The Department of Chemistry offers degree programs designed to prepare students for advanced study and careers in chemistry, biochemistry, and related fields, including medicine and dentistry. For students majoring in other science or science-related fields, the Department offers courses needed to pursue careers in science teaching, medicine, dentistry, nursing, and nutrition. For non-science majors, courses are offered that present the concepts and facts of chemistry useful in understanding and appreciating present-day scientific knowledge and its application to everyday life.

## Programs

### 54-TO-59-CREDIT MAJOR IN CHEMISTRY, B.A.

This major is recommended for those students in chemistry who are preparing for (1) admission to medical, veterinary, or dental school; (2) certification as secondary school teachers of chemistry; or (3) positions in the chemical industry. The required courses and credits are distributed as follows:

**Credits (54-59)**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34-37</td>
<td>In chemistry: CHE 166-167 (or equivalent), 168-169, 232-233, 234-235, 249, 342, 344, and 345 and either CHE 347 or 449</td>
</tr>
<tr>
<td>20-22</td>
<td>In mathematics and physics: MAT 175-176, MAT 226, and either PHY 166-167 or 168-169</td>
</tr>
</tbody>
</table>

### 76-TO-77-CREDIT MAJOR IN CHEMISTRY, B.S.

This major is recommended to students preparing for graduate school in chemistry or for careers in chemical research. The B.S. program is accredited by the Committee on Professional Training of the American Chemical Society (ACS). The required courses and credits are distributed as follows:

**Credits (76-77)**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>54-55</td>
<td>In chemistry: CHE 166-167 (or equivalent), 168-169, 232-233, 234-235, 249, 327, 342, 344, 345, 347, 442, 443, and 449, and two additional advanced CHE courses</td>
</tr>
<tr>
<td>22</td>
<td>In mathematics and physics: MAT 175, 176, MAT 226, and either PHY 166-167 or 168-169</td>
</tr>
</tbody>
</table>

### 81-CREDIT MAJOR IN CHEMISTRY, B.S., WITH A SPECIALIZATION IN BIOCHEMISTRY

This major prepares students for (1) graduate study in biochemistry, molecular biology, immunoochemistry, pharmacology, or clinical chemistry; (2) professional training in medicine, dentistry, and other health-related sciences; and (3) careers in biochemistry or biomedicine in hospitals, medical schools, or the chemical industry. The B.S. program in Biochemistry is accredited by the Committee on Professional Training of the American Chemical Society (ACS). The distribution of required courses and credits is as follows:

**Credits (81)**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>In biological sciences: BIO 166, 167, 238, and 420</td>
</tr>
<tr>
<td>18</td>
<td>In mathematics and physics: MAT 175, 176, and either PHY 166-167 or 168-169</td>
</tr>
</tbody>
</table>

## PREPARATION FOR TEACHING

Students planning to teach should consult their advisers as well as the office of the Dean of Education (Carman B-33, 960-4975).

## REQUIREMENTS FOR A CHEMISTRY MINOR

Students must complete 10 credits in organic chemistry—CHE 232-233 and 234-235—and also choose either CHE 249 (quantitative analysis, 5 credits) or CHE 332 (physical chemistry, 3 credits).

## Courses in Chemistry

### CHE 001: Preparation for General Chemistry

3 hours, 0 credits. Practice in handling mathematical problems in physical science and an introduction to certain fundamental topics in chemistry, for students who have had insufficient high school training in the physical sciences.

### CHE 104: Introductory Chemistry I

3 hours, 1.5 credits. (CHE 104 and 106 together are equivalent to CHE 166. Either CHE 104 and 106 or CHE 166 is required of students taking more than one year of chemistry—except students majoring in nutrition—and of pre-engineering students. Either 104 and 106 or 166 is recommended to premedical, preveterinary, and predental students.) A course presenting the fundamental laws and theories of chemistry. Considerable emphasis will be placed on the application of the mathematical and reasoning skills necessary to solve chemical problems. PREREQ: Completion of the College’s Requirement in Mathematics. NOTE: CHE 104 is not credited without CHE 106. A student may receive credit for only one of the following: CHE 104 and 106, CHE 114, CHE 136, and CHE 166.

### CHE 105: Introductory Chemistry Laboratory I

4 hours (3, lab; 1, problem lab), 1 credit. Introduction to the methods of scientific investigation, including basic physical and chemical laboratory techniques. Applications will include the synthesis and analysis of simple chemical systems. COREQ: CHE 104.

### CHE 106: Introductory Chemistry II

3 hours, 1.5 credits. Continuation of CHE 104: a course presenting the fundamental laws and theories of chemistry. Considerable emphasis will be placed on the application of the mathematical and reasoning skills necessary to solve chemical problems. PREREQ: CHE 104. CO-REQ: CHE 107.

### CHE 107: Introductory Chemistry Laboratory II

4 hours (3, lab; 1, problem lab), 1 credit. Continuation of CHE 105: introduction to the methods of scientific investigation including basic physical and chemical laboratory techniques. Applications will include synthesis and analysis of simple chemical systems. PREREQ: CHE 105. COREQ: CHE 106.

### CHE 114: Essentials of General Chemistry—Lecture

3 hours, 3 credits. A brief presentation of the essentials of chemistry and their applications to inorganic chemistry. PREREQ: Completion of the College’s Requirement in Mathematics. COREQ: CHE 115. NOTE: No student may receive credit for more than one of the following: CHE 104 and 106, CHE 114, CHE 136, CHE 166.
CHE 115: Essentials of General Chemistry—Laboratory. 3 hours, 1.5 credits. Introduction to laboratory experimentation to familiarize students with scientific measurements and practical chemical reactions. COREQ: CHE 114.

CHE 120: Essentials of Organic Chemistry Lecture I. 3 hours, 3 credits. Brief presentation of the essentials of organic chemistry and their application to biochemistry. PREREQ: CHE 114. COREQ: CHE 121. NOTE: No student may receive credit for both CHE 120 and 232.

CHE 121: Essentials of Organic Chemistry Laboratory II. 3 hours, 1.5 credits. Study of practical organic laboratory techniques and preparations to illustrate the lectures in CHE 120. COREQ: CHE 120. NOTE: No student may receive credit for both CHE 121 and 233 or 235.

CHE 136: Elements of Chemistry. 5 hours (lecture; 2, lab), 4 credits. (For nonscience majors.) A survey of the concepts of inorganic and organic chemistry and of biochemistry designed to enable the student better to understand science and its contribution to human culture. NOTE: No student may receive credit for both CHE 136 and CHE 114. A student may receive credit for only one of the following: CHE 104 and 114, 136, 166.

CHE 166: General Chemistry I. 3 hours, 3 credits. Either CHE 166 or CHE 104 and 106 are required of students planning to take more than one year of chemistry (except students majoring in nursing) and of pre-engineering students; CHE 104 and 106 or CHE 166 is recommended to premedical, preveterinary and predental students. A course presenting the fundamental laws and theories of chemistry in considerable depth. PREREQ: Completion of the College’s Requirement in Mathematics and a satisfactory score on the Departmental Placement Examination. COREQ: CHE 167. A student may receive credit for only one of the following: CHE 104 and 105, 114, 136, 166.

CHE 167: General Chemistry Laboratory I. 4 hours (3, lab; 1, problem lab), 2 credits. Introduction to the practical aspects of chemical principles, with emphasis on quantitative measurements and analytical technique. COREQ: CHE 166.

CHE 168: General Chemistry II. 3 hours, 3 credits. Continuation of CHE 166 or 106: the presentation of the fundamental laws and theories of chemistry in considerable depth. PREREQ: CHE 166 or 104 and 106 (or equivalent, as approved by the Chair). COREQ: CHE 169.

CHE 169: General Chemistry Laboratory II. 4 hours (3, lab; 1, problem lab), 2 credits. Continuation of CHE 167 or 107. Emphasis will be on inorganic preparation, ionic separation, and qualitative analysis. PREREQ: CHE 167 or 107. COREQ: CHE 169.

CHE 209: Clinical Chemistry, 8 hours (2, lecture; 6, lab), 4 credits. PREREQ: Either CHE 120-121 or 168-169.

CHE 232: Organic Chemistry Lecture I. 3 hours, 3 credits. Study of the structure and properties of the fundamental classes of organic compounds, with emphasis on reactivity, reaction mechanisms, synthesis, and stereochemistry. PREREQ: CHE 168-169. COREQ: CHE 233. NOTE: No student may receive credit for both CHE 232 and 120. CHE 232 is not credited without 234.


CHE 244: Introduction to Biochemistry. 3 hours, 3 credits. (Closed to students majoring in chemistry.) Fall semester only. Introductory course emphasizing the study of the structure, reactions, and synthesis of biological compounds; mechanism of enzyme-catalyzed reactions and biochemical genetics. PREREQ: CHE 120. NOTE: No student may receive credit for both CHE 244 and 444 or 446.

