits
An examination of the historical origins and contemporary applications of mathematics topics selected from areas such as arithmetical computation, number theory, cryptography, graph theory, geometry and probability. Emphasis upon exploration, analysis, and problem solving. Intended for teachers who wish to extend their own knowledge of mathematics and enhance classroom pedagogy. Prerequisites: Two courses in fundamentals of mathematics (equivalent to MTH/SLS 217 and 218)

EDD 622  Philosophy and Children
3 hours; 3 credits
Study of selected classics of Western philosophy. Creation of ways to bring philosophical issues, concerns, and practices into schools in forms accessible to students in grades K-12. Practice with community of inquiry teaching techniques.

EDD 623  Educational Seminar I
3 hours; 3 credits
Preparation for a student-inquiry involving the collection of data on the processes and conditions of learning including the identification of a topic, problem, or question for study and the investigation of relevant literature. Students complete a critical literature review and design a project to be executed in EDD 631.
EDD 631  Educational Seminar II  
3 hours; 3 credits  
Implementation of a student-initiated inquiry involving the collection of data on the processes or conditions of learning. The seminar serves as a forum to guide and assess students' progress on their project design from EDD 630. Students submit a formal written document and make an oral presentation, both of which critique relevant literature, analyze research findings, interpret the significance of the project, and consider its implications.  
Prerequisite: EDD 630

EDD 640  Social Impact of Technology  
3 hours; 3 credits  
Students develop a critical awareness of technology and its impacts on society, learn to evaluate technological developments in light of their outcomes, and gain a perspective regarding the future of technological developments in society.  
Prerequisites: CSC 102 or CSC 602

EDD 642  New Media of Instruction  
3 hours; 3 credits  
Students learn to apply new educational technology to enhance their own professional growth and productivity. They will use technology in communicating, collaborating, conducting research, decision making, and solving problems. Using the Internet as an educational resource and learning how to infuse technology in teaching and learning are the main goals of the course.  
Prerequisites: CSC 102 or CSC 602 or equivalent

EDE 620  Advanced Social Studies Education for Elementary School Teachers  
3 hours; 3 credits  
The place of the social studies in the elementary school curriculum. Development of units and other teaching and learning materials. Emphasis on creative learning in the social studies.

EDE 630  Advanced Science Education for Elementary School Teachers, 3-6  
3 hours; 3 credits  
Investigation of current curriculum improvement projects and new trends in elementary science education. Examination of conceptual schemes in the biological and physical sciences as they relate to the children's "doing" of science in grades 3 - 6.

EDE 631  Advanced Science in Early Childhood  
3 hours; 3 credits  
An intensive exploration of current theory in early childhood science education with particular emphasis on the transformation of theory into classroom experience. Current research studies and related literature will be utilized to provide a conceptual framework within which modern trends in the discipline may be viewed.

EDE 640  Advanced Mathematics Education for Elementary School Teachers, 3-6  
3 hours; 3 credits  
Examination of the conceptual structure in mathematics of the mathematics curricula for the elementary school in grades 3 - 6. Designed to assist the teacher in presenting these concepts, this course explores a variety of viewpoints concerning development and reinforcement of subject matter at successive levels.  
Prerequisite: at least two courses in mathematics at the 100 level or above.

EDE 642  Advanced Mathematics in Early Childhood Education  
3 hours; 3 credits  
Analysis of the conceptual structures in mathematics as applied to the area of early childhood education. Developed to aid the teacher in communicating modern concepts of mathematics to young children.

EDE 650  Advanced Study in Reading  
3 hours; 3 credits  
Examination of theories of oral and written language learning with a focus on models of literacy instruction for children at risk of reading failure. Review and evaluation of formal and informal assessments and teaching strategies for children from diverse language and cultural backgrounds and methods for addressing specific reading problems within a balanced reading program.

EDE 651  Integrated Strategies for Underachieving Readers  
3 hours; 3 credits  
Examination of the place of reading in the child's life. Use of reading techniques to acquire enjoyment, interest, information, and, especially, appreciation. Story-telling materials appropriate for children in nursery school and kindergarten. Interpretive and critical study of literature suitable for children of varied abilities and backgrounds in elementary grades. Introduction to promising practices of using children's literature in various fields.

EDE 652  Children's Literature  
3 hours; 3 credits  
Examinations of the place of reading in the child's life. Use of reading techniques to acquire enjoyment, interest, information, and, especially, appreciation. Story-telling materials appropriate for children in nursery school and kindergarten. Interpretive and critical study of literature suitable for children of varied abilities and backgrounds in elementary grades. Introduction to promising practices of using children's literature in various fields.

EDE 661  Music and Movement in Childhood Education  
3 hours; 3 credits  
An examination of theories and current methods in the teaching of music, movement, and dance in early childhood and elementary schools. Techniques of instruction and motivation to promote expressiveness, creativity, appreciation, and skill in music, movement, and dance. Studio experiences for students who want to develop their understanding and skill in teaching music and movement to children who are developing normally and to children with special needs.
EDE 662  Advanced Art
3 hours; 3 credits
An examination of theories and current methods in teaching art in early childhood and elementary schools. Techniques of instruction and motivation to promote expressiveness, creativity, appreciation, and skill in art. Studio experiences for students who want to develop their understanding and skill in teaching art to children who are developing normally and to children with special needs.

EDP

EDP 601  The Gifted Child in the Classroom
3 hours; 3 credits
Understanding gifted children and how to meet their educational needs.

EDP 602  Creative Arts in Special Education
3 hours; 3 credits
A workshop in a variety of expressive art media used in teaching children with various learning disabilities.

EDP 610  Psychology of Exceptional Children
3 hours; 3 credits
The psychological, educational, social, and communicative needs of exceptional children and theories of behaviorism and cognitive psychology as they relate to methods of instruction. All categories of exceptionality are covered, with emphasis on cultural and linguistic diversity. Students are required to spend ten hours in a variety of special education settings collaborating with teachers, parents, and professionals from multidisciplinary teams to broaden their experiences with the practices and services available to students with disabilities.
Corequisite: EDP 640

EDP 611  Social Foundations of Special Education
3 hours; 3 credits
The historical and legal background of special education, a sociological view of disability, and the current state of special education including issues confronting the field, such as inclusion, professionalism, and ethics. The course is designed to broaden students' understanding of the evolution of special education in the contexts of social, economic and political influences. Students are required to spend ten hours in a variety of special education settings collaborating with teachers, parents, and professionals from multidisciplinary teams to expand their understanding of the field of special education.
Prerequisite: EDP 610

EDP 615  Teaching Exceptional Adolescents
3 hours; 3 credits
The course is designed to provide teachers with the knowledge and competencies required to implement a variety of learning strategies and study skills for improving the literacy skills of adolescents with learning disabilities. Theories and research findings that support the effectiveness of a cognitive approach to literacy instruction, instructional procedures, and facilitation of the process in which the learner is engaged are major components of the course.
Prerequisites: EDP 610 and EDP 621

EDP 620  Teaching Exceptional Children with Severe and Low-Incidence Handicapping Conditions
3 hours; 3 credits
Methods, materials, and curriculum practices for teaching students with severe and low-incidence handicapping conditions. Adaptations and modifications for severely mentally retarded and emotionally disturbed persons will be discussed.
Pre- or corequisite: EDP 610 or equivalent

EDP 621  Teaching English Language Arts and Social Studies in Special Education and Inclusive Classrooms
3 hours; 3 credits
Examination of the learning and curricular needs of students with disabilities in English language arts and social studies. Emphasis is placed on students' acquisition of a knowledge base in these content areas and on effective methods of instruction. The cultural and linguistic diversity of students with disabilities is discussed in detail. Ten hours of fieldwork in varied educational environments provide additional experiences in teaching English language arts and social studies.
Pre- or corequisite: EDP 610

EDP 622  Classroom Management in Special Education and Inclusive Classrooms
3 hours; 3 credits
The behavioral and psychoeducational approaches as they apply to classroom management. Techniques that increase desirable behaviors and techniques that ameliorate maladaptive behaviors are covered in detail for populations including those with mild/moderate, severe, and multiple disabilities. Preventive techniques are emphasized for classrooms in which teachers need to accommodate students with diverse levels of functioning, as well as diverse cultural and linguistic backgrounds. Ten hours of fieldwork in one setting help students apply the techniques reviewed during class. This course satisfies the NYC Board of Education human relations requirement.
Prerequisite: EDP 610

EDP 623  Classroom Management in Special Education II: Practical Applications
3 hours; 3 credits
This course emphasizes the skills and competencies required to observe, define, interpret, and manage inappropriate behaviors effectively. Procedures and materials designed to facilitate positive changes in behavior will be discussed.
Prerequisites: EDP 610 and EDP 622

EDP 624  Reading: Assessment and Instruction in Special Education and Inclusive Classrooms
3 hours; 3 credits
Comprehensive coverage of the reading difficulties of students with disabilities. The informal assessment techniques discussed include traditional and alternative approaches. Students acquire the skills necessary to assess reading effectively and to connect assessment information to instruction. Ten hours of fieldwork in a variety of educational settings enhance students' experiences in diagnostic techniques and appropriate linkages to instruction.
Pre- or corequisites: course in teaching reading and EDP 610 or equivalents
EDP 625  Reading: Advanced Instructional Methods
3 hours; 3 credits
Advanced examination of current reading theories and instructional practices, with emphasis on improving the reading comprehension of students with disabilities. Students gain an in-depth understanding of the interactive nature of reading, the role of language development in reading acquisition, and the connections of language to students’ reading and writing difficulties. Issues addressed include developmentally appropriate instruction, cultural and linguistic diversity, and literature-based instruction. Ten hours of fieldwork in a variety of educational settings increase students’ knowledge of activities and techniques that enhance reading comprehension.
Prerequisites: EDP 610 and EDP 624

EDP 626  Principles of Assessment in Special Education
3 hours; 3 credits
Basic principles of measurement, diagnosis, and student evaluation, including domains of intelligence, achievement, language, and behavior. Formal and informal assessment techniques for classification and placement decisions are discussed. Authentic (performance-based) assessment techniques for instructional planning and ongoing assessment are also covered.
Prerequisite: EDP 610

EDP 627  Assessment for Instruction in Special Education and Inclusive Classrooms
3 hours; 3 credits
The development, administration, scoring, analysis, and interpretation of informal assessment techniques in the language arts and mathematics. Principles of curriculum-based assessment and criterion referenced testing are covered in detail with emphasis on the construction of teacher-made tests. Students develop skills in observing, recording, monitoring students’ progress, and planning instruction in the context of classroom curriculum.
Prerequisite: EDP 610

EDP 630  Practicum in Special Education
3 hours; 3 credits
Students broaden their teaching and learning experiences within special education settings by completing 20 days or the equivalent of practicum experience. Students, supervised by faculty, will work with individual or groups of children with disabilities.
Prerequisites: EDP 610 and EDP 611

EDP 635  Primary Support Systems in Special Education and Inclusive Classrooms
3 hours; 3 credits
Teachers are assisted in understanding and addressing issues pertaining to the related service needs of exceptional children and youth and their families, with focuses on issues of assessment, placement, and provision of related services; identification and prevention of child abuse (sexual, physical, emotional, neglect); and substance abuse. Supportive therapies and other resources addressing the diverse needs of exceptional children are also addressed.
Prerequisite: EDP 610

EDP 640  Fundamentals of Research in Special Education
3 hours; 3 credits
This research-based course introduces students to various methods of inquiry that include principles of empirical research, basic statistical and measurement concepts, and criteria for evaluating published educational research studies. A proposal is developed which is the basis for the culminating research project which students complete in EDP 642.
Corequisite: EDP 610

EDP 642  Research Project in Special Education
3 hours; 3 credits
This course is the second half of the research sequence. To complete the research projects they began in EDP 640, students review and synthesize the literature, collect data, apply statistical methods for data analysis where appropriate, and discuss the implications of their findings. The flexible design of the course allows students to develop their projects, based on portfolios, curriculum design, or research reports that incorporate their understandings of the academic and social needs of students with disabilities, the field of special education, and issues inherent in inclusion. The final project represents the culminating experience of the program.
Prerequisites: EDP 621, EDP 622, EDP 624, EDP 640, and EDP 680

EDP 643  Internship in Special Education I
2 hours; 2 credits
This two-semester course emphasizes the philosophy, methods, and activities that reflect contemporary theories, research findings, and best practices in the field of special education, in group seminars or individual conferences. The fieldwork component will comprise internships with designated master teachers in special education classrooms. Faculty, master teacher, and graduate student will collaborate on various aspects of teaching and professional development.
Prerequisites: EDP 610, EDP 621, and EDP 622

EDP 644  Internship in Special Education II
1 hour; 1 credit
This second part of a two-semester course will emphasize philosophy, methods, and activities that reflect contemporary theories, research findings, and best practices in the field of special education in group seminars or individual conferences. The fieldwork component will comprise internships with designated master teachers in special education classrooms. Faculty, master teacher, and graduate student will collaborate on various aspects of teaching and professional development.
Prerequisite: EDP 643

This course is open only to graduate students who do not have two years teaching experience in a special education classroom. They will register for Part I, two credits, in the Spring semester and Part II, one credit, in the Fall Semester.
EDP 650  Special Education in the Early Childhood Years
3 hours; 3 credits
This course will emphasize the comparison of normal child development to the special developmental discrepancies of the child with handicapping conditions in such areas as cognitive, motor, language, social, and behavioral functioning. Techniques of assessment, diagnosis, and program planning will be discussed. Emphasis will also be placed upon the needs of the family of young exceptional children.
Prerequisites: Enrollment in a master's degree program in education or the Sixth-Year Certificate Program, and EDP 610

EDP 660  Teaching Students with Special Needs in the General Education Classroom
3 hours; 3 credits
This course prepares educators to provide for the individual special needs of students with learning and behavioral differences who are integrated into general education programs. The course includes exploration of instructional techniques applicable to all children, with special attention given to curricular adaptations necessary to modify instruction for pupils with special needs.