CHE 245: Biochemistry Laboratory. 3 hours, 1.5 credits. (Closed to students majoring in chemistry.) Fall semester only. Laboratory exercises designed to illustrate the biochemical aspects of nutrition. Properties and metabolic roles of carbohydrates, lipids, proteins, enzymes, hormones, vitamins, and minerals will be emphasized. PREREQ: CHE 120-121. COREQ: CHE 244. NOTE: Credit may not be received for both CHE 245 and 447.


CHE 266: Introduction to Forensic Science. 5 hours (1, lecture; 4, lab), 3 credits. The application of the natural sciences to matters of law. Recognizing, preserving, analyzing, and interpreting physical evidence to provide information to the courts and law enforcement agencies.

CHE 302: Medicinal Chemistry. 3 hours, 3 credits. An examination of the relationship between molecular structure and biological activity for some of the more important classes of therapeutic agents. Relevant nomenclature, functional group chemistry, and stereochemistry of the major classes of organic compounds; mechanism of action; structure-activity relationships, and other factors which influence drug action will be discussed. PREREQ: CHE 234 and BIO 167.

CHE 327: Structure Determination and Organic Analysis. 8 hours (2 lecture; 6 lab), 5 credits. Qualitative identification of organic compounds and characteristic groups, including the use of instrumentation, the preparation of derivatives, and the consultation of chemical literature. PREREQ: CHE 234-235.

CHE 332: Introductory Physical Chemistry I. 3 hours, 3 credits. Fall term only. (Intended for students majoring in biochemistry or biology.) An introduction to the principles of thermodynamics, kinetics, and molecular structure fundamental to the understanding of living systems. Applications of principles will include such topics as physical properties of proteins and nucleic acids, membrane transport, diffusion, enzyme kinetics, X-ray diffraction, and molecular spectroscopy. PREREQ: CHE 168-169, MAT 175 and PHY 160. PRE- OR CO-REQ: MAT 176 and PHY 167.

CHE 334: Introductory Physical Chemistry II. 3 hours, 3 credits. Spring term only. Continuation of CHE 332. PREREQ: CHE 332.

CHE 335: Introductory Physical Chemistry of Biosystems Laboratory. 6 hours, 3 credits. Spring term only. Experimental work employing physico-chemical techniques in the investigation of biochemical processes. PREREQ: CHE 249 and 332. PRE- OR COREQ: CHE 334.

CHE 342: Physical Chemistry Lecture I. 3 hours, 3 credits. Fall term only. An in-depth study of thermodynamics, states of matter, statistical thermodynamics, kinetics, and an introduction to quantum mechanics. The relation between experiment and theory will be emphasized. PREREQ: CHE 168-169, either PHY 167 or 169, and MAT 176. PRE- OR COREQ: MAT 226. NOTE: This course meets the requirements of the A.C.S.-certified B.S. in chemistry.

CHE 344: Physical Chemistry Lecture II. 3 hours, 3 credits. Spring term only. Continuation of CHE 342. PREREQ: CHE 342 and MAT 226.

CHE 345: Physical Chemistry Laboratory I. 4 hours, 2 credits. Experimental work employing important physicochemical techniques. PREREQ: CHE 249 and 342. COREQ: CHE 342, with departmental permission.
CHE 347: Physical Chemistry Laboratory II. 4 hours, 2 credits. Continuation of CHE 345. PREREQ: CHE 344 and 345. COREQ: CHE 344, with Departmental permission.

CHE 391: Chemical Investigations. 9 hours (1, conference; 8, lab), 3 credits (maximum 6 credits). (Limited to students majoring in chemistry and biochemistry.) A course designed to allow qualified students to participate in original chemical investigation under the supervision of a faculty member. A written report is required each semester. PREREQ: CHE 234-235 and Departmental permission. NOTE: The total credits received for CHE 391 and 491 may not exceed 9.

CHE 440: Quantum Chemistry. 3 hours, 3 credits. PREREQ: CHE 344 or 334. RECOMMENDED: MAT 323.

CHE 442: Inorganic Chemistry. 3 hours, 3 credits. Developments in modern chemical theories in the interpretation and explanation of the properties of and relationships existing between the elements and their compounds. PREREQ: CHE 234. PRE- OR COREQ: CHE 334 or 344.

CHE 443: Inorganic Chemistry Laboratory. 2 hours, 1 credit. Inorganic synthesis and characterization of compounds by instrumental and other modern techniques. PREREQ: CHE 234-235. PRE- OR COREQ: CHE 344 and 442.

CHE 444: Biochemistry I. 4 hours (3, lecture; 1, problem session), 3 credits. (Closed to students who have taken CHE 244.) Fall term only. Study of amino acids, protein structure and conformation, kinetic and molecular basis of enzyme action, lipids and membrane structure, carbohydrates and intermediary metabolism, regulatory mechanisms, elementary thermodynamics in biochemical equilibria, and relationships between structure and function of biological macromolecules. PREREQ: CHE 234. PRE- OR COREQ: CHE 334 or 344.

CHE 446: Biochemistry II. 3 hours, 3 credits. Spring term only. A continuation of CHE 444. Study of photosynthesis, biosynthetic pathways, structure and reactivity of nucleic acids, regulation of gene expression, active transport, mechanism of muscle contraction, and immunology. PREREQ: CHE 444.

CHE 447: Biochemistry Laboratory. 6 hours, 3 credits. Spring term only. Techniques for study of large molecules of biological importance; physical and chemical methods of isolation, characterization, structure determination, sequence and biosynthesis of macromolecules; and kinetics and mechanism of enzyme-catalyzed reactions. Laboratory work will include the application of the following methods to the study of biological molecules: spectrophotometry, chromatography (thin layer, ion exchange, and column), gradient centrifugation, electrophoresis, and radiochemical assays. PRE- OR COREQ: CHE 335 and 446. NOTE: Credit may not be received for both CHE 447 and CHE 245.

CHE 448: Advanced Organic Chemistry: Lecture. 2 hours, 2 credits. Detailed examination of heterocyclic and homo-cyclic compounds, polynuclear condensed ring systems, and natural products. Special emphasis on synthetic methods and structure determination, including kinetics and mechanisms of organic reactions. PREREQ: CHE 234 and 344.

CHE 449: Instrumental Analysis. 8 hours (2, lecture; 6, lab), 5 credits. Electroanalytical, spectrophotometric, chromatographic, and other instrumental methods as applied to analytical chemistry. PREREQ: CHE 344 and 345.

CHE 450: Chemistry Seminar. 1 credit, 1 hour. Topics of interest in chemistry and biochemistry are presented by members of the scientific community. (May be repeated for a total of four credits.) PREREQ: CHE 168. PRE- OR COREQ: CHE 232.

CHE 451: Advanced Laboratory Techniques. 4 hours, 2 credits; 6 hours, 3 credits; or 8 hours, 4 credits. PREREQ: CHE 234 and 344. PRE- OR COREQ: CHE 442.

CHE 454, 456, 458, 460, 462, and 464: Advanced Topics in Chemistry. Each 3 hours, 3 credits. Opportunity for in-depth study of topics in chemistry. (Topics will be announced in advance.) PREREQ: CHE 344, one 300- or 400-level CHE course in the area(s) of interest, and Departmental permission.

454: Studies in Analytical Chemistry
456: Studies in Biochemistry
458: Studies in Inorganic Chemistry
460: Studies in Organic Chemistry
462: Studies in Physical Chemistry
464: Intradisciplinary Studies

CHE 491: Chemical Research. 9 hours (1, conference; 8, lab), 3 credits (maximum 6 credits). (Limited to students majoring in chemistry or biochemistry.) This course is designed to enable the advanced student to pursue an investigation of some topic of common interest to the student and a faculty member of the Department. A written research report is required each semester. PREREQ: CHE 234-235, or 344, or 334, and departmental permission. NOTE: Satisfactory completion of 3 credits of CHE 491 is one of the requirements for Departmental honors. The total credits received for CHE 491 and 391 may not exceed 9.
The City and the Humanities

Director: Earl Fendelman (Carman Hall, Room 273)

“The City and the Humanities” offers a program of courses that explore the relations between an urban environment, the humanities, and the arts. Students in this program attend weekly lectures, screenings, and performances on campus, visit a variety of cultural institutions in New York City, and engage in supervised, humanities-related internships.

Courses in The City and the Humanities

HUM 135: Introduction to the Performing Arts. 3 hours, 3 credits. Appreciation of the performing arts by attending theatre, music, dance, and opera at Lehman Center for the Performing Arts, as well as lectures, demonstrations, and a weekly two-hour seminar devoted to research of art forms and backgrounds, evaluation of performances, and development of critical standards that will lead to life enrichment through continuing enjoyment of the performing arts.

HUM 150: The City and the Humanities I. 1 hour, 1 credit. A series of lectures, films, and live performances of music, theatre, and dance, designed to introduce students to the role of the arts in an urban setting. The lectures present a chronological study of the city and the humanities from classical Athens to New York City today.

HUM 155: The City and the Humanities II. 3 hours, 3 credits. A city and its culture as seen through literature, theatre, music, history, art, and architecture. An interdepartmental team-taught course. Intended primarily for students who have completed fewer than 60 credits. PRE- OR COREQ: HUM 150.

HUM 235: Opera as Literature. 3 hours, 3 credits. Analysis of the different components of opera and the relationship between literary themes and their operatic versions.

HUM 250: The City and the Theatre. 3 hours, 3 credits. Drama as theatre and as a mirror of the city from the Greeks to the present. Readings of classical, Renaissance, and modern plays in the context of the history of the development of Western theatre, with special emphasis on critical vocabulary and dramatic techniques. Students will attend live performances at Lehman as well as Broadway and Off-Broadway theatres.

HUM 255: Foundations in The City and the Humanities. 3 hours, 3 credits. (May be repeated for a total of 6 credits.) An intensive study of selected subjects in the humanities and performing arts that will draw on the cultural resources of New York City, including the arts complex on Lehman’s campus. PRE- OR COREQ: HUM 150 and COR 100.

HUM 355: Selected Topics in The City and the Humanities. 2 hours plus field experience, 3 credits. (May be repeated for a total of 6 credits.) PREREQ: Permission of instructor.

HUM 356: Interdisciplinary Topics in The City and the Humanities. 3 or 4 hours plus field experience, 5 or 6 credits. (May be repeated for a total of 12 credits.) PREREQ: Permission of instructor.

HUM 450: Selected Problems in the Humanities. 3 hours, 3 credits (maximum 6 credits).

HUM 470: Humanities Internship. 2 days per week plus biweekly conferences, 5 credits. Supervised work in both public agencies and private businesses that requires the skills derived from the fine and liberal arts. Interns will write, edit, translate, assist in stage productions, do layouts, be apprentices in a studio, be research aides, help to organize theatre and art projects. The program offers students practical experience in a wide range of careers to which a humanities education may lead. The course may be repeated once under special circumstances and with approval of the Internships Screening and Evaluation Committee. Grading will be on a Pass/Fail basis. PREREQ: Satisfactory completion of 75 college credits and approval of the Internship Screening and Evaluation Committee.

HUM 481: Advanced Individual Tutorial Project in The City and the Humanities. 3 hours, 3 credits. (May be repeated for a total of 6 credits.) Advanced research culminating in a research paper or in a visual or performing arts project in The City and the Humanities Program, under faculty direction. PREREQ: Satisfactory completion of a 300-level course in The City and the Humanities or permission of the Program Director.
Comparative Literature  (Interdepartmental)

Director: Associate Professor Carmen Esteves (Languages & Literatures)
Advisory Council: Associate Professor Bruce Byland (Anthropology), Professor Maria DiPaolo (Languages and Literatures), Professor Oscar Montero (Languages and Literatures), Associate Professor David Bady (English), Associate Professor Thomas Spear (Languages and Literatures), and Associate Professor Scott Westrem (English).

Participating Departments: Anthropology; English; History; Languages and Literatures; Latin American & Puerto Rican Studies; and Philosophy.
Participating Programs: Italian-American Studies, Latin American and Caribbean Studies, and Women's Studies.

The interdepartmental major in Comparative Literature leads to the Bachelor of Arts degree. Comparative Literature investigates literary works from the perspective of more than one national literature; works are often studied in conjunction with other intellectual disciplines such as anthropology, the arts, history, and philosophy. Traditionally, comparatists have focused on literary movements, genres, and historical periods, and on the history of literary themes and ideas, primarily within the context of Western literatures. More recently, comparatists have become interested in emergent and non-Western literatures, in “minor” genres like biography, in the history of education and the theory of reading, in women’s studies, and in literary theory. The major in Comparative Literature is approved for students minoring in Early Childhood and Childhood Education.

Courses in Comparative Literature

CLT 360: Variable Topics in Comparative Literature. 3 hours, 3 credits.
Various topics in Comparative Literature. PREREQ: IDW (CLT) 211 and 212, or ENG 347 and 348, IDW 213, and one of the following introductions to literary study: ENG 303, SPA 300, FRE 300, or ITA 300.

CLT 481: Honors Tutorial. One semester, 3 credits (limited to students in the Comparative Literature Honors Program). Individual research and completion of an honors paper on a Comparative Literature topic, under supervision of the director of the Comparative Literature program or a member of the Advisory Council. PREREQ: IDW (CLT) 211 and 212, or ENG 347 and 348, and one of the following introductions to literary study: ENG 303, SPA 300, FRE 300, or ITA 300; permission of the program director.

Programs

Curricular Program and Design
The Comparative Literature major begins with a pair of foundation courses in world classics, studied either historically or by genre. An introductory course in the methods of literary study and criticism is provided by the department of the student's principal language specialization. In addition to a selection of electives chosen from participating departments and programs, the student must take at least four literature courses above the 200 level in which works are read in the original language, with no more than two of these courses in any single language.

Courses should be selected to provide a coherent program of study focused around a particular historical period, literary genre, or geographical area. Students have a great deal of flexibility in selecting coherent courses from participating departments and programs. Each student will be assigned an adviser from one of the participating departments or programs who will help define and coordinate the student's program of study. A Comparative Literature seminar completes the program.

30-TO-31-CREDIT MAJOR IN COMPARATIVE LITERATURE, B.A.
The required credits are distributed as follows:

Credits (30-31)

9 In foundation courses: In order to gain a shared background in Western and non-Western literary classics, all students must select one of two linked pairs of foundation courses, and IDW 213. The first pair is organized by historical periods and consists of IDW (CLT) 211 and 212. The alternate pair is organized by literary genre and consists of ENG 347 and 348. For course descriptions, see pages 103 and 140 under English and World Classics.

3-4 Introduction to Literary Studies: The student must take one of the following courses on the methods of literary study: ENG 303, or SPA 300, or FRE 300, or ITA 300. Students should choose a course directly relevant to the advanced literature courses chosen in the 9-credit section below. For example, students planning to take 300- or 400-level courses in English Literature and Spanish Literature should take either ENG 303 or SPA 300 to satisfy this requirement.

6 In language courses: The two courses may be chosen from: SPV 246: Introduction to Linguistics ENG 304: The Structure of Modern English Comparative Grammar:

English-French FRE 310
English-Italian ITA 310
English-Portuguese POR 310
English-Spanish SPA 310
English-German GER 310
English-Russian RUS 310
English-Japanese JAL 310

9 Elective Courses: The three courses must be chosen from advanced 300-400-level literature courses read in the original language. These courses must be in no more than two languages. Students should select courses that enable them to concentrate on a particular historical period (the nineteenth century, etc.), a literary genre (the novel, etc.), or a geographical area (the Caribbean, Latin America, etc.). Honors students must take CLT 481 as one of their three elective courses. For students minoring in Early Childhood and Childhood Education, one of these elective courses must deal with children's literature.

3 Seminar: CLT 360

Requirements for the Minor in Comparative Literature (12 Credits)
The Minor in Comparative Literature allows a student to build an interdisciplinary concentration of courses focused on a specific historical period, literary genre, or geographical area.

Literature majors may use the minor to study works in a second language read in the original language or in translation, or to enrich their study of literature in their major by adding relevant courses from participating departments and programs such as Anthropology, Black Stud-
ies, History, Philosophy, Speech and Theatre, or Women's Studies. Literature majors are encouraged to take ENG 306: Literary Criticism.

Non-literature majors may use the minor as a way of studying literature, read in the original language or in translation, from both literary and interdisciplinary perspectives. Non-literature majors are encouraged to take IDW (CLT) 211 and 212, or ENG 347 and 348.

To satisfy requirements for the Comparative Literature minor, students must complete four courses (12 credits) selected from the participating departments and programs, two at the 200 level or above, and two at the 300 level or above. At least two of these courses (including one course above the 200 level) must be literature courses. The Minor must include works from more than one national literature.

Courses should be selected to allow concentration on a specific historical period, literary genre, or geographical area. One course may be from the student's major department, but the credits must be separate from credits counted for the major. Each student's plan of study must be approved by a Comparative Literature adviser.

HONORS IN COMPARATIVE LITERATURE
Honors in Comparative Literature may be conferred on a student who has satisfied the College's requirement for departmental honors at the time of graduation and has completed CLT 481: Honors Tutorial.

Cooperative Education

Director: Nancy Cintron (Shuster Hall, Room 254)

Cooperative education is an educational process in which students, employers, and Lehman College cooperate in relating a liberal arts education to the world of work. The program is based upon the concept that preparation for a student's future career is most effective when academic courses are closely integrated with relevant work experiences through internships. Students in the Lehman College Cooperative Education Program benefit from career exploration, work experience, financial earnings, and reassurance that a continued pursuit of a liberal arts program may enhance future employment prospects.