EDP 665  Transition: Career and Vocational Education in Special Education
3 hours; 3 credits
Discussion of the link between school preparation and the post-secondary needs of exceptional children, youth, and young adults, covering the full range of transition options including post-secondary study in colleges or universities or in vocational programs, and employment in supported or community based programs. Material will also be presented concerning independent living, recreational leisure activities, and life cycle needs.
Prerequisites: Admission to the Master's Degree program in Special Education, Elementary Education, or Secondary Education; or the Sixth-Year Professional Certificate in Administration and Supervision program
Pre- or corequisite: EDP 610

EDP 670  School Leadership in Special Education
3 hours; 3 credits
Designed to prepare administrators of special education programs to deal with legal mandates, pupil certification processes, program development and evaluation, personnel evaluation and inservice development, and parent/community issues.
Prerequisites: Acceptance of students with graduate status into the master's program in Special Education, completion of EDP 610, EDP 620, or EDP 621, or their equivalent

EDP 675  Issues in Bilingualism in Special Education and Inclusive Classrooms
3 hours; 3 credits
The purpose of this course is to enhance students' awareness and knowledge of the issues relating to cultural pluralism and multilingualism in the field of special education. This course will analyze the needs of individuals with disabilities for whom English is not a native language. Topics will include the identification and assessment of limited English proficient (LEP) children, the research concerning first and second language acquisition, strategies for the instruction of children from different cultures and with different language experience, and administrative difficulties in the implementation of special education programs for children who are not native speakers of English.
Prerequisites: Admission to the Master's Degree program in Special Education, Elementary Education, or Secondary Education; or the Sixth-Year Professional Certificate in Administration and Supervision program; EDD 630
Pre- or corequisite: EDP 610. Students need not be bilingual.

EDP 680  Integrating Technology in Math and Science Instruction in Special Education and Inclusive Classrooms
3 hours; 3 credits
Computer applications to the math and science curricula in special education and inclusive classrooms. Introduction to a variety of strategies and instructional techniques for using computers in teaching concepts in science and mathematics to children with learning and behavior problems. The use and evaluation of computer software programs and Internet resources to promote children's academic progress in mathematics and science are explored.
Prerequisite: Admission to the Master's Degree program in Special Education, Elementary Education, or Secondary Education, or to the Sixth-Year Certificate program in Education Supervision and Administration.
Pre- or corequisite: EDP 610

EDP 685  Perspectives on Normalization and Integration in Special Education
3 hours; 3 credits
The purpose of the course is to provide those involved in the education of individuals with special needs with an understanding of the philosophy of normalization and the cultural contexts within which this philosophy developed. The philosophy of normalizing the lives of individuals with disabilities originated in Denmark and was subsequently adopted in the United States. The course will address the implications of normalization on (1) the education and treatment of persons with disabilities, and (2) the relation of persons with disabilities to society at large. Students will specifically examine how the philosophy of normalization has been applied in Denmark and the United States, where it is embodied in the least restrictive environment principle of P.L. 94-142.
Prerequisite: EDP 610 or equivalent

EDS

EDS 654  Reading in the Content Areas
3 hours; 3 credits
Development of skills toward utilizing the reading process in content areas, the application of reading techniques as another approach to comprehension of subject matter, study of fundamental methods related to the reading process. (Not open to students who have had an undergraduate reading course.)

EDS 691  Advanced Studies in Teaching Secondary School Social Studies
3 hours; 3 credits
Guided individual and group study. Examination of the New York State curriculum in social studies along with testing requirements. Teaching techniques as they apply to effective instruction in the social studies will be emphasized. Review of relevant research.
EDS 692  Advanced Studies in Teaching Secondary School English
3 hours; 3 credits
An investigation of instructional strategies, curricula, research, and current issues related to the teaching of secondary school English.

EDS 693  Advanced Studies in Teaching Secondary School Mathematics
3 hours; 3 credits

EDS 694  Advanced Studies in Teaching Secondary School Science
3 hours; 3 credits
A comprehensive review of the teaching/learning process in secondary school science. Emphasis upon cognitive learning, teaching strategies, curricula, and developing science literacy.

Master of Arts in English (M.A.)
Program Coordinator: Professor Richard Currie
English, Speech, and World Literature; Modern Languages Building (2S), room 230
Email: Currie@postbox.csi.cuny.edu
Telephone: (718)982-3683

The program is designed for students who wish to enlarge their knowledge of English and American literature, to improve their critical skills in reading and in writing, and/or to improve their skills as teachers of writing. It is of interest to recent graduates, to older students who wish to resume their education, and to students and teachers preparing for certification in English or in adolescence (secondary) education.

Two options are offered, one with a concentration in literature and one with a concentration in rhetoric. Students electing the literature option will take at least five courses in literature; students electing the rhetoric option will take at least three courses in linguistics and the teaching of writing.

Thirty credits are required for the degree, seven four-credit courses and two credits of independent study awarded after passing the Master’s examination.

Admission Requirements
1. Bachelor of Arts degree from an accredited institution
2. At least 32 credits of undergraduate courses in English (excluding freshman composition)
3. A cumulative grade point average of 3.0 (B) or a grade point average of 3.0 (B) in English courses
The Graduate Record Examination is not required for admission.

Students may be admitted conditionally with the approval of the Coordinator of the English M.A. Program; their admission to be reviewed after completion of two courses.

Degree Requirements
1. A grade point average of 3.0 (B) in all course work
2. A grade of at least Pass (P) on the Master’s papers and Master’s Examination
3. Seven courses (28 credits) chosen from Literature or Rhetoric:
   Literature Option: seven courses (28 credits), including at least five courses in literature (700-level courses) which must include at least one course in English literature before 1800.
   Rhetoric Option: seven courses (28 credits), including three in linguistics and the teaching of writing (600-level courses) with the remainder in literature.
4. Two Master’s papers
   The two Master’s papers will be course papers. Candidates will choose them in consultation with their instructors and submit them to the Coordinator of the English M.A. Program. The papers will be read by two faculty members and graded Honors, Pass, or Fail. The first paper is to be submitted before enrolling in a fifth graduate course, the second before taking the Master’s Examination.
5. Master’s Examination
   The Master’s Examination is intended to provide candidates an opportunity for further reading and independent study and to test their ability to read, interpret, and synthesize. They will select three of their courses for this examination and will be expected to answer questions with reference to works both assigned in those courses and on the supplementary reading lists provided by their instructors. Candidates with the Rhetoric Option may elect linguistics and the teaching of writing for two of their three courses.
   The Master’s Examination is a three-hour written examination and is graded Honors, Pass, Fail. Credit for two hours of independent study will be awarded upon passing.
6. Honors
   To earn the degree with Honors, a grade point average of 3.5 and grades of Honors on the Master’s Examination and at least one of the Master’s papers are required.

The M.A. in English at CSI is not a research-oriented degree.

There is no foreign language requirement for the M.A. in English at CSI. Students planning to continue graduate studies beyond the M.A., however, should take note that most doctoral programs in English require a reading knowledge of at least two foreign languages, and the City University Graduate Center requires three, one ancient (Greek or Latin) and two modern.

Courses

Linguistics and the Teaching of Writing

ENG 630  Writing Across the Curriculum
4 hours; 4 credits
An introduction to the principal issues, both theoretical and practical, in writing across the curriculum. Topics for reading and discussion will include: models of the writing process; kinds of writing; writing for learning and writing for testing; teaching English and teaching in the content areas. The class will develop a series of writing assignments in content areas useful to its members.
ENG 640  Workshop in Creative Writing
4 hours; 4 credits
The particular genre will be announced each semester: poetry, fiction, playwriting, or creative non-fiction. Discussion of writing processes and problems arising from the experience of the class. Although reading material will primarily be the work of the class, there will be some attention to the theory and practice of professional writers.

ENG 650  Workshop in Writing About Literature
4 hours; 4 credits
Extensive practice in writing about literature in conjunction with readings in several major works and writing about them. Discussion of major approaches to writing about literature such as the historical, the biographical, the psychological, the formalistic, the archetypal, and the philosophic.

ENG 670  Workshop in Autobiographical Writing
4 hours; 4 credits
Extensive practice in autobiographical writing in conjunction with readings in autobiography. Discussion of issues arising from the experience of the class as well as relationships among fact and value, reality and imagination, historical circumstance and myth.

ENG 680  Contemporary American Usage
4 hours; 4 credits
The study of standard American practice with regard to grammar, punctuation, quotations, bibliography, footnotes, and proofreaders' marks.

ENG 682  Modern English Grammar
4 hours; 4 credits
A generative-transformational analysis of the English sentence and a normative approach to contemporary usage. An introduction to sentence diagramming according to the principles of generative grammar with attention to deep and surface structure and semantic features. Traditional grammar is reformulated in transformational terms and usage is taught with reference to generative theory.

ENG 683  Sociolinguistics
4 hours; 4 credits
The interaction of language with region, class, sex, and nationalism. Special consideration is given to Black English, urban dialects, and educational policy. An exploration of regional and class dialects, the reactions to them, and the historical reasons for their development. The differences between male and female speech as well as the different ways language refers to sex are considered. The debate over bidialectism in the schools is reviewed as well as the role of language in nationalism and questions of language policy in developing countries.

ENG 686  The Teaching of Writing
4 hours; 4 credits
An introduction to the principal issues, both theoretical and practical, in the teaching of writing. Topics such as the following will be approached through readings in the literature and class scrutiny of the participants' own experiences as writers: relations between speech and writing, models of the writing process; standard English, bilingualism, and bidialectism; special problems of English usage and orthography; strategies for overcoming blocks and interferences; evaluation of growth in writing.

ENG 687  Models of Second Language Acquisition
4 hours; 4 credits
This course presents various models of second language acquisition, including the monitor model, interlanguage theory, linguistic universals, and sociocultural models. Public policy issues, such as English only, bilingual education, and immigration, are also explored. In addition, factors that may interfere with second language learning and those that may enhance it are studied. Contrasts are made between learning ESL as a child and as an adult with special reference to the critical period hypothesis.
Prerequisite: Graduate students only

ENG 688  Composition Theory and Rhetorical Models
4 hours; 4 credits
Focus on recent developments which have brought new theories of writing and new methods of teaching to English classes. Among the schools of thought and research communities explored are expressivism, cognitivism, social-epistemic rhetoric, cultural studies, and critical pedagogy.
Prerequisite: Graduate students only

ENG 689  Studies in Composition and Rhetoric
4 hours; 4 credits
An in-depth study of single subjects in composition theory and contemporary rhetoric. Possible subjects could include: an in-depth study of a single paradigm; a study of a major figure in the field; an examination of a research methodology; an exploration of assessment models; an in-depth reading of a current controversy.
Prerequisite: Graduate students only

Literature

ENG 719  Studies in Anglo-Saxon Literature

ENG 721  Studies in Medieval English Literature

ENG 722  Studies in the Literature of the English Renaissance

ENG 723  Studies in Restoration and 18th-Century English Literature

ENG 724  Studies in 19th-Century English Literature

ENG 725  Studies in 20th-Century English Literature

ENG 726  Studies in Shakespeare

ENG 727  Studies in American Literature before 1900

ENG 728  Studies in American Literature after 1900

ENG 729  Studies in Classical and Biblical Backgrounds to Literature

ENG 730  Studies in Modern World Literature

ENG 731  Studies in Drama

ENG 732  Studies in Fiction
Environmental Science (M.S.)

Master of Science in Environmental Science (M.S.)

Program Coordinator: Professor Alfred Levine
Biological Sciences; Chemical Sciences Building (6S), room 310
Email: Levine@postbox.csi.cuny.edu
Telephone: (718)892-3920

The program is designed to provide broad interdisciplinary training in those areas of the biological, engineering, physical, chemical, and social sciences that are important in solving environmental problems. Graduates are prepared for careers in both governmental agencies and private companies working on such problems as pollution control, environmental impact, and urban planning, and for careers in environmental education. The College has extensive, modern laboratories and computer facilities.