For students with clearly defined professional goals, the internship experience may be a series of assignments with increasing responsibility within their chosen career field. For students in the liberal arts, the work experience will provide an opportunity to explore different career options and to discover for themselves that skills associated with a liberal arts education, such as analytical thinking, good spoken and written communication, and effective human relations, have practical value in the world of work.

Program

The Cooperative Education Program provides students with academic and career advisement from the time of the student's initial enrollment in the program until graduation. Students enrolled in the Lehman College Cooperative Education Program take the following three courses for elective credit:

CED 105: Introduction to Cooperative Education
CED 270: Social Process and Career Development in the Work Environment
CED 355: Academic Perspectives on the World of Work

There are two types of internship placements available:

• Alternate Placement. A student is employed full time during an entire semester and returns to full-time study the following semester. While employed, the student must register for a part-time program of courses, including either CED 270 or CED 355.

• Parallel Placement. A student is employed part time (for a minimum of 15 hours per week), while continuing in a full academic program that includes either CED 270 or CED 355.

ADMISSION REQUIREMENTS

Students must have completed 15 credits, have a minimum cumulative index of 2.5, and have passed all the skills-assessment examinations. For further information about the program, contact Career Services at (718) 960-8366.

Courses in Cooperative Education

*CED 105: Introduction to Cooperative Education and Career Development. 2 hours, 2 credits. An introductory course for students interested in cooperative education, internships, and career development. The course will examine individual and societal attitudes toward work, introduce concepts of the work ethic, and explore career options. A goal of the course is successful job placement as part of the Cooperative Education Program or in other Lehman internship programs.

*CED 270: Social Processes in the Work Environment. 4 hours, 4 credits. Required of all cooperative education students concurrent with their first job placement. Topics include individual and group dynamics in work organizations and their application, evaluation of the current work experience and its connection to the academic program, and assessment and analysis of relations between the employee and the employer. Individual conferences. PREREQ: CED 105 or permission of the instructor.

*CED 355: Academic Perspectives on the World of Work. 3 hours, 3 credits. (May be taken for a total of 6 credits.) PREREQ: CED 270 or permission of the instructor.

*Not expected to be offered in 2003-2005
Early Childhood and Childhood Education

Department Chair: Abigail S. McNamee (Carman Hall, Room B-32)
Department Faculty:
Professors: Abigail McNamee, Anne Rathstein, Helene Silverman;
Associate Professors: Jeffrey Golland, Nancy Maldonado,
Marietta Saravia-Shore; Assistant Professors: Nancy Dubetz,
Christy Folsom, Alexandra Lawrence, Mia Mercurio, Juan
Morales-Flores, Victoria Rodriguez, Sam Shreyar; Lecturers:
Elaine Avidon, Rogelio Fernandez, Andrea Zakin

The Department of Early Childhood and Childhood Education offers a 12-credit minor for any student who is interested in learning about the field of urban education and teaching certification programs for the student who plans to seek a Lehman endorsement for an initial teaching certificate. Four programs offer initial teaching certificates: Early Childhood; Early Childhood—Integration of Bilingual Extension; Childhood; and Childhood—Integration of Bilingual Extension.

The Lehman Urban Teacher Education (LUTE) Conceptual Framework that guides these teacher education programs was developed by faculty to provide a philosophical base for our work as teacher educators. It delineates what is valued by the Department as well as how teaching practices within the Department reflect those values. Our mission is to prepare competent, qualified, ethical, and reflective professionals for service to diverse communities. Within CUNY’s tradition of access and excellence and Lehman’s mission of service to the urban community, it is expected that teachers who study in these programs will bring respect for knowledge, diversity, caring, and justice to their work with children, families, colleagues, and local organizations that comprise the Lehman community.

Teacher Certification: New undergraduate programs, designed to meet New York State teacher certification requirements, went into effect for students entering undergraduate teacher education programs as of September 1, 2001. Upon completion of one of the following programs, and achieving passing scores in required New York State teacher certification examinations, the student will have satisfied State requirements for Initial Certification in one of the following programs: Early Childhood; Early Childhood—Integration of Bilingual Extension; Childhood; or Childhood—Integration Bilingual Extension.

A student can acquire a New York State initial teaching certificate when he or she has successfully completed the following:
• all core and distribution requirements and a recommended liberal arts major;
• a 12-credit Early Childhood & Childhood Education (ECCE) minor;
• a certification sequence of professional coursework;
• professional practice (student teaching and student teaching seminar);
• passing scores on required NYS teacher certification examinations: NYS LAST examination, NYS CST examination, NYS ATS-W examination.

NOTE: All programs at Lehman College leading to New York State teacher certification are in the process of being changed to meet new State requirements. Students are advised to consult the office of the Division of Education, Room B-33 of Carman Hall, to determine the most current registered program requirements. Students not seeking an institutional recommendation but who intend to apply independently for certification should consult with a Departmental adviser prior to registration so that a course of study fulfilling State requirements may be planned. According to current changes taking place in New York State certification requirements, the option to apply for certification on an independent basis will no longer be available as of February 2, 2004.

EXAMINATION REQUIREMENTS FOR PROVISIONAL CERTIFICATION

The NYS Teacher Certification Examination (NYSTCE) for provisional certification consists of two separate parts, the LAST and the ATS-W. Candidates taking the LAST will be asked to demonstrate conceptual and analytical abilities, critical thinking and communication skills, and multicultural awareness on a four-hour written test (multiple-choice and essay) covering historical and social scientific consciousness, scientific and mathematical processes, artistic expression, and the humanities.

Candidates taking the ATS-W will be asked to demonstrate in a combined essay and multiple-choice test:
• knowledge of the learner
• knowledge of instructional planning and assessment
• knowledge of instructional delivery
• understanding of the professional environment.

THE DEPARTMENT MINOR

Students who wish to register for the 12-credit ECCE minor must have successfully completed College entrance requirements as well as English and math requirements.

The required courses and credits in the ECCE minor are as follows:
• ECE 300: Education in Historical, Political, and Sociocultural Contexts—Birth to Grade 6 (3 credits);
• ECE 301: The Child in Context: Child Study & Development—Birth to Grade 6 (3 credits);
• ECE 302: Child, Family, Community, and Schools in Sociocultural Contexts—Birth to Grade 6 (3 credits); and
• ECE 311: The Teaching Profession—Birth to Grade 6 (3 credits)
The Certification Sequences

Each certification sequence begins with professional coursework that is followed by professional practice. To begin professional coursework or professional practice, students must meet specific prerequisite requirements.

Requirements for Professional Coursework:

Professional coursework includes courses focusing on teaching a variety of content areas at the early-childhood level (Birth to Grade 2) or at the childhood level (Grades 1 to 6). Additionally, students can elect a program at either level with an integrated bilingual extension.

Students who plan to enter a teacher certification program in the department must see an undergraduate advisor to obtain information regarding the recommended general education sequence and recommended liberal arts majors prior to their first Lehman registration. Students who wish to register for professional coursework in one of the four teacher certification sequences must meet the following requirements:

• Completion of the College’s general core and distribution requirements, with the following specifications and additions:
  • Arts Requirement: One course in Art and one course in Music approved by an ECCE advisor;
  • Math requirement: MAT 123 and 132, or an equivalent approved by an ECCE advisor;
  • Science Requirement: Eight credits of natural science from CHE 136, BIO 150, PHY 135, and GEO 166, or an equivalent approved by an ECCE advisor;
  • Declaration of a recommended major for ECCE teacher education;
  • Completion of the 12-credit ECCE minor;
  • A minimum of 2.75 overall index;
  • Completion of a written departmental application for the certification sequence of choice; and
  • Submission of scores for the New York State LAST examination for advisement purposes.

Requirements for Professional Practice:

Students who successfully complete the minor and the professional coursework in the certification sequences are eligible to register for professional practice (supervised student teaching) if the following requirements are met:

• Completion of the ECCE minor and professional coursework in literacy/social studies and math/art with a combined minimum 3.0 GPA;
• Completion of a recommended liberal arts and sciences major with a minimum 3.0 GPA;
• Completion of a written application to student teach;
• Presentation of a pre-professional portfolio (guidelines available in the ECCE Department office);
• Submission of score on the New York State CST exam for advisement purposes; and
• Submission of score on the New York State ATS-W examination for advisement purposes.

THE EARLY CHILDHOOD CERTIFICATION SEQUENCES (BIRTH TO GRADE 2)

The Department of Early Childhood and Childhood Education offers an undergraduate program in Early Childhood Education that leads to Initial Certification. It is intended for students who wish to teach young children in nursery schools, day-care centers, or public schools through grade 2.

The major objective of the program in Early Childhood is to provide pre-service teachers with a beginning focus on early childhood philosophy, trends, curriculum, methods, materials, and research in the field of early childhood education (Birth to Grade 2).

The course of study reflects an integrated curriculum that provides an educational model based on child development and child study principles, New York State Education Department standards and core curriculum in each academic area, and National Council for the Accreditation of Teacher Education (NCATE) standards as described by the National Association for the Education of Young Children (NAEYC).

The required courses and credits are as follows:

• Professional Coursework (12 credits): ECE 431 (4), ECE 432 (4), ECE 433 (4)
• Professional Practice (6 credits): ECE 481 (4), ECE 483 (2)

EARLY CHILDHOOD CERTIFICATION SEQUENCE—INTEGRATED BILINGUAL EXTENSION (BIRTH TO GRADE 2)

The program in Early Childhood—Integration of Bilingual Extension adds an extension to the Initial Certificate for teaching young children in bilingual settings. The required courses and credits are the same as the above program with the following exceptions:

The following courses are replaced:
ECE 430 (4) replaces ECE 431 (4)
ECE 482 (4) replaces ECE 481 (4)

The following courses are added:
EDE 727 (3)
LNG 160 (3) or SPV(LNG) 312 (3)

CHILDHOOD CERTIFICATION SEQUENCE (GRADES 1 TO 6)

The Department of Early Childhood and Childhood Education offers an undergraduate program in Childhood Education that leads to Initial Certification. It is intended for students who wish to teach children in grades 1 to 6.

The major objective of the program in Childhood is to provide pre-service teachers with a focus on childhood philosophy, trends, curriculum, methods, materials, and research in the field of childhood education (Grades 1 to 6).

The course of study reflects an integrated curriculum that provides an educational model based on child development and child study principles, New York State Education Department standards and core curriculum in each academic area, National Council for the Accreditation of Teacher Education (NCATE) standards as described by the Association for Childhood Education International (ACEI).

The required courses and credits are as follows:

• Professional Coursework (12 credits): DEC 431 (4), DEC 432 (4), DEC 433 (4)
• Professional Practice (6 credits): DEC 481 (4), ECE 483 (2)

CHILDHOOD—INTEGRATED BILINGUAL EXTENSION (GRADES 1 TO 6)

The program in Childhood—Integration of Bilingual Extension adds an extension to the Initial Certificate for teaching in bilingual classroom settings. The required courses and credits are the same as the above program with the following exceptions:

The following courses are replaced:
• DEC 430 (4) replaces DEC 431 (4)
• DEC 482 (4) replaces DEC 481 (4)

The following courses are added:
• EDE 727 (3)
• LNG 160 (3) or SPV(LNG) 312 (3)
Courses in Early Childhood Education

ECE 300: Education in Historical, Political, and Sociocultural Contexts—Birth to Grade 6. 3 hours, 3 credits. Study of the historical, political, and sociocultural contexts of urban education and the relationship between social change and change in schools. Emphasis on bilingual/bicultural, multicultural, and special education at early childhood and childhood levels. Use of media and technology as appropriate. NOTE: Requires visits to early childhood and childhood settings with diverse populations and contrasting social and economic environments and the development of an academic portfolio.

ECE 301: The Child in Context: Child Study and Development—Birth to Grade 6. 3 hours, 3 credits. Study of theories of development and learning from birth through childhood and their application to early childhood, childhood, bilingual, and inclusive settings. Emphasis on child observation and study in multicultural, multilingual settings and language acquisition in first and second languages. Use of media and technology as appropriate. NOTE: Requires visits to early childhood and childhood settings with diverse populations and contrasting social and economic environments and the development of an academic portfolio.

ECE 302: Children, Families, Communities, and Schools in Sociocultural Contexts—Birth to Grade 6. 3 hours, 3 credits. Study of the sociocultural contexts of urban communities, schools, and community-based organizations and the impact of these contexts on children. Emphasis on how schooling is perceived by children, families, and communities. Use of media and technology as appropriate. NOTE: Requires visits to early childhood and childhood settings with diverse populations and contrasting social and economic environments and the development of an academic portfolio.

ECE 311: The Teaching Profession—Birth to Grade 6. 3 hours, 3 credits. Study of the professional lives of teachers and the diverse roles they assume in urban schools. Work with teachers in developing children's multiple literacies including linguistic, mathematical, technological, artistic, and musical, with an emphasis on how children use oral and written language to communicate and construct meaning; emphasis on how communities of learners are created. Use of media and technology as appropriate. PREREQ: Successful completion of at least six credits in the ECCE minor. NOTE: Requires visits to early childhood and childhood settings with diverse populations and contrasting social and economic environments and the development of an academic portfolio.

ECE 350: Special Studies in Elementary Education. 1-3 hours, 1-3 credits. (May be repeated for credit with permission of departmental chair; topics to appear on transcript.) Investigation of theories, issues, methods, materials, and curriculum practices in N-VI educational settings; topics and credits to vary and be announced each semester. PREREQ: Departmental permission. NOTE: Credits earned in this course will apply to New York State certification only upon individual evaluation.

ECE 402: Teaching History and Social Studies in the Elementary School (N-VI). 4 hours (2, lecture; 2, fieldwork), 3 credits. The selection, guidance, and evaluation of learning experiences in relation to the objectives of the program in nursery school through Grade VI, with specific emphasis on methods and materials in the areas of history and the social sciences: classroom organization, planning, and evaluation; guided observations. Opportunity for the students to tutor in public schools. Students will participate in supervised field experiences. PREREQ: ECE 301 or ECE 302 and successful completion of the Requirement in Oral English. NOTE: No student may receive credit for both ECE 442 and 443.

ECE 403: Teaching Science in the Elementary School (N-VI). 4 hours, 3 credits. A course designed to acquaint students with the content and objectives of the early childhood and elementary school science curriculum and the methods, materials, and resources appropriate for teaching N-VI. PREREQ: Either ECE 401 or 321 and successful completion of the Requirement in Oral English. NOTE: No student may receive credit for both ECE 403 and 441.

ECE 404: Teaching Mathematics in the Elementary School (N-VI). 4 hours (2, lecture; 2, fieldwork), 3 credits. Contemporary approaches to the organization and teaching of mathematics in the elementary school. Teaching for understanding, lesson planning, and evaluation of mathematics learning, and appropriate remedial and enrichment experiences. References to curriculum material, syllabi, sources, and research reports. Students will participate in supervised field experiences. PREREQ: Either ECE 301 or BBE 301, ECE 416, or equivalents; a passing grade on the Departmental Mathematics Competency Examination and completion of the Requirement in Oral English. NOTE: No student may receive credit for both ECE 404 and 322.

ECE 405: Art in Elementary School (N-VI). 4 hours (2, lecture; 2, fieldwork), 3 credits. Exploration of a variety of art media. Development of individual competencies in these media. Principles, methods, and classroom organization and planning for effective instruction. Students will participate in supervised field experiences. PREREQ: Either BBE 301, or ECE 301, or 321. NOTE: No student may receive credit for both ECE 405 and 443.

ECE 414: Methods and Materials in Early Childhood I. 3 hours, 3 credits. (Constitutes a two-semester sequence with ECE 415.) Study of the mental, social, emotional, and cognitive needs, interests, and experiences of children (three through five years of age) as the basis of developing suitable programs and for formulation of criteria for the selection and evaluation of materials, as well as for the creation of an appropriate environment. The course will develop specific methods and content in the teaching of social studies, science, arithmetic, and language arts. Health, nutrition, sexuality, and safety in early childhood will be included. Students will spend time in laboratory, directed observation, or other supervised field experiences.

ECE 415: Methods and Materials of Early Childhood II. 3 hours, 3 credits. Continuation of ECE 414. Emphasis will be on primary grades.
ECE 416: Methods of Teaching Reading in the Primary Grades (N-III). 4 hours (2 lecture, 2 fieldwork), 3 credits. A study of research in reading and reading methodology including reading readiness, development of meaning and sight vocabularies, structural and phonetic analysis, formal and informal techniques and measures for assessing pupil needs, organizational patterns for group and/or individual instruction, and beginning reading experiences and/or materials. Integration of research with classroom experience. Students will participate in supervised field experiences. PREREQ: ECE 301 or BBE 301 or the equivalent; and completion of the Requirement in Oral English. NOTE: No student may receive credit for both ECE 416 and 321.

ECE 419: Planning Pre-Kindergarten Programs and Kindergarten. 2 hours, 2 credits. (Recommended for early childhood students.) Child development experiences and activities that serve as the basic framework for planning consistent and continuous programs in nursery school and kindergarten. References are made to public and private schools, day-care centers, Head Start, child-development centers, and current program trends in early childhood education. PREREQ: ECE 414.