Admission Requirements

1. An acceptable bachelor’s degree from an institution whose degree requirements are substantially equivalent to those of the College of Staten Island or other senior units of the City University of New York. Ordinarily, this would be a bachelor’s degree in a natural science or in engineering.
2. An overall average of B minus, or the equivalent, in undergraduate work and an average of B, or the equivalent, in undergraduate science and engineering courses. The undergraduate credits must include at least one year each of general chemistry and general physics, mathematics through differential and integral calculus, and at least one semester of ecology. Candidates who are deficient in one or more of these requirements may be accepted on the expectation that they will make up the deficiency without receiving graduate credit for it.
3. An interview with faculty of the graduate program.
4. The applicant is ordinarily required to submit the results of the General Aptitude Test of the Graduate Record Examination. Applicants should apply directly to the Educational Testing Service, Box 955, Princeton, New Jersey 08540, to take the tests. Applicants should take these examinations no later than February for fall admission and July for spring admission.

Degree Requirements

Thirty credits in approved courses with an average of at least 3.0 (B). The courses normally include The Biosphere and our Species, Community Ecology, Earth Science, Applied Environmental Science, one course from an approved list of graduate courses in the social sciences, and a thesis project for a minimum of three to a maximum of six credits. The remaining 12 credits are chosen so that the concentration will be in either environmental biology or applied environmental science. Courses may be chosen from environmental science and social science courses at the College or from appropriate courses offered in graduate programs in the City University Graduate School and University Center.

Courses

ESC 601 The Biosphere and Our Species
3 hours; 3 credits
A required course that covers the structure and function of the biospheric ecosystem on the planet Earth, and the impacts of our species upon it in terms of ecology, resource use and exploitation, sociopolitical aspects, economics, environmental ethics, and related topics. (Also creditable toward biology requirements.)
Prerequisite: Ecology

ESC 702 Community Ecology
3 hours; 3 credits
Function and integration of natural communities and ecosystems: trophic structure, energy flow, species diversity and dominance, stability and resilience, interspecific interactions. Selected topics from the current literature. (Also creditable toward biology requirements.)
Prerequisite: Ecology

ESC 703 Earth Science
3 hours; 3 credits
Ecological significance of physical geology and geochemistry: tectonics, pedogenesis, erosion and deposition. The hydrologic cycle; ground-water geology and pollution. Weather and climate; the general circulation; climatic geography; dynamics of fronts and traveling weather systems.
Prerequisites: Calculus, Physics

ESC 704 Applied Environmental Science
3 hours; 3 credits
Prerequisite: Calculus

ESC 710 Instrumentation for Chemical Analysis
6 laboratory hours; 3 credits
Lecture and laboratory work covering theories and applications of modern approaches to chemical analysis. Equal emphasis will be placed on physical theory and design and chemical theory and procedure. Topics include optometric and electrometric methods, magnetic resonances, radioactivity, and separation techniques applicable to analysis of environmental pollutants.

ESC 721 Methods in Environmental Analysis
6 laboratory hours; 3 credits
Collection and analysis of water, air, and soil samples in local terrestrial and aquatic habitats. Various sampling methodologies will be used in the field to collect data which will be analyzed and tested statistically. Prerequisites: Ecology, ESC 702 and 732, or permission of the instructor
ESC 722  Marine Ecology
(Also BIO 722)
3 hours; 3 credits
Field-oriented study of estuarine and pelagic ecosystems. This course will emphasize how spatial and temporal scales are critically important in the study of marine organisms. Students will learn specialized sampling and analytical techniques necessary for the study of marine systems. Topics will include comparisons of “rate-based” versus “abundance-based” studies of population dynamics plus comparisons of individual, population and community levels of analysis. Prerequisite: BIO 360 or equivalent

ESC 724  Computer Simulation of Environmental Systems
3 hours; 3 credits
The development and construction of mathematical models, defining pollution parameters and quality criteria, analog, digital and hybrid techniques in environmental systems simulation studies. Case studies for model verification; control policies based on simulations. (Also creditable toward biology requirements.) Prerequisite: A knowledge of digital computer programming

ESC 725  Energy Sources and the Environment
3 hours; 3 credits
The environmental impact of present and future sources of power. Methods of power production and distribution; analysis of energy resources; pollution associated with energy conversion; effect of man-made energy systems on the energetics of ecological systems.

ESC 726  Transportation Systems
3 hours; 3 credits
Urban travel characteristics and needs determined by origin-destination surveys, population and economic factors, and land use. Traffic-study techniques for obtaining data on speeds, travel times, delays, and volumes. Capacity analysis for freeways, city streets, air corridors, bus lanes, and railroads. Criteria considered in selection of the “optimum” transportation plan. Presentation of current advances in the state of the art.

ESC 731  Behavioral Ecology
3 hours; 3 credits
The role of behavior in the dynamics of populations; social behavior, the reproductive function of pheromones and hormones, mate selection, species isolating mechanisms, habitat selection, orientation and navigation. Laboratory and field evidence will be discussed. (Also creditable toward biology requirements.) Prerequisite: BIO 330 or equivalent

ESC 732  Population Ecology
3 hours; 3 credits
Ecological basis of fitness in natural populations; theory of evolution in stable and changing environments; genetic aspects of interactions between species; population dynamics and regulation; life tables. Case histories. (Also creditable toward biology requirements.) Prerequisites: Genetics and Ecology

ESC 734  Chemical Ecology
3 hours; 3 credits
The role of secondary metabolites in ecological interactions within and among species. Allelopathy; defense mechanism; chemical co-evolution and the organization of natural communities. (Also creditable toward biology requirements.) Prerequisites: Any two of the following: Ecology, Behavioral Biology, Organic Chemistry

ESC 735  Biogeography
3 hours; 3 credits
Distribution of biomes of the world. Impact of geologic and climate change on the ranges of plants and animals. Experimental biogeography; models of colonization and insular evolution; effects of man on regional biota. (Also creditable toward biology requirements.) Prerequisites: Any two of the following: Ecology, Evolution, historical geology, or college geography

ESC 736  Systems Ecology
3 hours; 3 credits
Systems approach to energy flow, biogeochemical cycles, and resource management: systems measurement, description, analysis, and simulation modeling. Examination of systems studies in current literature. (Also creditable toward biology requirements.) Prerequisites: Ecology, Calculus, Statistics, and CSC 270 or equivalent or permission of the instructor

ESC 740  Experimental Design and Analysis
3 hours; 3 credits
Statistical analysis of research and survey data with emphasis on the design of experiments, regression analysis, and analysis of variance. Prerequisites: Introductory Statistics, Biometrics, or equivalent

ESC 743  Cellular Toxicology
(Also BIO 743)
4 hours; 4 credits
Toxicology is the overview of the mechanisms by which exogenous agents produce deleterious effects in biological systems. An overview of the sensitive analytical techniques that have facilitated studies on the metabolism and biotransformation of xenobiotics and have contributed to interpretation of the biological and toxicological effects of xenobiotics will be presented. Since the action of toxins is ultimately exerted at the cellular level, emphasis will be placed on the description of representative model cell systems that play an important role in the identification and assessment of potential environmental hazards. A variety of prokaryotic and eukaryotic cell systems are currently in use for the study of different toxic effects including cytotoxicity, genotoxicity, and mutagenesis. Prerequisites: CHM 256, BIO 314, BIO 352 or equivalent

ESC 748  Environmental Chemistry
3 hours; 3 credits
The science of chemical phenomena involving the nature, reactions and transport of natural and anthropogenic chemicals in the natural environment, including the lithosphere, hydrosphere, and atmosphere. The interaction between chemical species, and the effects of the physical environment, and the role of microorganisms. Specific emphasis on pollutants and hazardous wastes. Prerequisite: General Chemistry
ESC 751  Microclimate and Air Pollution
3 hours; 3 credits
Topographic, vegetational, and human impact on local climates. Properties and biological implications of the active surface. Pollution as part of a meteorological system; the urban heat island, environmental photochemistry. (Also creditable toward biology requirements.)

ESC 760  Epidemiology
3 hours; 3 credits
The study of health and disease through analysis of geographical and temporal patterns of health risks and disease, and of the populations affected. Demographic (mortality and morbidity) and epidemiological (clinical, community, cohort, and case-control) studies. Statistical analyses and designs. Determination of biological inference and risk. Pre- or co-requisite: ESC 740, or permission of the instructor

ESC 752  Soils and Geohydrology
3 hours; 3 credits

ESC 799  Thesis Research
Hours and credits vary; maximum 6 credits
This course may be repeated. No student may apply more than a total of six credits of Thesis Research toward the degree.

ESC 891 (1 credit), ESC 892 (2 credits), ESC 893 (3 credits), ESC 894 (4 credits)  Graduate Independent Study in Environmental Science

Master of Arts in History (M.A.)
Program Coordinator: Associate Professor Stephen Stearns
History; Political Science, Economics, and Philosophy Building, (2N), room 208
Email: Pandulo@postbox.csi.cuny.edu
Telephone: (718)982-2873

The past, like the sea, has its mysteries. For students drawn to explore them, the master's degree in history at the College of Staten Island provides opportunities for personal growth and career development. The program meets the highest intellectual and professional standards of the historical discipline, offering training in the analytic and communications skills demanded by all the professions.

Whether graduate students are interested in the master's degree to satisfy curiosity about the past, or as a preliminary step toward doctoral study, they will benefit from an explanation of the histories of Africa, Asia, Europe, and North and South America; they also will learn to recognize historical questions and to apply the methods historians have developed to analyze and describe critical human events.

The program is particularly suited to teachers in the social sciences with initial certification, who can deepen their knowledge of history as they complete the master's degree qualification demanded for professional certification. Careers in cultural institutions are also open to students with the professional training in historical research provided by the master's program.

Graduates of the master's program in history at the College of Staten Island will acquire an overview of global history and a thorough knowledge of a geographic area of specialization. The curriculum requires course work distributed across four of the department's five fields of concentration: History of Africa and the Middle East, History of Asia, History of Europe, History of Latin America and the Caribbean, and History of the United States. Students will explore one of these areas in depth, and will complete a significant work of historical scholarship, either a master's thesis under the supervision of a thesis director, or a research project tailored to the student's specific professional interests under the supervision of a research director. Students desiring recommendation for doctoral work will demonstrate competence in at least one foreign language.

Admission Requirements:
For matriculated status:
1. Satisfactory completion of a bachelor's degree from an accredited college and a cumulative grade point average of at least 3.0. Students not meeting this requirement will be evaluated after an interview with the Program Coordinator and the admissions committee.
2. A superior record of accomplishment in undergraduate history courses, with at least a 3.0 average in these courses. Students not meeting this requirement will be evaluated after an interview with the Program Coordinator and the admissions committee.
3. Two letters of recommendation from teachers.
4. Students will be required to take the graduate records examination (GRE).

Non-matriculated graduate students and graduate students in the education program, at the discretion of the Program Coordinator, may enroll in the program's offerings on a space-available basis after program students have been accommodated.

Master's students may not take undergraduate courses for degree credit. Undergraduate students may, with the permission of the Program Coordinator, take graduate courses for credit toward their undergraduate degree or the master's degree.

Retention Requirements
Students must have a minimum grade-point-average of 3.0 to be retained in a graduate program. Adhering to a two-year course of studies requires considerably more effort and dedication than one conducted over a prolonged and indeterminate period of time, so the department will make every effort to help students maintain this schedule. It should be noted, however, that courses are scheduled on a rotating basis over a two-year period. When individual students are unable to complete two courses during a semester, they will have the chance to maintain their standing by taking a summer school course or an extra course the following semester. They will also, with permission of the Program Coordinator, be able to take courses in the master's programs at the other CUNY colleges.
Degree Requirements

The M.A. in History requires 32 graduate credits, with all graduate courses designated at four credits, for a total of eight courses. Students must take at least one course in each of four of the program's five areas of concentration, the Historical Methods course, and either the thesis option or the project option.

Areas of concentration
- History of Africa and the Middle East
- History of Asia
- History of Europe
- History of Latin America and the Caribbean
- History of the United States

Thesis Option

Students in their third semester will take a single four-credit thesis seminar, with an additional four credits granted during the fourth semester for a thesis tutorial.

a. In the thesis seminar students will develop the topic of their thesis, begin research, and receive instruction in research methodology and historical writing. Thesis students will choose a thesis director and a second reader from the department faculty.

b. The thesis director will continue to supervise the thesis student during the fourth semester in a thesis tutorial. The thesis will be accepted in partial completion of the degree when it is defended before the thesis director and second reader, has been signed, and has been deposited in the department's archives.

Project Option

Students will take a four-credit project seminar their last semester, with the final research paper to be presented as a lecture to the seminar.

a. In the project seminar students will identify an historical area of particular interest, demonstrate their knowledge of that area, assemble and analyze historical materials, investigate methods (including multi-media technology) for presenting their findings, and will finally present the results of their work in a written report and a lecture that demonstrates expert competence in understanding and presentation.

b. High school teachers will be encouraged to relate their projects to the history curriculum of the secondary schools.