ECE 420: Methods of Teaching Reading in the Middle Grades (IV-VI). 4 hours (2 lecture, 2 fieldwork), 3 credits. A study of research in reading and reading methodology including primary grade skills development for middle-grade pupils; enlargement of meaning and recognition vocabularies; development of study skills, critical reading, and content reading; formal and informal techniques and measures for assessing pupil needs; organizational patterns for group and/or individual instruction; middle-grade reading experiences and/or materials. Integration of research with classroom experience. Students will participate in supervised field experiences. PREREQ: ECE 301 and 416 and completion of the Requirement in Oral English. NOTE: No student may receive credit for both ECE 420 and 322.

ECE 427: Teaching of English as a Second Language (N-VI), 3 hours, 3 credits. Methods and materials of teaching English to children (N-VI) whose native language is not English. Attention will be directed to problems of language, cultural orientation, and the various techniques for teaching children of different age levels and lifestyles. PREREQ: ECE 301 or 321 or BBE 301. NOTE: No student may receive credit for both ECE 427 and ESC 405.


ECE 430: Literacy and Social Studies in Early Childhood Bilingual Education—Birth to Grade 2. 7 hours (4 hours, fieldwork; 3 hours, lecture), 4 credits. Exploration of the diverse ways that infants, toddlers, and young bilingual, bicultural children develop language and literacy and an understanding of basic human needs and human interdependence in family, early care, and school settings. Assessment and instruction in the native and second languages within an integrated curriculum. Use of technology and media as appropriate. PREREQ: Successful completion of Requirements for Professional Coursework (see page 88). NOTE: Requires visits to early childhood and childhood settings with diverse populations and contrasting social and economic environments and the development of an academic portfolio. No student can receive credit for both ECE 430 and DEC 430.

ECE 432: Mathematics and Art in Early Childhood Education—Birth to Grade 2. 7 hours (4 hours, fieldwork; 3 hours, lecture), 4 credits. Exploration of the ways in which young children develop an understanding of mathematical concepts and art in family, early care, and school settings. Approaches to formal and informal assessment of children's development in mathematics and art in an integrated curriculum. Use of media and technology as appropriate. PREREQ: Successful completion of Requirements for Professional Coursework (see page 88). NOTE: Requires visits to early childhood and childhood settings with diverse populations and contrasting social and economic environments and the development of an academic portfolio. No student can receive credit for both ECE 432 and DEC 432.

ECE 433 Science and Music in Early Childhood Education—Birth to Grade 2. 7 hours (4 hours, fieldwork; 3 hours, lecture), 4 credits. Exploration of the ways young children develop science and music literacies in family, early care, and school settings. Application of assessment and instructional strategies, media, and technology in an integrated curriculum. PREREQ: Successful completion of Requirements for Professional Coursework (see page 88). NOTE: Requires visits to early childhood and childhood settings with diverse populations and contrasting social and economic environments and the development of an academic portfolio. No student can receive credit for both ECE 433 and DEC 433.

ECE 444: Music in the Elementary School (N-VI), 4 hours (2 lecture, 2 fieldwork), 3 credits. Exploration of the musical literature appropriate for children in this age group. Development of the ability to learn new songs independently and to transcribe simple original melodies. Methods and materials of instruction in a program, including singing, playing, dancing, listening, music reading, creating, and the use of instruments. Students will participate in supervised field experiences. PREREQ: Either BBE 301, or ECE 301, or 321. NOTE: No student may receive credit for both ECE 444 and ECE 443.

ECE 445: Physical Education in the Elementary School (N-VI), 3 hours, 2 credits. The development of competencies, together with the methods and materials of instruction in physical education, which include health, safety procedures, creative rhythmic activities, games, folk and square dancing, and athletics. PREREQ: One semester of physical education and current physical-activity card.

ECE 481: Supervised Student Teaching—PreK to Grade 2. 300 clock hours, 4 credits. Student teaching in varied settings that include culturally diverse populations, students with disabilities, and students of different age/grade levels (PreK, K, and Grades 1-2). Requires five full days each week in a school or early childhood setting. PREREQ: Successful completion of Departmental Minor, ECE 431, ECE 432, and Requirements for Professional Practice (see page 88). COREQ: ECE 483: Student Teaching Seminar.

ECE 482: Supervised Student Teaching in Bilingual Settings—Pre K-Grade 2. 300 clock hours, 4 credits. Student teaching in varied settings that include culturally diverse populations, students with disabilities, and students of different age/grade levels (preK, K, and Grades 1-2) in bilingual settings. Requires five full days each week in a school or early childhood setting. PREREQ: Successful completion of Departmental Minor, ECE 430, ECE 432, and requirements for Professional Practice (see page 88). COREQ: ECE 483: Student Teaching Seminar.

ECE 483: Student Teaching Seminar. 2 hours, 2 credits. Examination of the complexities of teaching. Emphases on developing reflective practice, promoting good health and safety, implementing strategies for conflict resolution and violence prevention, and identifying child abuse or substance abuse. PREREQ: Successful completion of Requirements for Professional Practice (see page 88). COREQ: Supervised Student Teaching.
Courses in Childhood Education

DEC 430: Social Studies and Literacy in Bilingual Childhood Settings—Grades 1-6. 7 hours (4 hours, fieldwork; 3 hours, lecture), 4 credits. Exploration of the diverse ways that bilingual, bicultural children develop language and literacy and an understanding of basic human needs and human interdependence in grades 1-6. Assessment and instruction within an integrated curriculum in the native and second languages. Use of media and technology within an integrated curriculum as appropriate. Prerequisites: Successful completion of Requirements for Professional Coursework (see page 88). NOTE: Requires visits to early childhood and childhood settings with diverse populations and contrasting social and economic environments and the development of an academic portfolio. No student can receive credit for both ECE 431 and DEC 430.

DEC 431: Literacy and the Social Studies in Childhood Settings—Grades 1-6. 7 hours (4 hours, fieldwork; 3 hours, lecture), 4 credits. Exploration of the ways in which children develop language and literacy and an understanding of basic human needs and human interdependence in Grades 1-6. Approaches to literacy and the social studies assessment and instructional strategies within an integrated curriculum. Use of technology as appropriate. PREREQ: Successful completion of Requirements for Professional Coursework (see page 88). NOTE: Requires visits to early childhood and childhood settings with diverse populations and contrasting social and economic environments and the development of an academic portfolio. No student can receive credit for both ECE 431 and DEC 430.

DEC 432: Mathematics and Art in Childhood Settings—Grades 1-6. 7 hours (4 hours, fieldwork; 3 hours, lecture), 4 credits. Exploration of the ways in which children develop an understanding of mathematical concepts and art in Grades 1-6. Approaches to formal and informal assessment of children’s development in mathematics and art to insure continuous development of problem-solving processes and expression of ideas in both mathematics and art. Use of technology as appropriate. PREREQ: Successful completion of Requirements for Professional Coursework (see page 88). NOTE: Requires visits to early childhood and childhood settings with diverse populations and contrasting social and economic environments and the development of an academic portfolio. No student can receive credit for both ECE 432 and DEC 432.

DEC 433 Science and Music in Childhood Settings—Grades 1-6. 7 hours (4 hours, fieldwork; 3 hours, lecture), 4 credits. Exploration of the ways young children develop science and music literacy in grades 1-6. Application of assessment and instructional strategies, and media and technology in an integrated curriculum. PREREQ: Successful completion of Requirements for Professional Coursework (see page 88). NOTE: Requires visits to early childhood and childhood settings with diverse populations and contrasting social and economic environments and the development of an academic portfolio. No student can receive credit for both ECE 433 and DEC 433.

DEC 481: Supervised Student Teaching—Grades 1-6. 300 clock hours, 4 credits. Student teaching in varied settings that include culturally diverse populations, students with disabilities, and students of different age/grade levels (1-6). Requires five full days each week in a school setting. PREREQ: Successful completion of Departmental Minor, ECE 431, ECE 432, and requirements for Professional Practice (see page 88). COREQ: ECE 483: Student Teaching Seminar.

DEC 482: Supervised Student Teaching in Bilingual Settings—Grades 1-6. 300 clock hours, 4 credits. Clinical experience in bilingual settings that include students with disabilities and students of different age/grade levels (Grades 1-6). Requires five full days each week in the school placement. PREREQ: Successful completion of requirements for Professional Practice (see page 88). COREQ: ECE 483: Student Teaching Seminar.
Economics, Accounting, and Business Administration

Department Chair: Chanoch Shreiber (Carman Hall, Room 377)
Department Faculty:
Professors: John Cirace, Oscar Fisch, Itzhak Sharav, Chanoch Shreiber; Associate Professors: Orhan Kayaalp, James Kraus; Assistant Professors: Jaspal Chatha, Judith Fields, Susan Honig, Dene Hurley, Michelle Kamen-Friedman, Roberto Rios; Lecturers: Kuk-Soo Chung, Anthony Murrell, Ada Rodriguez, Marshall Ross, Linda Tauber

Economics provides a basis for an understanding of the economic structures, processes, and trends in society and offers training in the analysis of economic problems as an aid to the evaluation of public policy. The Department offers the following six majors and specializations: (1) Major in Economics, B.A.; (2) Major in Economics, B.A., with a Specialization in Business Management; (3) Major in Accounting, B.A., with a Specialization in Industrial and Government Accounting; (4) Major in Accounting, B.A., with a Specialization in Accounting and Business Practice; (5) Major in Accounting, B.S., which fulfills the educational requirements for the C.P.A. certificate in New York State; and (6) Bachelor of Business Administration (B.B.A. degree). The Department also participates in the interdepartmental Major in Computing and Management.