Courses

HST 701 Historical Method
4 hours, 4 credits
This course presents an advanced study of the philosophy and method of historical research, with particular attention to writing and teaching history. While intended to familiarize students with the traditions and current practice of the historical profession, the course will also acquaint students with specific problems in historical research reflected in the publications of the seminar instructor.

Courses in the areas of concentration:

HST 704 Topics in the History of Africa
4 hours, 4 credits
This course examines the history of Africa. Topics in the History of Africa will cover such issues as slavery in African societies, ethnicity, class, and power in twentieth-century Africa; Africa in the post cold war era.

HST 708 Topics in the History of the Middle East
4 hours, 4 credits
This course examines the history of the Middle East. Topics in the History of the Middle East will feature such issues as women and gender in Islam; the historiography of the Middle East; and the Middle East through literature and film. The approach will be predominantly historical, but perspectives from the different social sciences will deepen the analysis.

HST 710 Topics in the History of South Asia
4 hours, 4 credits
This course covers important issues in South Asian history. Topics in South Asian History presents an examination of aspects of the social, political, and cultural history of India from the Mauryan to the Gupta periods, and Islamic rule from the Sultanate of Delhi to the Mughal period; Modern South Asia; a study of British imperial rule in South Asia and the development of India, Pakistan, Sri Lanka, and Bangladesh since independence.

HST 711 Topics in the History of East Asia
4 hours, 4 credits
This course covers important issues in East Asian history. Topics in East Asian history explored are: the Chinese empire, covering the rise and evolution of the Chinese imperium; classical thought and religion, covering main philosophical schools, religions and popular cults and sects; Sinic World covering the spread of Chinese civilization to the rest of East Asia and its transformation; Tokugawa/Qing societies and economies; rebellion and revolution in nineteenth- and twentieth-century Asia, post-war East Asian economic development, examining the economic “miracle” and its causes.

HST 716 Topics in European History to the Renaissance
4 hours, 4 credits
This course examines important themes in the early history of Europe. The course will require students to analyze issues in social, political, religious, and intellectual history through the use of primary and secondary sources. Topics in European History to the Renaissance may include: medieval urban history, medieval religious history, Byzantine history, early Germanic Europe, the Crusades, and the rise of the Ottoman empire in Eastern Europe.

HST 717 Topics in European History from the Renaissance
4 hours, 4 credits
This course examines important themes in the history of Europe from the time of the Renaissance. The course will require student to analyze issues in social, political, religious, and intellectual history through the use of primary and secondary sources. Topics in European History from the Renaissance may include: the European Renaissance, the
Reformation and Counter Reformation, the English civil wars, the French Revolution, the Industrial Revolution, the Russian Revolution and world communism, the world wars; the post-war synthesis and the European union.

HST 720  Topics in Latin American History
4 hours, 4 credits
This course covers important issues in the early and later history of Latin America. Topics in Latin American History may include a study of the Iberian discovery of America and the conquest of the native peoples from 1492 to 1650; the role of the Catholic church in the Hispanicization of Iberian America; the Latin American wars of independence; reform and revolution in Latin America; race in Latin America; the twentieth-century Latin revolutions; US-Latin American relations; and Cuban reform and revolution.

HST 722  Topics in Caribbean History
4 hours, 4 credits
This course will focus on the period from Columbus’ arrival in the Caribbean to the abolition of slavery in the nineteenth century. Among the topics that may be examined: the pre-Hispanic Caribbean; Spanish contact with the Arawaks and Caribs; settlement and colonies; the Atlantic slave trade; “King Sugar”; the world of Europeans and Europeans in the Caribbean; the world of slaves; free persons of color; the Haitian Revolution; metapole-directed abolitionism; the Morant Bay Revolt; the emergence of Cuban nationalism.

HST 725  Topics in US History to 1865
4 hours, 4 credits
This course covers the period of colonial American history until the Civil War era. Important topics in the early history of the United States will be explored. These may include a selection of the following: racial encounters in the New World; the environmental history of the United States; the intellectual and cultural history of the American nation; colonial American history; the American Revolution and the early republic; Jacksonian America and the Civil War era.

HST 726  Topics in US History since 1865
4 hours, 4 credits
This course covers the period of US history that begins with Reconstruction and moves forward to contemporary issues. Important topics in the history of the United States will be explored. These may include a selection of the following: Reconstruction, Gilded Age, and Progressive history; the history of American wars; the diplomatic history of the United States; American biography; America’s encounter with communism; the history of women in America; the history of the American west; American popular culture.

Options:

Thesis and Project courses

HST 797  Project Seminar
4 hours, 4 credits
Students who have selected the project option will take the Project Seminar in the last semester, with the final research paper to be presented as a lecture to the seminar. In the project seminar students will identify an historical area of particular interest, demonstrate their knowledge of that area, assemble and analyze historical materials, investigate methods (including multi-media technology) for presenting their findings, and will finally present the results of their work in a written report and a lecture that demonstrates expert competence in understanding and presentation.

High school teachers will be encouraged to relate their projects to the history curriculum of the secondary schools.

HST 798  Thesis Seminar
4 hours, 4 credits
Students in their third semester, who have selected the thesis option, will enroll in the Thesis Seminar, to be followed by the Thesis Tutorial in the fourth semester. In the Thesis Seminar, students will develop the topic of their thesis, begin research, and receive instruction in research methodology and historical writing. Thesis students will choose a thesis director and a second reader from the department faculty.

HST 799  Thesis Tutorial
4 hours, 4 credits
The thesis director will continue to supervise the thesis student during the fourth semester in a thesis tutorial. The thesis will be accepted in partial completion of the degree when it is defended before the thesis director and second reader, has been signed, and has been deposited in the department’s archives.
than 3.0 may be considered following an interview with the Program Coordinator of the Master of Arts in Liberal Studies. Applicants are accepted for Fall semester admissions.

Degree Requirements
To receive the Master of Arts degree in Liberal Studies students must complete the following requirements:

1. All courses must be completed with a cumulative grade point average of at least 3.0 (B). The courses are LBS 710, 720, 730, 740, 750, 760, 770, 780, and electives, totaling 30 credits.

2. Students must complete a Master's Essay which will be an extended reflection on a problem of contemporary social and/or cultural interest drawing on the intellectual tradition of the liberal arts and on the student's own values and analysis. The completed essay must be judged acceptable by the student's Master's Essay adviser and by the coordinator of the Master of Arts in Liberal Studies Program.

Courses

LBS 710  Roots of Modern Culture
3 hours; 3 credits
Consideration of the artistic and literary traditions inherited from the Renaissance and the significant classical revivals of the seventeenth and eighteenth centuries in order to identify and assess those divergent aesthetic movements in the nineteenth and early twentieth century that gave rise to modernism. An effort will be made to place works discussed in their fullest artistic, literary, philosophic, scientific, and historical context.

LBS 720  Roots of Modern Society
3 hours; 3 credits
An exploration of the transition of the Western world from an agrarian, rural society to an urban, industrial-technological society; and the accompanying changes in economic and political structure and social values through a study of selected works written during this period concerned with social, scientific, philosophic, and political analysis and theory.

LBS 730  Modern Culture
3 hours; 3 credits
An analysis of selected works of twentieth-century Western literature and art designed to provide an introduction to major movements in the cultural life of this century and an introduction to the analysis of individual creative works seen in the context of modern social and intellectual movements and modern scientific and philosophic thought.
Prerequisite: LBS 710

LBS 740  Modern Society
3 hours; 3 credits
An analysis of social movements such as liberalism, communism, socialism, nationalism, and fascism; an introduction to modern social structure and change; and the role of social theory studied through the analysis of individual works of social theory and commentary placed in their historical and intellectual setting. The relevance of the theories and commentaries read to contemporary social problems and movements will be discussed. Attention will be paid to the impact of science and technology on modern social thought and living conditions.
Prerequisite: LBS 720

LBS 750  Interaction of Western and Non-Western Societies
3 hours; 3 credits
An introduction to the structure and values of a selected non-Western civilization and a study of the cross-cultural impact of Western expansion since 1500. A variety of sources will be used such as fiction, anthropological studies, historical journals, traveler's accounts, and works of art.
Prerequisite: LBS 730 or 740

LBS 760  Ancient Roots of Modern Thought
3 hours; 3 credits
A study of key works of ancient and medieval thought chosen from figures or works such as the Bible, Thucydides, Plato, Aristotle, Sophocles, Virgil, Cicero, Augustine, Aquinas, and Dante. The emphasis will be on an understanding of the works and their relationship to the intellectual tradition of the Western world as studied in the previous courses.
Prerequisite: LBS 730 or 740

LBS 770  Seminar: Values and Contemporary Issues
3 hours; 3 credits
A seminar in which the instructor and the students assist in developing ideas about topics of contemporary social and cultural concern which have been chosen by the students as subjects of their Master's Essay. Each student must have chosen a topic before the beginning of the seminar. In the seminar the instructor and students draw on the works read and discussed in the previous courses in the program to illuminate the topics of the essays. Drafts of portions of student essays are discussed.
Prerequisites: LBS 730, 740, 750, 760 and permission of the MALS Program Coordinator
Corequisite: LBS 780

LBS 780  Master's Essay Tutorial
3 hours; 3 credits
A tutorial in which the student and Master's Essay adviser meet weekly to discuss drafts of and problems with the Master's Essay. Credit is awarded on successful completion of the Master's Essay and its acceptance by the essay adviser and program coordinator.
Prerequisite: Permission of the MALS Program Coordinator
Corequisite: LBS 770

Master of Science in Nursing, Adult Health (M.S.)
Program Coordinator: Professor Margaret Lunney
Marcus Hall (5S) - room 202
Email: Lunney@postbox.csi.cuny.edu
Telephone: (718)982-3845

The Adult Health Nursing program leading to the Master of Science degree is designed to meet health care workforce needs and to provide opportunities for graduate level education to baccalaureate nursing graduates. The program requirements are consistent with the competencies identified by the National Association of Clinical Nurse Specialists. Nurses who successfully complete the program are prepared to meet the needs of culturally diverse individuals, families, and communities and will have a competitive edge in the changing environment of health care. Restructuring of health organizations has created new roles for nurses, especially those who have master's level
preparation. These roles include expert clinician, educator, researcher, and manager. Graduates of the program are eligible for certification as specialists in medical-surgical nursing through the American Nurses Credentialing Center (ANCC) and other certifications offered by ANCC and nursing specialty organizations.

Admission Requirements
Applications will be evaluated on an individual basis when all official transcripts and supporting documents have been received. Applicants will be notified by mail regarding their acceptance. Enrollment with matriculated status is contingent upon satisfaction of admission criteria. Students are encouraged to enroll with non-matriculated status if they have not yet taken the Graduate Record Examination.

Advisement
Each student admitted to the program will be provided academic guidance and career support. The Program Coordinator will monitor and evaluate each student’s progress and recommend appropriate counseling and/or academic support services. The faculty member assigned to coordinate a clinical role practicum will collaborate with agency preceptors to guide students’ progress in clinical settings.

Degree Requirements
The program requires 42 credits with 450 supervised hours toward development of clinical competencies for specialty practice, and a thesis option. Students may attend on a full-time or part-time basis. Completion of the program requires a minimum of one and a half years of full-time study, or at least four years of part-time study. The requirements include a core of 15 credits, an advanced practice core of 9 credits, specialty courses of 12 credits, and electives of 6 credits. Three of the elective credits may satisfy the thesis option.

Graduate Core (15 credits)
- NRS 700 Transcultural Concepts and Issues in Health Care
- NRS 701 Theoretical Foundations for Advanced Practice Nursing
- NRS 705 Health Organizations, Policy, Financing, and Ethics
- NRS 710 Collaborative Research for Advanced Practice Nursing
- NRS 730 Research Utilization for Advanced Practice Nursing

Advance Practice Core (9 credits)
- BIO 670 Pathophysiological Concepts in Health and Illness
- BIO/ NRS 682 Advanced Pharmacology
- NRS 702 Advanced Health Assessment

Specialty Courses (12 credits)
- NRS 720 Advanced Practice Nursing with Adults in Community Settings
- NRS 721 Role Practicum: Adults in Community Settings
- NRS 722 Advanced Practice Nursing with Adults in Acute Care Settings
- NRS 723 Role Practicum: Adults in Acute Care Settings

Students complete 450 of supervised practice to ensure clinical competency in advanced practice nursing roles. These hours are recommended by the National Association of Clinical Nurse Specialists (NACNS) as preparation for certification.

Electives (6 credits)

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>BIO 670</td>
<td>Pathophysiological Concepts in Health and Illness</td>
</tr>
<tr>
<td>BIO 682</td>
<td>Advanced Pharmacology</td>
</tr>
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</table>

This course is designed to provide a critical understanding of physiologic concepts, issues, research, and theories. Representative topics are selected to provide a comprehensive basis for understanding physiologic functions in health and illness at the molecular, cellular, and systemic levels of organization. Ethical, moral, and cultural issues are addressed.