Career Opportunities: The Department of Economics, Accounting, and Business Administration provides programs of study for those who plan careers as economists, accountants, or administrators in private enterprise, government, education, or research. An extensive background of training in economics, accounting, and management is usually required for those who become economic and business forecasters, financial analysts, investment advisers, comptrollers, auditors, management services specialists, tax auditors, agricultural economists, export-import managers, market researchers, marketing managers, labor mediators, personnel administrators, manpower specialists, urban planners, consumer education specialists, bankers, business managers, and lawyers or specialists in tax and estate planning or corporation law.

Preparation for Graduate Study: Students planning graduate studies in either economics or business administration should contact Departmental advisers.

Programs

30-CREDIT MAJOR IN ECONOMICS, B.A.
The required credits are distributed as follows:
Credits (30)
12  In economic analysis: ECO 166, 167, 300, and 301
3   In economic statistics: ECO 302
15  In elective ECO courses: 9 credits in 300- or 400-level courses selected with guidance from Departmental advisers; 6 credits in courses whose number may not be lower than ECO 150

52-CREDIT MAJOR IN ECONOMICS, B.A., WITH A SPECIALIZATION IN BUSINESS MANAGEMENT
The required credits are distributed as follows:
Credits (52)
42  In economics ECO 166, 167, 185, 300, 301, 302, 304, 306, 308, either 326 or 328, 331, 332, 402, and 405
10  In other departments: ENW 204, MAT 174 or CMP 166, and SPE 304

33-CREDIT MAJOR IN ACCOUNTING, B.A., WITH A SPECIALIZATION IN INDUSTRIAL AND GOVERNMENT ACCOUNTING
Completion of this major qualifies students for certain positions in private and government accounting, but does not satisfy the educational requirements for the C.P.A. certificate in New York State. Students specializing in industrial and government accounting must complete the following courses and credits:
Credits (33)
12  In economic analysis: ECO 166, 167, 300, and 301
3   In economic statistics: ECO 302
15  In basic accounting sequence: ECO 171, 272, 334-335, and 342
3   Selected from 300- or 400-level ECO courses

**Name of department pending approval.
46-CREDIT MAJOR IN ACCOUNTING, B.A., WITH A SPECIALIZATION IN ACCOUNTING AND BUSINESS PRACTICE

The required credits are distributed as follows:

Credits (46)

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<th>Description</th>
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<tbody>
<tr>
<td>6</td>
<td>In economic analysis: ECO 166 and 167</td>
</tr>
<tr>
<td>15</td>
<td>In accounting: ECO 171, 272, 334-335, and 342</td>
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<tr>
<td>3</td>
<td>In money and banking: ECO 306</td>
</tr>
<tr>
<td>3</td>
<td>In industrial organization and control: ECO 331</td>
</tr>
<tr>
<td>6</td>
<td>In law: ECO 336-337</td>
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<tr>
<td>4</td>
<td>In auditing: ECO 441</td>
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<tr>
<td>6</td>
<td>Selected from other 300- or 400-level ECO courses</td>
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<tr>
<td>3</td>
<td>In computer applications: ECO 448 or BUS 431</td>
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67-CREDIT MAJOR IN ACCOUNTING, B.S.

In addition to the 60 professional (major) credits described below, students must earn at least 60 credits in the basic liberal arts and sciences curriculum (excluding courses in physical education and health). These credits in the liberal arts and sciences may, if applicable, include the appropriate College Requirements in writing, foreign language, and mathematics. (See the information beginning on page 43 under “Degree Requirements.”)

Professional Credits (60)

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<td>In economics: ECO 166-167</td>
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<tr>
<td>33</td>
<td>In accounting: ECO 171, 272, 334-335, 342, 439-440, 441, 442, 444, and 448</td>
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<tr>
<td>6</td>
<td>In law: ECO 336-337</td>
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<tr>
<td>6</td>
<td>In finance: ECO 306 and either 307, 308, or 309</td>
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<tr>
<td>3</td>
<td>In business statistics: ECO 302 and 402</td>
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<tr>
<td>3</td>
<td>In any 300- or 400-level accounting or economics course</td>
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Credits in Other Departments (7)

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<tr>
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<tr>
<td>4</td>
<td>MAT 174 or 175</td>
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<td>ENW 204</td>
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NOTE 1: All candidates for the B.S. (Accounting) degree are accepted provisionally. A grade of C or better must be obtained in both ECO 171 and 272 for continuation in the program. Regardless of credits or courses completed, no candidate for the B.S. (Accounting) degree who has lost matriculation through poor scholarship or has received grades lower than C in ECO 171 and 272 shall be reinstated in the B.S. (Accounting) program. A student must earn initial grades of C or better in both ECO 171 and ECO 272 to be admitted to this program. The minimum grades must be earned the first time each course is taken.

NOTE 2: New York has joined the majority of states in mandating changes in the education requirements for C.P.A. licensing. Beginning with the year 2004, college C.P.A. programs registered with the New York State Education Department will have to offer a curriculum consisting of a minimum of 150 credit hours. In anticipation of these changes, the Department of Economics and Accounting will offer a B.S./M.S. in Accounting. For further details, contact the Department.

49-CREDIT BACHELOR OF BUSINESS ADMINISTRATION DEGREE (B.B.A.)

The B.B.A. program equips students with the necessary managerial skills to function in today’s rapidly changing business environment. The program, stressing the place of business organizations in the larger community, prepares its enrollees to meet this challenge by helping them develop appropriate technical, conceptual, and interpersonal competencies. The curriculum also emphasizes the role of non-profit and governmental organizations in societal life. As such, students majoring in this program are introduced to the art and science of planning, organizing, controlling, and leading the physical, financial, human, and informational resources of any organization, whether private or public, for-profit or not-for-profit, corporate or entrepreneurial. A B.B.A. also serves as an appropriate first step to graduate study in business, law, education, and other academic and professional subjects.

Professional Credits (49)

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<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>12</td>
<td>In economics: ECO 166, 167, 324, 431</td>
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<td>6</td>
<td>In accounting: ECO 171, 272</td>
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<td>9</td>
<td>In quantitative methods: ECO 302, 402</td>
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<tr>
<td>9</td>
<td>In management: ECO 304, 405, 331</td>
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<tr>
<td>9</td>
<td>In one area of specialization:</td>
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<td></td>
<td>Finance: ECO 307, 308, 310</td>
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<td></td>
<td>Marketing: ECO 332, 367, 467</td>
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<td>Human Resources: ECO 326, 328, 329</td>
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<td>Accounting: ECO 334, 335, 342</td>
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<td>Business law: ECO 336, 337, 329</td>
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Credits in Other Departments (7)

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<td>4</td>
<td>MAT 171 or 174</td>
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A minor field (12 credits) is also required.

WOMEN’S STUDIES OPTION

See page 185 for a description of this program.

Courses in Economics, Accounting, and Business Administration

- ECO 114: Economic Background of Current Events. 1 hour, 1 credit.
- ECO 115: Consumer Finance. 2 hours, 2 credits.
- ECO 116: Consumer Marketing. 1 hour, 1 credit.
- ECO 135: Marxist Political Analysis. 3 hours, 3 credits. NOTE: ECO 135 may not be substituted for ECO 166 or 167 as a prerequisite for advanced ECO courses.
- ECO 136: The Economics of Food and Energy. 3 hours, 3 credits.
- ECO 166: Fundamentals of Economics. 3 hours, 3 credits. A study of microeconomics—how the economy, as a whole, works.
- ECO 167: Economic Analysis. 3 hours, 3 credits. Microeconomics and price determination: market structures, resource allocation, distribution of income, and partial equilibrium analysis. PREREQ: ECO 166.
- ECO 171: Principles of Accounting I. 4 hours, 3 credits. Balance sheets and income statements. The theory of debit and credit. Controlling accounts and mercantile transactions. PREREQ: Either ECO 166 or Departmental permission.
- ECO 185: Introduction to Accounting for Non-accounting Majors. 3 hours, 3 credits. Study of accounting principles, their application and use in the preparation and interpretation of financial statements. The uses of accounting for management and control. NOTE: ECO 185 may not be counted for Distribution credit in Study Area III. A student may not
ECO 272: Principles of Accounting II. 4 hours, 3 credits. Partnership and corporation accounting, the voucher records, and uses of accounting in management. PREREQ: ECO 171.