Prerequisites: BIO 150, BIO 160 or equivalent

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<tr>
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<tr>
<td>BIO 682</td>
<td>Advanced Pharmacology (Also NRS 682)</td>
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This course provides the knowledge and skills to assess, diagnose, prescribe, and guide the management of medication therapy of adults. Emphasis will be pharmacodynamics, pharmacokinetics, and pharmacotherapeutics to supplement previous learning. Critical thinking and research data will be the basis for determining appropriate medications for adults of varied ages, medical problems, and health practices.

Prerequisites: basic college-level pharmacology course and BIO 670

Non-Matriculated Status
Applicants with exceptional qualifications, but who do not meet all the admission requirements, may be granted admission with non-matriculated graduate status at the discretion of the Graduate Nursing Admissions Committee.

Requirements for Retention
Students must have a minimum grade-point-average (GPA) of 3.0 (B) to be retained in a graduate program. Students whose GPA falls below 3.0 are on probationary status.

Graduate Core (15 credits)
- NRS 700 Transcultural Concepts and Issues in Health Care
- NRS 701 Theoretical Foundations for Advanced Practice Nursing
- NRS 705 Health Organizations, Policy, Financing, and Ethics
- NRS 710 Collaborative Research for Advanced Practice Nursing
- NRS 730 Research Utilization for Advanced Practice Nursing

Advance Practice Core (9 credits)
- BIO 670 Pathophysiological Concepts in Health and Illness
- BIO/ NRS 682 Advanced Pharmacology
- NRS 702 Advanced Health Assessment

Specialty Courses (12 credits)
- NRS 720 Advanced Practice Nursing with Adults in Community Settings
- NRS 721 Role Practicum: Adults in Community Settings
- NRS 722 Advanced Practice Nursing with Adults in Acute Care Settings
- NRS 723 Role Practicum: Adults in Acute Care Settings

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Prerequisites: basic college-level pharmacology course and BIO 670

Admission Requirements
Applications will be evaluated on an individual basis when all official transcripts and supporting documents have been received. Applicants will be notified by mail regarding their acceptance. Enrollment with matriculated status is contingent upon satisfaction of admission criteria. Students are encouraged to enroll with non-matriculated status if they have not yet taken the Graduate Record Examination.

Applicants should have a bachelor’s degree with a major in nursing from an accredited school. A TOEFL score of 550 or higher is required for all students for whom English is a second language.

Matriculated Status
Admission requirements for fully matriculated graduate status:
1. Transcript(s) documenting a cumulative grade point average of 3.0 on a 4.0 point scale in the nursing major;
2. Evidence of successful completion of baccalaureate level courses in nursing research, statistics, and health assessment/physical examination with minimum grades of B (3.0);
3. Graduate Record Examination (GRE) taken within five years of application to the graduate program;
4. Two recommendation letters supporting the applicant’s potential for completing graduate studies; one must be from a current nursing supervisor or recent professor;
5. Personal statement describing career goals;
6. Current RN License to practice in New York State.

Non-Matriculated Status
Applicants with exceptional qualifications, but who do not meet all the admission requirements, may be granted admission with non-matriculated graduate status at the discretion of the Graduate Nursing Admissions Committee.

Requirements for Retention
Students must have a minimum grade-point-average (GPA) of 3.0 (B) to be retained in a graduate program. Students whose GPA falls below 3.0 are on probationary status.

Advisement
Each student admitted to the program will be provided academic guidance and career support. The Program Coordinator will monitor and evaluate each student’s progress and recommend appropriate counseling and/or academic support services. The faculty member assigned to coordinate a clinical role practicum will collaborate with agency preceptors to guide students’ progress in clinical settings.

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Prerequisites: basic college-level pharmacology course and BIO 670
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<tbody>
<tr>
<td>NRS 700</td>
<td>Transcultural Concepts and Issues in Health Care</td>
<td>3</td>
<td>3</td>
<td>This graduate course focuses on the general philosophy, ethics, concepts, skills, theory, research, and practices underlying transcultural care. Current issues in pluralism, diversity, and health care are explored in relation to culturally competent care of advanced practitioners in health care settings. Leininger’s Theory of Culture Care and other selected theories and research studies are critically appraised for utilization in various practice and management settings. Future directions of transcultural care are discussed. Prerequisite: matriculated or non-matriculated status in the graduate program</td>
</tr>
<tr>
<td>NRS 701</td>
<td>Theoretical Foundations for Advanced Practice Nursing</td>
<td>3</td>
<td>3</td>
<td>This course explores the theoretical basis of Advanced Practice Nursing through analysis of nursing’s extant models and theories that contribute to nursing’s unique body of knowledge. Emphasis is placed on nursing’s metaparadigm concepts; person-environment-health-nursing. The dialectical process between theory, research, and practice is examined. The value of theory-based practice including the sharing of knowledge with other disciplines is stressed as foundational for Advanced Practice Nursing. Prerequisite: matriculated or non-matriculated status in the graduate program</td>
</tr>
<tr>
<td>NRS 702</td>
<td>Advanced Health Assessment</td>
<td>4</td>
<td>3</td>
<td>This course prepares students to develop advanced competencies in health assessment (health histories and health examinations), to analyze data, and to make clinical decisions. Prerequisites: college-level course in health assessment/physical examination or the equivalent; matriculated or non-matriculated status in the graduate program</td>
</tr>
<tr>
<td>NRS 705</td>
<td>Health Organizations, Policy, Financing, and Ethics</td>
<td>3</td>
<td>3</td>
<td>This course synthesizes knowledge about health care systems as established social institutions. Emphasis will be on an examination of the health care delivery system, current issues in the policy arena, and trends associated with health care, including finance and resource allocation. Current legislative initiatives related to health care and the implications of these will be fully explored. Ethical issues will be a recurrent theme. Prerequisite: matriculated or non-matriculated status in the graduate program</td>
</tr>
<tr>
<td>NRS 710</td>
<td>Collaborative Research for Advanced Practice Nursing</td>
<td>3</td>
<td>3</td>
<td>This core course is designed to prepare the student to achieve intermediate proficiencies in the use of the research process and in the art of critique; and to function as a member of a collaborative research team. Representative topics are selected to provide a comprehensive basis for developing these proficiencies. A research proposal will be developed. Prerequisites: MTH 113 or equivalent, NRS 321 or equivalent Pre- or corequisites: NRS 700 and NRS 701</td>
</tr>
<tr>
<td>NRS 720</td>
<td>Advanced Practice Nursing with Adults in Community Settings</td>
<td>3</td>
<td>3</td>
<td>This course addresses integration of theory, research, and practice related to health promotion and disease prevention of healthy, chronically ill, and disabled adults, their families, and communities. Prerequisites: matriculated status in the program; NRS 702 and NRS 710 Corequisites: NRS 682, NRS 721</td>
</tr>
<tr>
<td>NRS 721</td>
<td>Role Practicum: Adults in Community Settings</td>
<td>12</td>
<td>3</td>
<td>This preceptored practicum course provides for application of theories and research to health promotion and disease prevention of healthy, chronically ill, and disabled adults from culturally diverse backgrounds, their families, and communities. Corequisite: NRS 720</td>
</tr>
<tr>
<td>NRS 722</td>
<td>Advanced Practice Nursing with Adults in Acute Care Settings</td>
<td>3</td>
<td>3</td>
<td>This course focuses on the caring and healing process in adults with acute illness and its impact on their families and communities. Theories of crisis, stress, and psychobiologic unity are integrated with advanced technology. Research findings related to acute care of adults are identified and synthesized. Students apply theories and research to their chosen subspecialization in adult health nursing. Prerequisites: matriculated status, NRS 702 Corequisites: NRS 682, NRS 723</td>
</tr>
<tr>
<td>NRS 723</td>
<td>Role Practicum: Adults in Acute Care Settings</td>
<td>12</td>
<td>3</td>
<td>A clinical course for the application of knowledge and skills related to nursing care of acutely ill adults from culturally diverse backgrounds. The selection of clinical placements varies according to the specializations of students in each group. Pre- or co-requisites: BIO 670, NRS 682, NRS 702 Corequisite: NRS 722</td>
</tr>
<tr>
<td>NRS 724</td>
<td>Case Management for Advanced Practice Nursing</td>
<td>3</td>
<td>3</td>
<td>Focus on responses of advanced practice nurses to a changing health care system, especially provision of high quality health care at minimal cost to populations with special needs. Proactive roles of nurses are emphasized for selection, implementation, and evaluation of interventions for targeted populations. As a case manager, the clinical nurse specialist uses clinical and technical expertise to develop standardized care processes, establish outcomes, identify variances, assess transitional levels of care, and act as an agent for planned change. Prerequisite: Matriculated or nonmatriculated status in the MS degree program or permission of the instructor.</td>
</tr>
</tbody>
</table>
| NRS 730    | Research Utilization for Advanced Practice Nursing      | 3     | 3       | This course is designed to assist students to develop intermediate skills in research utilization as it applies to adult health. Research utilization models, barriers to research utilization, evidenced-based practice,
statistical methods, and strategies for research utilization will be explored. Students will identify a particular practice problem and develop proposals to implement research findings into their chosen practice setting. The research utilization project is the capstone experience.

Prerequisite: NRS 710

NRS 799 Thesis Option
3 hours; 3 credits
The purpose of this seminar course is to individually guide students in applying the steps of the research process in actual settings. The process culminates in the presentation of findings as a written thesis. The course is graded Pass/Fail.
Prerequisites: NRS 710, matriculated status, permission of the program coordinator

Physical Therapy (B.S./M.S.)
Program Coordinator: Associate Professor Jeffrey Rothman
Physical Therapy Building (5N), room 219
Email: Rothmanj@postbox.csi.cuny.edu
Telephone: (718)982-3153

The combined Bachelor of Science/Master of Science degree program in Physical Therapy is designed to prepare graduates for entry-level positions as physical therapists. Upon successful completion of all the requirements, students will be awarded both degrees: the B.S./M.S. in Physical Therapy. The two degrees will be awarded concurrently. The Physical Therapy Program is accredited by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association.

Admission Requirements to the Professional Phase of the Program

There is no separate admission to the MS program in Physical Therapy. Students enroll in the graduate courses after they complete the baccalaureate sequence. Students must successfully complete the general education requirements and pre-major requirements with a minimum cumulative grade-point-average of 2.8 in the pre-major requirements to be considered for the program. Admission to the program is competitive and criteria for selection include the strength of the academic record (with particular emphasis on performance in science courses), written and oral communications skills, volunteer or work experience in physical therapy (minimum 100 hours), and recommendations.

Transfer students may apply, provided they have appropriate prerequisites.

Students are accepted into the professional program for enrollment in the Spring semester.

Retention Standards
Students must have a minimum grade point average (GPA) of 3.0 (B) to be retained in a graduate program. Students whose GPA falls below 3.0 are on probationary status. If a student has completed the number of credits required for both the graduate and undergraduate degrees and has less than a 3.0 average in the graduate phase (600-level courses or above), he/she may repeat no more than two 600-level or above courses (6-8 credits) in order to bring the average to 3.0. Written permission of the Program Coordinator is required. The specific courses to be taken must be approved in writing by the Program Coordinator.

Degree Requirements

Students must maintain an average of 3.0 (B) in the 41 credits of graduate courses for retention in the program.

General Education Requirements for the B.S.
ENG 111, ENG 151, COR 100, PED 190: 12 credits
Whenever possible, these four courses should be completed within the first 36 credits.

Scientific Analysis; Social Scientific Analysis; The West and the World; Textual, Aesthetic, and Linguistic Analysis; Pluralism and Diversity requirements: 21-27 credits
Whenever possible, these courses should be completed within the first 60 credits.
1. Scientific Analysis: (11 credits)
   a. Science and Technology: (8 credits)
   b. Mathematics: (3 credits)
2. Social Scientific Analysis: (3-4 credits)
3. The West and the World: (4 credits)
4. Textual, Aesthetic, and Linguistic Analysis: (3-4 credits)
   a. Literature: 200 level
   b. Arts and Communications: 100 level
   c. Arts and Communications: 200 level
5. Pluralism and Diversity Requirement: (0-4 credits)

See section on general education requirements in the undergraduate catalog for approved course lists and complete details.

Pre-Major Requirements: 37-39 credits

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>BIO 150</td>
<td>Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO 160</td>
<td>Human Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>CHM 141</td>
<td>General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHM 121</td>
<td>General Chemistry I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHM 142</td>
<td>General Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHM 127</td>
<td>General Chemistry II Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BIO 272</td>
<td>Biometrics</td>
<td>4</td>
</tr>
<tr>
<td>MTH 214</td>
<td>Applied Statistics Using Computers</td>
<td>3</td>
</tr>
<tr>
<td>MTH 123</td>
<td>College Algebra and Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>MTH 130</td>
<td>Pre-Calculus Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>PHY 116</td>
<td>Physics I</td>
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<td>PHY 156</td>
<td>Physics II</td>
<td>4</td>
</tr>
<tr>
<td>PSY 100</td>
<td>Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 242</td>
<td>Developmental Psychology</td>
<td>4</td>
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Major Requirements: 94 credits
53 undergraduate credits and 41 graduate credits

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<td>BIO 318</td>
<td>Histology</td>
<td>4</td>
</tr>
<tr>
<td>BIO 332</td>
<td>Advanced Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIO 342</td>
<td>Advanced Human Anatomy</td>
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<td>BIO 368</td>
<td>Neuroscience</td>
<td>4</td>
</tr>
<tr>
<td>BIO 382</td>
<td>Pharmacotherapeutics</td>
<td>3</td>
</tr>
<tr>
<td>BIO 432</td>
<td>Clinical Pathology</td>
<td>3</td>
</tr>
<tr>
<td>PHT 310</td>
<td>Health Promotion for Self and Society</td>
<td>3</td>
</tr>
<tr>
<td>PHT 200</td>
<td>Physical Therapy Praxis I: Basic Patient Skills</td>
<td>4</td>
</tr>
<tr>
<td>PHT 230</td>
<td>Biomechanics and Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>PHT 250</td>
<td>Physical Therapy Praxis II: Tests and Measurements</td>
<td>4</td>
</tr>
<tr>
<td>PHT 270</td>
<td>Clinical Practicum I</td>
<td>3</td>
</tr>
<tr>
<td>PHT 300</td>
<td>Physical Therapy Praxis III: Therapeutics Modalities</td>
<td>4</td>
</tr>
<tr>
<td>PHT 350</td>
<td>Physical Therapy Praxis IV: Cardiopulmonary Rehabilitation</td>
<td>4</td>
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<tr>
<td>PHT 370</td>
<td>Clinical Practicum II</td>
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<tr>
<td>PHT 405</td>
<td>Research Methodologies</td>
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<tr>
<td>PHT 600</td>
<td>Physical Therapy Praxis V: Orthopedic Evaluation and Treatment</td>
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<td>PHT 605</td>
<td>Research Design</td>
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<tr>
<td>PHT 606</td>
<td>Research Seminar I</td>
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<tr>
<td>PHT 608</td>
<td>Health Care Administration</td>
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<td>PHT 615</td>
<td>Interventions in Developmental Disabilities</td>
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<td>PHT 630</td>
<td>Pathokinesiology</td>
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<tr>
<td>PHT 631</td>
<td>Advanced Assessment of Human Motion</td>
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<tr>
<td>PHT 650</td>
<td>Physical Therapy Praxis VI: Neuromotor Facilitation</td>
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<tr>
<td>PHT 651</td>
<td>Physical Therapy Praxis VII: Current Topics in Rehabilitation</td>
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<tr>
<td>PHT 660</td>
<td>Advanced Topics in Physical Therapy</td>
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<tr>
<td>PHT 670</td>
<td>Clinical Practicum III</td>
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<tr>
<td>PHT 706</td>
<td>Research Seminar II</td>
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**Electives: 7-10 credits**

**Total Credits Required: 162**

### Courses

(For descriptions of undergraduate courses, not PHT, see undergraduate catalog. Graduate-level courses are numbered 600 and 700.)

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<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tr>
<td>PHT 200</td>
<td>Physical Therapy Praxis I: Basic Patient Skills</td>
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<td></td>
<td>3 class hours, 3 laboratory hours; 4 credits</td>
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<td>Examines the multifaceted role of the physical therapist in the health care delivery system. Introduces the student to basic clinical skills and problem-solving abilities which will serve as the foundation for future course work. Application of basic evaluation tools and intervention strategies introduced in lectures. Prerequisites: BIO 160, PHY 156 and acceptance into the PT program.</td>
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<tr>
<th>Course Code</th>
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<tr>
<td>PHT 230</td>
<td>Biomechanics and Kinesiology</td>
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<td>2 class hour, 3 laboratory hours; 3 credits</td>
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<td></td>
<td>This course provides an in depth study of the biomechanics and kinesiology of human motion. Examines the normal patterns in preparation for clinical assessment and integration. Prerequisites: BIO 332, BIO 342, PHT 200</td>
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<th>Course Code</th>
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<tr>
<td>PHT 250</td>
<td>Physical Therapy Praxis II: Tests and Measurements</td>
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<td>3 class hours, 3 laboratory hours; 4 credits</td>
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<td>Evaluation and clinical interventions related to therapeutic exercise techniques; includes goniometry, manual muscle testing, posture and gait assessment as they are adapted to pathokinesiological conditions and their relationship to specific exercise choices. History and evolution of therapeutic exercise leading to techniques for isolated and segmental manual exercises followed by multisegmental and full body integration methods. Prerequisites: PHT 200, PHT 230</td>
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<th>Course Code</th>
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<tr>
<td>PHT 270</td>
<td>Clinical Practicum</td>
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<td>40 hours per week, full time for 6 weeks; 3 credits</td>
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<td>A clinical internship in a general hospital setting. Under the supervision of a licensed physical therapist, the student will integrate and apply course work to provide quality care in the evaluation and treatment of patients with a variety of diagnoses. The emphasis is on exposure to and participation in the environment in which a staff therapist functions. Prerequisites: PHT 300, PHT 350</td>
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<th>Course Code</th>
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<tr>
<td>PHT 300</td>
<td>Physical Therapy Praxis III: Therapeutics Modalities</td>
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<td>3 class hours, 3 laboratory hours; 4 credits</td>
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<td>This course is designed to acquaint the student with thermal, electrotherapeutic, and hydrotherapeutic procedures used in the evaluation and treatment of pain and dysfunction. Includes the examination of the effect of thermal and electrical modalities on the human body. Includes a laboratory component which is designed to provide the necessary experiences for the student to develop problem-solving skills in the application of therapeutic modalities along the wellness-illness continuum, i.e., consideration of the psychological, social and environmental factors which my contribute to the success of the therapeutic program. Prerequisite: PHT 250</td>
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<tr>
<td>PHT 310</td>
<td>Health Promotion for Self and Society</td>
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<td>3 hours; 3 credits</td>
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<td>The study of traditional and contemporary definitions of health. Describes the holistic approach to health care with emphasis on the illness-wellness health continuum across the life span. Examines the interrelationships between nutrition and health, mind and body, physical activity and health. Students will assess their own health status from a holistic perspective. Students will begin to identify community needs which would benefit from a program of health promotion and disease prevention. Prerequisites: PHT 350, PHT 450</td>
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<tr>
<td>PHT 350</td>
<td>Physical Therapy Praxis IV: Cardiopulmonary Rehabilitation</td>
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<td>3 class hours, 3 laboratory hours; 4 credits</td>
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<td>Application of principles of cardiopulmonary physiology to an understanding of pathology and disease and prevention. The student will learn to evaluate and treat chronic and acute cardiopulmonary problems, and to teach clients strategies for preventing cardiopulmonary dysfunction. The student will also learn to predict and manage cardiopulmonary dysfunction in patients with other primary diagnoses. Prerequisite: PHT 250</td>
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PHT 370 Clinical Practicum II
40 hours per week, full time for 8 weeks; 3 credits
An eight-week affiliation in a facility for the developmentally disabled that will serve to further refine and enhance students’ skills while building on past clinical experiences. Provides the opportunity for the student to concentrate on skills and increase poise and efficiency, especially in the area of developmentally disabled. Prerequisites: PHT 600, PHT 650

PHT 405 Research Methodologies
3 hours; 3 credits
Introduction to the scientific methods of inquiry used in research and their meaning in physical therapy practice. Includes identification of problems, research design, methodology and reporting of results. Applications of computer technology to research is emphasized. Students begin to identify a research area of interest related to the developmental disabilities. Prerequisite: PHT 250

PHT 600 Physical Therapy Praxis V:
Orthopedic Evaluation and Treatment
3 class hours; 3 laboratory hours; 4 credits
Examines the theoretical applications of various mobilization techniques and pain and stress management for the orthopedic patient. Emphasis upon joint and vertebrae evaluation and mobilization techniques. Prerequisites: PHT 270, PHT 350

PHT 605 Research Design
3 hours; 3 credits
Emphasis will be placed in the acquisition of methods and techniques for extending the scientific base of knowledge for advanced physical therapy practice. Research studies which address questions of impact on rehabilitation and which are drawn from an interdisciplinary health perspective will serve as the focus for discussion. Research designs and related statistical processes will be examined in terms of their appropriateness for addressing various rehabilitation problems. Prerequisite: PHT 405

PHT 606 Research Seminar I
3 hours; 3 credits
Implementation of research study and preparation to submit for publication in a professional journal. Independent study with faculty adviser. Prerequisites: PHT 405, PHT 310

PHT 608 Health Care Administration
3 hours; 3 credits
Lectures and discussions will provide information concerning the physical therapist’s responsibility in the management of the physical therapy department within a health care system. Areas include financial consideration, supervision and leadership skills, hospital administration, and socioeconomic aspects of health care. Prerequisite: PHT 270

PHT 615 Interventions in Developmental Disabilities
3 hour; 3 credits
Through lecture and laboratory experiences, discussion, clinical visits, and readings, the student will be able to examine the various theories and practices designed for intervention in developmental disabilities and discuss and analyze current research findings in the area. Prerequisite: PHT 650

PHT 630 Pathokinesiology
2 class hours, 3 laboratory hours; 3 credits
Critical review and assessment of physical therapy treatments and evaluation for pain and stress management as related to the musculoskeletal system. Students will compare and analyze current theories of orthopedic physical therapy management. Students will design a corporate fitness or pain presentation program. Prerequisites: PHT 600, PHT 650

PHT 631 Advanced Assessment of Human Motion
2 class hours, 3 laboratory hours; 3 credits
Advanced study of the neurophysiological principles underlying human motion with special attention to the application of principles to assess normal and abnormal motion. Examination of theoretical concepts which attempt to explain motor control. Examination of principles of motor learning and task analysis, and their application to rehabilitation and patient and family education. Evaluation of neurophysiological techniques to improve the quality of motion. Prerequisites: PHT 650, PHT 310

PHT 650 Physical Therapy Praxis VI:
Neuromotor Facilitation
3 class hours, 3 laboratory hours; 4 credits
Evaluation of patients with neuromotor dysfunction and application of therapeutic techniques to facilitate improved neuromotor function. Introduction to theoretical applications of Bobath, Brunnstrom, Rood, and Voss. Also includes rehabilitation of the spinal cord patient. Prerequisites: PHT 270, PHT 350

PHT 651 Physical Therapy Praxis VII:
Current Topics in Rehabilitation
2 class hours, 3 laboratory hours; 3 credits
Study of advanced assessment and specialized treatment methodologies in physical therapy practice. Areas include dance and athletic injuries, burns, hand and cancer rehabilitation. Includes laboratory prosthetics and orthotics, and clinical activities. Prerequisite: PHT 631

PHT 660 Advanced Topics in Physical Therapy
3 hours; 3 credits
Examines the theoretical foundations and the principles of practice of selected alternative treatments in physical therapy. Reviews the efficacy of physical therapy procedures. Presents the conceptual bases of alternative approaches from a critical analytical perspective. Assessment of clinical strategies is an important aspect of the course. Student presentations and demonstrations of these approaches are utilized, along with current research findings. Prerequisites: PHT 631, PHT 370

PHT 670 Clinical Practicum III
40 hours per week, 12 weeks of full-time clinical internship; 6 credits
An affiliation of approximately 12 weeks. The overall purpose is for the student to practice and perfect treatment techniques, skills, and knowledge previously acquired and utilized in the clinical setting. Students may opt for an acute care facility to see a variety of patient problems or for a more specific specialty area such as pediatrics or sports medicine. These affiliations build on past experiences and integrate coursework and skills from the third year. Prerequisites: PHT 600, PHT 605, PHT 608, PHT 615, PHT 631
Doctoral Programs

The College participates in several doctoral programs with the CUNY Graduate School and University Center. Please consult the Graduate Center catalog for complete information on admissions and programs.

Doctoral Program in Biology (Neuroscience)
The College participates with the Graduate School and University Center, and in cooperation with the New York State Institute for Basic Research in Developmental Disabilities, in offering a Ph.D. Program in Biology with a subspecialty in Neuroscience. The program is designed to give the student advanced knowledge in physiology with emphasis on neurobiology and neurochemistry. State-of-the-art neuroscience laboratories equipped with facilities for neuronal cell cultures, cell imaging microscopy, bioenzymatic analyses, protein purification, gene cloning, electrophysiology, and other advanced research procedures provide the setting for graduate training and doctoral dissertation research. Research emphasis is on neuronal development, synaptic plasticity, and molecular mechanisms underlying learning, memory, and developmental disabilities. Students are admitted to the program by the Graduate School and University Center (365 Fifth Avenue, New York, New York 10016, (212) 817-7470; email: admissions@gc.cuny.edu; www.gc.cuny.edu) and are advised to consult Dr. Miriam Tausner, Department of Computer Science at CSI.

Doctoral Program in Computer Science
The College participates in the CUNY Graduate School and University Center’s Ph.D. Program in Computer Science. Students wishing to specialize in the areas of artificial intelligence and data mining, multimedia and image processing, software engineering, management information systems, networks, telecommunication or related areas may do much of their course work and their research at the College of Staten Island. Students are admitted to the program by the Graduate School and University Center (365 Fifth Avenue, New York, New York 10016, (212) 817-7470; email: admissions@gc.cuny.edu; www.gc.cuny.edu) and are advised to consult Dr. Fred Naider, Department of Chemistry at CSI.

Doctoral Program in Physics
The College of Staten Island is an active participant in the CUNY doctoral program in Physics. Students in this program are admitted through the Graduate School and University Center (365 Fifth Avenue, New York, New York 10016, (212) 817-7470; email: admissions@gc.cuny.edu; www.gc.cuny.edu) under the auspices of the College. Courses are taken at the Graduate Center together with students associated with other participating CUNY colleges. Dissertation research is done at CSI. The department has a well equipped laser and photonics laboratory. Current research interest include experimental and theoretical optics, condensed matter physics, quantum systems, particle physics, polymer physics, material science, and astrophysics. Students interested in the program are advised to consult Dr. William Schreiber, Department of Engineering Science and Physics at CSI.

Doctoral Program in Polymer Chemistry
The College participates with the Graduate School and University Center and Brooklyn College in offering a Ph.D. program in polymer chemistry. Interested students may also study for the master's degree while in the doctoral program. The program is designed to give the student a broad background in chemistry along with an interdisciplinary approach to polymer science. Emphasis is placed on the relationship between the synthesis, structure, properties, and utilization of natural and man-made polymers. Students are admitted to the program by the Graduate School and University Center (365 Fifth Avenue, New York, New York 10016, (212) 817-7470; email: admissions@gc.cuny.edu; www.gc.cuny.edu) and are advised to consult Dr. Nan-Loh Yang, Department of Chemistry at CSI.

Doctoral Program in Psychology (Learning Processes)
The College participates with Queens College, the Graduate School and University Center, and with the New York State Institute for Basic Research in Developmental Disabilities in offering a Ph.D. program in Psychology with a specialty in Learning Processes. The program provides students with intensive training in the basic processes of learning and behavior analysis in laboratory and classroom settings. Within this framework, students have the opportunity of specializing in the study of developmental disabilities. Particular emphasis is placed upon the development of rehabilitative and educational programs for persons with developmental disabilities.

Students are admitted to the program by the Graduate School and University Center, (365 Fifth Avenue, New York, New York 10016, (212) 817-7470; email: admissions@gc.cuny.edu; www.gc.cuny.edu) and are advised to consult Dr. Bertram Ploog in the Department of Psychology, Sociology, Anthropology, and Social Work at CSI.

Courses

CHM 710 Applied Polymer Chemistry
3 hours, 3 credits
A study of the relationship of polymer structure and properties to the applications of polymeric materials. The chemical and structural requirements of fibers, elastomers, and plastics. Processing of polymers. A survey of the more important polymers. Synthesis of monomers and polymers.
Prerequisite: U 730

CHM 795 Research
1–15 credits, 2–30 hours
A course of research in polymer science under the direction of a faculty member.

CHM 820 Seminar in Polymer Chemistry
1 hour, 1 credit
Students, staff, and visitors present seminars dealing with current research and literature reviews on selected topics in polymer chemistry.
Prerequisite: U 730
CHM 830  Topics in Polymer Chemistry
3 hours; 3 credits
Advanced aspects of polymer chemistry are intensively explored. The course is rotated among staff members in the program.

CHM 800-890 (1-3 hours; 1-3 credits).
Graduate Topics in Chemistry

CHM 891 (1 credit), CHM 892 (2 credits),
CHM 893 (3 credits), CHM 894 (4 credits).
Graduate Independent Study in Chemistry

Study and research under the supervision of a staff member which may include literature and/or experimental work.

For a listing of additional doctoral courses in chemistry consult the CUNY Graduate School catalog.

Topics Courses and Independent Study
Graduate courses are also offered as topics courses and as independent study. These courses are identified by the ALPHA designation for the discipline and an 800 number:

Graduate Topics in XYZ: XYZ.800-890 (1-4 hours, 1-4 credits).
Independent Study in XYZ: XYZ.891 (1 credit),
XYZ.892 (2 credits),
XYZ.893 (3 credits),
XYZ.894 (4 credits).

(See the Schedule of Classes for each semester.)

Graduate Courses in Selected Disciplines
In addition to courses listed under a degree program, a number of courses have been designed specifically for teachers, particularly those educators who teach at the high school level. Graduate courses in disciplines outside the major field may be of interest also to students in fields other than education.

American Studies

AMS 661  Education and American Society
3 hours; 3 credits
The development of educational thought and practice in the United States. The school and other educational agencies viewed as cultural institutions affected by and shaping the political, economic, and social character of the nation.

Art

ART 893  Independent Study in Contemporary Painting
4 hours; 3 credits
The course is concerned with the techniques and theories of contemporary painting in its form as the modern heritage of Cezanne and Cubism and is intended for advanced painters.
Prerequisite: B.A. or B.S. with an art major, B.F.A., or permission of the instructor.

Biology

BIO 602  Evolution for Secondary School Teachers
4 hours; 4 credits
A course dealing with evolution as it is understood today. It will cover the origin and evolution of the universe and life on earth. Both the mechanisms of evolution and its historical record will be examined. Discussion of social, philosophical, and biological implications of evolution.
Prerequisite: Bachelor's degree with a major in a biological or physical science.

BIO 610  Genetics for Secondary School Teachers
4 hours; 4 credits
A study of the mechanical and molecular basis of inheritance. This course will discuss patterns of inheritance including linkage and chromosome mapping; cytogenetics; molecular genetics; and non-chromosomal inheritance, the nature of the gene and the history of the foremost ideas in genetics.
Prerequisite: Bachelor's degree with a major in a biological or physical science.

BIO 620  Molecular Biology for Secondary School Teachers
4 hours; 4 credits
This course offers a general survey of cell structure and function in molecular terms, with current concepts emphasized throughout. Topics include: the role of protein-ligand interactions in cell function; gene organization and control; cell membranes and membrane transport mechanisms; cell organelles; the molecular basis of contractility; chemical recognition and response mechanisms in cells of the immune system; molecular events at chemical synapses; hormones and other chemical messengers.
Prerequisite: Bachelor's degree with a major in a biological or physical science.

BIO 625  Developmental Biology for Secondary School Teachers
4 hours; 4 credits
Differentiation and growth of organisms from the egg to the adult, including gametogenesis, fertilization, cleavage, and morphogenesis. Emphasis is placed on vertebrate development (amphibian and avian); selected invertebrates are also studied.
Prerequisite: Bachelor's degree with a major in a biological or physical science.

BIO 630  Animal Physiology for Secondary School Teachers
4 hours; 4 credits
Study of the life processes of multicellular organisms including principles of homeostasis; composition of body fluids, transport processes, and neuro-endocrine mechanisms.
Prerequisite: Bachelor's degree with a major in a biological or physical science.
**BIO 640  History of Natural Science for Secondary School Teachers**
4 hours; 4 credits
A course designed for teacher education students, particularly those interested in science, mathematics, and the history of ideas. The course will discuss the important scientific developments since the Renaissance. The contributions of major figures, such as Copernicus, Galileo, Kepler, Harvey, van Leeuwenhoek, Priestley, Schleiden, Schwann, Darwin, and Mendel, will be included. The relationship of their ideas to modern scientific thought and the social implications of their contributions will be discussed.
Prerequisite: Bachelor's degree with a major in a biological or physical science.

**Cinema Studies**

**CIN 701  Film and Culture**
4 hours; 4 credits
An examination of how film shapes and reflects the values, mores, and institutions of different societies and cultures. For example: the relation of the western genre to American individualism; the treatment of social class in English cinema. Intended as a liberal arts elective; not open to Cinema Studies majors.

**CIN 702  Film and Literature**
4 hours; 4 credits
An examination of the theoretical and practical relations between the two arts of film and literature. Students will read selected literary texts and view the films made from them. Intended as a liberal arts elective; not open to Cinema Studies majors.

**CIN 703  Film and Psychology**
4 hours; 4 credits
An examination of films in which psychological concerns are of particular interest. Intended as a liberal arts elective; not open to Cinema Studies majors.

**CIN 704  Film and History**
4 hours; 4 credits
An examination of films in which history is the subject and of films as historical documents. Intended as a liberal arts elective; not open to Cinema Studies majors.

**Computer Science**

**CSC 602  Computing for Teachers I**
4 hours; 4 credits
Students will be instructed in the history of computers. Basic computer hardware will be discussed. Students will become computer literate by gaining experience in using a computer application program and additional commercial software and shareware. Integration of the computer into the classroom will be addressed by discussion and demonstration of a computer lesson. A major project will be required.

**CSC 702  Computing for Teachers II**
4 hours; 4 credits
Emphasis will be placed on acquiring the skills to teach computer programming at the lower grade levels. Instruction will be given in LOGO and BASIC. The mathematical basis of computing will be discussed along with elementary data structures.
Prerequisite: CSC 602

**Dramatic Arts**

**DRA 601  Drama in the Schools**
4 hours; 4 credits
An examination of the role of drama in both its educational and social settings. Study of the ways in which drama may be used at the various levels of education -- childhood through adult programs. Creative drama as a process as well as educational theatre as a product. Drama as a teaching tool in the general curriculum as well as drama as a subject of aesthetic education.
Prerequisite: A bachelor's degree. Undergraduate juniors and seniors may enroll with the permission of the instructor.

**Environmental Science**

**ESC 602  Environmental Science for Elementary School Teachers**
3 hours; 3 credits
The course covers the basic scientific concepts that underlie the structure and function of the biospheric ecosystem. Topics include the impacts of human activities in terms of ecology, sociopolitical aspects, economics, environmental ethics, and other topics as they relate to elementary teachers. (Not creditable toward Environmental Science Masters degree)

**Geography**

**GEG 601  Geography of Ordinary Landscapes**
4 hours, 4 credits
Examines everyday environments. Explores physical, architectural, political, and economic conditions that shape these landscapes and their impact on cultural life.

**History**

**HST 601  Intellectual History of Europe: Medieval Inheritance I**
4 hours; 4 credits
Topics in medieval intellectual history (ca. 300 - 1050) to be examined include classical, Jewish, and early Christian elements in medieval thought, the Latin Fathers, Byzantine and Islamic contributions to the West, Germanic ideas and institutions. Special attention will be given to the secondary authorities in the field. Reports and papers will form the basis of class discussion.

**HST 603  The Classical Inheritance**
4 hours; 4 credits
Various aspects of Greco-Roman history with special emphasis on the characteristic contributions of the classical world to the development of European civilization. Some previous course work and/or reading the history of classical antiquity is recommended.

**HST 604  Tudor and Stuart History**
4 hours; 4 credits
Readings in the controversial literature concerned with 1) the sixteenth-century administrative revolution and 2) the constitutional and social crisis of the seventeenth century. The emphasis will be on the political and social history of the period 1540-1640. A general knowledge of modern European history or of British literature in this period is presupposed.
HST 605  War and Society in the Modern World
4 hours; 4 credits
The history of war from the early modern period to the present. War will be studied as a social and political phenomenon. The focus will be on European rather than American experience until the twentieth century is considered. A general knowledge of history is presupposed.

HST 606  Age of the French Revolution
4 hours; 4 credits
Beginning with a study of the debate over the coming of the Revolution in late eighteenth-century Europe, this course will go on to consider the various phases of the Revolution and to assess the effective changes within France and Europe that it brought about, the foreign wars, and the Napoleonic "synthesis." A reading knowledge of a European language, particularly French, will be helpful.

HST 607  Nineteenth-Century Europe
4 hours; 4 credits
A study of classic works and recent literature dealing with selected topics of nineteenth-century European history. There will be an effort to acquaint students with basic primary sources of information as well as with secondary literature. The emphasis will be on continental Europe. A reading knowledge of a European language is presupposed.

HST 610  Europe in the Twentieth Century
4 hours; 4 credits
The range of the European experience from 1914-1945 runs from a position of world hegemony to the nadir of sociopolitical collapse. This course will explore the major events and forces -- the nature of modern war and peace making, the challenge of Communist revolution, the shock of fascism, the failure of the liberal states, and the rise of the superpowers -- which shaped contemporary European civilization.

HST 614  America's Origins
4 hours; 4 credits
History of the thirteen British colonies, from their settlement through the Revolution. The material and ideological forces that helped to create the new nation will be examined. Among the topics to be discussed will be Puritanism, slavery, mercantilism, and the political development of the colonies. The last part of the course will examine the reasons for and significance of the American Revolution.

HST 624  U.S. History, 1900-1940
4 hours; 4 credits
Readings, analysis, and reports of the major historical accounts of Progressivism, World War I, the 1920's, and the New Deal period including social, political, and intellectual themes.

HST 625  Gender and Modern Consciousness
4 hours; 4 credits
An examination of the category of "gender" as an area illuminating the social sciences, particularly history and modern sociology, in recent scholarship.

HST 626  Historical Themes and Interpretations
(Also EDD 626)
3 hours; 3 credits
Examination of selected themes in world history, such as nationalism, globalization, minorities and society, religion and the state, and humans and their environment. Each semester the course will focus on the development of one theme, affording students the opportunity to deepen their interpretation through case studies, critical analysis of texts, museum work, and Internet research.

HST 700  The Russian Revolution 1917-1991
4 hours; 4 credits
This course will examine the historiography of the 1917 Revolution and the ensuing Soviet State, the origin of Stalinism, and the various political trends in this emerging Russian historiography. Major 1991 political events in ex-Soviet Union countries will be examined as well as contemporary social movements.

Mathematics

MTH 612  Introduction to Mathematical Logic
4 hours; 4 credits
A development of the propositional calculus and the predicate calculus with special emphasis on their mathematical aspects and applications. The course covers formal axiomatic theory, validity, provability, consistency, and completeness. Prerequisite: MTH 233 or MTH 236

MTH 615  Modern Algebra for Secondary School Teachers
4 hours; 4 credits
Set operations, mappings, algebraic structures, groups, rings, integral domains, division rings, fields, ruler and compass constructions. These topics will include a discussion of the historical development of these ideas. Prerequisite: MTH 233 or MTH 236

MTH 620  Topics in Mathematics for Teachers
4 hours; 4 credits
A culturally oriented course for teachers who seek to deepen their understanding and appreciation of the style and status of modern mathematics. Topics will be drawn from sets, number systems, complex numbers, and other areas. Prerequisite: MTH 233 or MTH 236

MTH 621  Calculus for Secondary School Teachers, with Graphing Calculators
4 hours; 4 credits
A study of the theoretical concepts of calculus as a preparation for the teaching of calculus in the secondary school. Emphasis will be placed on drawing connections between various ideas in calculus and on using the graphic calculator as a tool for illustrating concepts and solving problems. A wide variety of applications are stressed throughout the course. Prerequisites: MTH 233 or MTH 236 or permission of the Department.

MTH 623  Geometry for Secondary School Teachers
4 hours; 4 credits
Finite geometries, properties of axiomatic systems, a critique of Euclid. An axiomatic development of Euclidean geometry and the reproducing major theorems of Euclid. Non-Euclidean geometry: the concept of parallelism, its history; the geometry of Bolyai-Lobachevsky; a comparison of hyperbolic and Euclidean properties. Prerequisite: MTH 233 or MTH 236
MTH 627  
**Historical Perspectives on Mathematics Topics**

(Also EDD 627)

3 hours; 3 credits

An examination of the historical origins and contemporary applications of mathematics topics selected from areas such as arithmetical computation, number theory, cryptography, graph theory, geometry, and probability. Emphasis upon exploration, analysis, and problem solving. Intended for teachers who wish to extend their own knowledge of mathematics and enhance classroom pedagogy.

Prerequisite: Two courses in fundamentals of mathematics (equivalent to MTH/SLS 217 and 218)

MTH 632  
**Foundations of Number Theory**

4 hours; 4 credits

Number theory: mathematical induction, factorization and fundamental theorem of arithmetic, the division and the Euclidean algorithms, linear diophantine equations, congruence of classes in integers, modulo n, famous problems in number theory, arithmetic functions, elementary theory of the distribution of primes, quadratic reciprocity, and solutions of systems of congruence equations.

Prerequisite: MTH 233 or 236

MTH 640  
**Numerical Analysis for Secondary School Teachers**

4 hours; 4 credits

Solution of equations, interpolation and approximation, and convergence; numerical differentiation and numerical solution of initial value problems in ordinary differential equations; selected algorithms programmed for solution on computers.

Prerequisite: MTH 233 or MTH 236

MTH 643  
**Development of Mathematics**

4 hours; 4 credits

This course is open to students who have an interest in the historical development of mathematics. It is recommended that this course be taken by students who plan to teach mathematics in the high schools. The course will cover the development of mathematics and its influence on Western culture. Several important concepts in mathematics such as Euclidean and non-Euclidean geometry and theory of numbers will be discussed both in the context of impact on the society and the later development of the science of mathematics.

Prerequisite: MTH 233 or MTH 236

MTH 650  
**Discrete Mathematical Modeling for Secondary School Teachers**

4 hours; 4 credits

Graphs, interval graphs, transitivity orientable graphs, Euler and Hamiltonian circuits, graph-theoretic models including one way street assignment, phasing traffic signals, street sweeping, graph coloring, probabilistic models including Markov Chains and basic queuing models, voting methods and group ranking, weighted voting models and shapely power index.

MTH 651  
**Functions of a Complex Variable**

4 hours; 4 credits


Prerequisite: MTH 233 or MTH 236

MTH 680  
**Probability Theory for Secondary School Teachers**

4 hours; 4 credits

Sample spaces, combinatorial analysis, binomial Poisson and normal distributions, random variables, laws of large numbers, random walks, Markov chains, time-dependent stochastic processes, continuous sample spaces.

Prerequisite: MTH 233 or 236

MTH 681  
**Theory of Topology**

4 hours; 4 credits

Set theory; topology of the real line, Cauchy sequences, open sets, connected sets, limit points and closed sets, bounded sets, compactness, continuous functions; topological spaces, mappings, subspaces, homeomorphisms; metric spaces.

Prerequisite: MTH 233 or MTH 236

MTH 690  
**Applied Mathematics for Secondary School Teachers**

4 hours; 4 credits

An application of algebra, trigonometry, and calculus to the analysis and description of wave motion. The theory of transverse and longitudinal waves, the propagation of these waves, as well as applications to a variety of problems in nature will be studied. Applications will be chosen from the study of sound and light waves, water waves, the sound of music, traffic flow, shockwaves, and wave mechanics. Historical and cultural aspects will be stressed.

Political Science

POL 636  
**The Judicial Process**

3 hours; 3 credits

A study of the powers and weaknesses of, and the checks upon, the court systems in the United States. Special attention will be given to the role of the Supreme Court and its functions in dealing with government regulation of business and in protecting minorities.

POL 643  
**The Russian Revolution**

3 hours; 3 credits

A review of the Russian pre-revolutionary socialist tradition with special emphasis on the Leninist theory and the Bolshevik practice. Russia at war and the disintegration of the Czarist empire. The Russian Revolution, the Bolshevik takeover, and the civil war struggle. Soviet government and politics under Lenin.

POL 737  
**United States Constitution**

4 hours; 4 credits

The structures of government established by the American Constitution and the system of limited government which is a consequence of a written constitution. The course will make extensive use of Supreme Court cases to examine branches of the national government, their relationship to each other, and the extent and limits of their powers under the Constitution and will explore by case analysis the system of federalism established by the Constitution.
Science

SCI 602 Philosophy of Science
4 hours; 4 credits
Prerequisite: Two semesters of science.

SCI 605 Science and Educational Policy in the United States for Secondary Science Teachers
4 hours; 4 credits
Scientific activity from the beginning of the republic to the present day will be surveyed, with special concern devoted to the major shifts in science and education policy since the depression, and the economic, social, and political forces which influenced public support for scientific research and education during the post-war period. Also, current issues affecting many levels of society and the way the public views science will be discussed. Original scientific papers and various other material surveying the leading developments over the last half a century will be utilized.
Prerequisite: Bachelor’s degree with a major in a biological or physical science or permission of the instructor
New York State Registration

The following listing gives the title of each of the graduate degree programs of the College and the HEGIS code number under which that program is registered with the State Office of Education.

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<thead>
<tr>
<th>College Title</th>
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<td>M.S. Adult Health Nursing</td>
<td>1203.1 Nursing</td>
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<tr>
<td>M.S. Biology</td>
<td>0401 Biology</td>
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<tr>
<td>MA Cinema Studies</td>
<td>1010 Cinema Studies</td>
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<tr>
<td>M.S. Computer Science</td>
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<tr>
<td>MA Liberal Studies</td>
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<tr>
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<td>2201.01 Social Studies 7-12</td>
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<tr>
<td>M.S.Ed. Special Education</td>
<td>0808 Teacher of Special Education</td>
</tr>
<tr>
<td>Sixth-Year Certificate in Supervision &amp; Administration</td>
<td>0828 Supervisor &amp; Administrator</td>
</tr>
<tr>
<td>B.S./M.S. Physical Therapy</td>
<td>1212 Physical Therapy</td>
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The City University of New York reserves the right, because of changing conditions, to make modifications of any nature in the academic programs and requirements of the University and its constituent colleges without advance notice. Tuition and fees set forth in this publication are similarly subject to change by the Board of Trustees of The City University of New York. The University regrets any inconvenience this may cause.

* Currently being reregistered as Childhood Education
** Currently being reregistered as Adolescence Education
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Travel Information

2800 Victory Boulevard

Victory Boulevard buses - St. George/Travis
S62 - frequent weekday service and service every 30 minutes on Saturdays and Sunday.
From 8:30 a.m. to 11:30 p.m., to the ferry, and from 7:30 a.m. to 12:20 a.m., from the ferry; the S62 makes a stop inside the Victory Blvd. entrance to the campus.
S92 - commuter schedule from Travis every 15 minutes from 6:30 to 7:42 a.m. and from St. George every 15 minutes from 4:50 to 6:00 p.m.

Richmond Avenue buses - North/South route
The Richmond Avenue and Victory Boulevard stop is two blocks from the entrance to the campus.
S44 - frequent service on weekdays and runs every 30 minutes on Saturday and Sunday.
S59 - every 30 minutes every day.

Forest Hill Road buses - South Shore/St. George route
S61 - frequent daily and weekend service.
S91 - commuter schedule weekdays.

Brooklyn bus - Port Richmond/Bay Ridge-95th Street
S53 - frequent weekday service, stops at Victory Blvd. for transfer to S62 or S92.

Manhattan/Staten Island Express bus
X-10 Express bus - frequent daily schedule from 57th Street and 3rd Avenue to Victory Blvd. and the return route; stops at the campus main entrance.

Call (718) 330-1234 for information and schedules for local buses and Manhattan/Staten Island express buses.

By automobile from the Staten Island Expressway (Interstate 278):
Traveling westbound on the Staten Island Expressway from the Verrazano-Narrows Bridge, take the Victory Boulevard Exit (#10). At Victory Boulevard, turn left and continue under the Expressway and turn left into the campus at the first traffic light. Eastbound on the SI Expressway, take the Victory Boulevard Exit (#8) and turn left onto Victory Boulevard, and turn right at the traffic light to enter the campus.

Parking
Students are sold permits for on-campus parking at the time of registration on a first-come, first-served basis.
Speed limit: 25 m.p.h.

Transportation within the Campus
Loop Bus - leaves the main gate approximately every ten minutes for a trip around the campus with regular stops; in operation during regular class schedule with adjusted hours for advisement and registration periods.

Van for Disabled
Dispatched by the Office of Operational Services or Security as requested (extension 3220 or 2112).
COLLEGE OF STATEN ISLAND/CUNY

NORTH ACADEMIC QUADRANGLE
Campus Center .................1C
Computer Science .............1N
Engineering Sciences and Physics
History.............................2N
Political Science,
Economics, and Philosophy
Business ...........................3N
Engineering Technologies—West
................................................4N
Engineering Technologies—East
................................................5N
Sports and Recreation Center ..1R
The Children's Center..........2R
Center for the Arts ............1P

SOUTH ACADEMIC QUADRANGLE
Library .............................1L
Mathematics ......................1S
English, Speech, and ...........2S
World Literature
Modern Languages
Education............................3S
Psychology, Sociology, ........4S
Anthropology, and Social Work
Marcus Hall .......................5S
Nursing
Biological Sciences .............6S
Chemical Sciences
ADMINISTRATION
South Administration ..........1A
North Administration ..........2A
West Administration ..........3A
Campus Services and ..........1M
Central Plant
Statement of Nondiscrimination

The College of Staten Island is an Equal Opportunity and Affirmative Action institution. The College is committed to a campus environment that reflects and respects our pluralistic and culturally diverse society. The College admits students without regard to age, alienage or citizenship, color, gender, handicap, national or ethnic origin, race, religion, sexual orientation, veteran or marital status. The College does not discriminate in its employment, access to programs, and administration of educational policies. In welcoming new students to our campus, we are committed to providing equal educational opportunity in a learning environment in which students are free to realize their full potential as productive members of the community.

Affirmative Action, Title IX, 504

The College Affirmative Action Officer and Coordinator for Title IX, which prohibits sex discrimination in federally assisted education programs, is Ms. Charlotte McPherson. The Affirmative Action Office is located in the South Administration building, room 103, telephone number (718) 982-2250. 504 compliance efforts are coordinated by Professor Audrey Glynn, Department of Student Services, and Professor Mary Ellen Mc Morrow, Department of Nursing. Complaints by students may be addressed to Professor Glynn, telephone 982-2512; complaints by employees may be addressed to Professor Mc Morrow, telephone 982-2838.

For information, telephone:
College of Staten Island (718) 982-2000
Recruitment/Admissions (718) 982-2010
Financial Aid (718) 982-2030
Security (Office) (718) 982-2116
(Emergency) (718) 982-2111
Affirmative Action/Title IX (718) 982-2250

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