ECO 300: Macroeconomic Analysis. 3 hours, 3 credits. The components, measurement, and dynamics of the level of national income and employment. Empirical and analytical approaches to the problems of controlling economic fluctuations. PREREQ: ECO 166 and 167.

ECO 301: Microeconomic Analysis. 3 hours, 3 credits. Theory of consumer demand and the firm. Price determination and market structure. Topics covered include utility analysis, production function, and income distribution. Some selected materials on welfare economics are included. PREREQ: ECO 166 and 167.

ECO 302: Economic and Business Statistics. 3 hours, 3 credits. Descriptive statistics with economic and business applications. Topics covered include estimation, testing hypotheses, regression, correlation, time series, and index-number problems. Some aspects of industrial quality control are discussed. PREREQ: ECO 166 and 3 credits of college mathematics.

*ECO 303: Information Systems and Urban Environment. 3 hours, 3 credits. PREREQ: ECO 166. NOTE: ECO 302 (or equivalent) is strongly recommended.

*ECO 304: Principles of Management. 3 hours, 3 credits. An introduction to the theory and practice of planning, organizing, and controlling the physical, financial, and informational resources of an organization, with a special emphasis on motivating and leading the human resource component. PREREQ: ECO 166 and 167.

*ECO 305: Consumer Economics. 3 hours, 3 credits. PREREQ: ECO 166.

*ECO 306: Money and Banking. 3 hours, 3 credits. Monetary and banking principles and practices: credit, commercial banks, the Federal Reserve System, monetary policy and its impact on the economy, and current issues and theories. PREREQ: Either ECO 166 and 167 and one additional 3-credit ECO course or Departmental permission.

ECO 307: Financial Institutions. 3 hours, 3 credits. The operation and administration of banking, investment, and credit agencies that comprise the financial structure of the American economy. PREREQ: ECO 166 and 167 and one additional 3-credit ECO course.

ECO 308: Corporation Finance. 3 hours, 3 credits. The economic significance of the corporate unit in present-day enterprise; its financial organization and practices. The purpose and procedures of financial reorganization. PREREQ: ECO 171.

ECO 309: Public Finance. 3 hours, 3 credits. Theories of fiscal policy and their application: the influence of federal tax and spending policy upon the economy, problems related to state and local finance, analysis of the federal budget, and trends in contemporary fiscal policy. PREREQ: ECO 166 and 167 and one additional 3-credit ECO course.

ECO 310: Security and Investment Analysis. 3 hours, 3 credits. The relationship among market structure, performance in theory and practice. Detailed discussion of concentration, product differentiation, and conditions of entry and their relation to productivity performance. Analysis of the main antitrust regulations. Theories of managerial behavior as a consequence of the separation of ownership and management. PREREQ: ECO 166 and 167 and one additional 3-credit ECO course.

ECO 311: Corporate Finance. 3 hours, 3 credits. Emphasis of the managerial approach to the employment of human resources. Large-scale enterprise and managerial goals, economic and social matrix for hiring and developing human resource inputs, and collective bargaining. PREREQ: ECO 304.

ECO 312: Union-Employer Relations. 3 hours, 3 credits. PREREQ: ECO 166 and 167 and one additional 3-credit ECO course.

ECO 313: Industrial Organization and Management. 3 hours, 3 credits. The relationships among market structure, performance in theory and practice. Detailed discussion of concentration, product differentiation, and conditions of entry and their relation to productivity performance. Analysis of the main antitrust regulations. Theories of managerial behavior as a consequence of the separation of ownership and management. PREREQ: ECO 166 and 167 and one additional 3-credit ECO course.

ECO 314: Urban Economics. 3 hours, 3 credits. PREREQ: Either ECO 166 and 167 and one additional 3-credit ECO course or Departmental permission.

*ECO 315: Urban Land Economics. 3 hours, 3 credits.

*ECO 316: Economics of Minorities. 3 hours, 3 credits.

*ECO 317: Economics of Human Resources. 3 hours, 3 credits.

*ECO 318: Economics of Education and Human Capital. 3 hours, 3 credits.

*ECO 319: Economics of Human Population and Ecology. 3 hours, 3 credits.

*ECO 321: American Economic Development. 3 hours, 3 credits. PREREQ: ECO 166 and 167.

*ECO 322: Economic Development. 3 hours, 3 credits. PREREQ: ECO 166 and 167 and one additional 3-credit ECO course.

ECO (LAC) 323: Economic Development in Latin America. 3 hours, 3 credits. Examination of major economic trends in Latin American economic development and the impact of North American policy. Special emphasis is placed on Latin American views of economic growth and on foreign intervention in particular areas such as Brazil, Mexico, Puerto Rico, Cuba, and Chile. PREREQ: Either ECO 166 and 167 and one additional 3-credit ECO course or Departmental permission.

ECO 324: International Economics. 3 hours, 3 credits. Theory of international relations: trade, investment, growth, balance of payments, currency values, and policy issues; trade restrictions, common markets, multinational firms, imperialism, and international monetary reform. PREREQ: Either ECO 166 and 167.

ECO 326: Labor Economics. 3 hours, 3 credits. History and present status of organized labor in the United States: structure of the labor force and trade unions; collective bargaining; unemployment and labor income; hours, wage rates, and working conditions; and government regulation of industrial relations. PREREQ: ECO 166 and 167 and one additional 3-credit ECO course.

*ECO 327: Comparative Labor Movements. 3 hours, 3 credits. PREREQ: ECO 166 and 167 and one additional 3-credit ECO course.

ECO 328: Human Resource Management. 3 hours, 3 credits. Emphasis of the managerial approach to the employment of human resources. Large-scale enterprise and managerial goals, economic and social matrix for hiring and developing human resource inputs, and collective bargaining. PREREQ: ECO 304.

ECO 329: Union-Employer Relations. 3 hours, 3 credits. PREREQ: ECO 166 and 167 and one additional 3-credit ECO course.

ECO 331: Industrial Organization and Management. 3 hours, 3 credits. The relationships among market structure, performance in theory and practice. Detailed discussion of concentration, product differentiation, and conditions of entry and their relation to productivity performance. Analysis of the main antitrust regulations. Theories of managerial behavior as a consequence of the separation of ownership and management. PREREQ: ECO 166 and 167 and one additional 3-credit ECO course.

ECO 332: Marketing Management. 3 hours, 3 credits. Nature and functions of marketing; consumer motivation and behavior; marketing institutions at the wholesale and retail levels; market research, product planning, pricing policies, sales management, and promotion; and government regulation. PREREQ: ECO 304.

*ECO 333: Economics of Regulated Public Utilities. 3 hours, 3 credits. PREREQ: ECO 166 and 167.


ECO 336: Business Law I. 3 hours, 3 credits. Fundamentals of legal liability. Federal and New York State court systems; the attorney-client rela-
ECONOMICS, ACCOUNTING & BUSINESS ADMINISTRATION

Specializations in Economics

Economic Analysis
*ECO 114: Economic Background of Current Events
*ECO 115: Consumer Finance
*ECO 116: Consumer Marketing
*ECO 135: Marxist Political Analysis
*ECO 136: The Economics of Food and Energy
ECO 166: Fundamentals of Economics
ECO 167: Economic Analysis
ECO 300: Macroeconomic Analysis
ECO 301: Microeconomic Analysis
*ECO 305: Consumer Economics
ECO 400: Development of Economic Thought

Money, Income, and Financial Analysis
ECO 306: Money and Banking
ECO 307: Financial Institutions
ECO 308: Corporation Finance
ECO 309: Public Finance
ECO 310: Security and Investment Analysis
*ECO 343: Analysis of Financial Statements

Economic Statistics, Econometrics, and Mathematical Economics
ECO 302: Economic Statistics
*ECO 303: Information Systems and Urban Environment
*ECO 401: Introduction to Mathematical Economic Theory
ECO 402: Quantitative Methods for Economics

Economic Development, History, and Comparative Systems
*ECO 321: American Economic Development
*ECO 322: Economic Development
ECO (LAC) 323: Economic Development in Latin America
*ECO 421: Comparative Economic Systems

Labor and Industrial Relations
ECO 326: Labor Economics
*ECO 327: Comparative Labor Movements
ECO 328: Labor Management
ECO 329: Union-Employer Relations

International Economic Relations
ECO 324: International Economics
*ECO 432: International Business Management

Industrial Organization and Control
ECO 304: Principles of Organizational Management
ECO 331: Industrial Organization and Management
ECO 332: Economics of Marketing
*ECO 333: Economics of Regulated Public Utilities
ECO 405: Management Process and Systems
ECO 431: Managerial Economics

Urban Economics
*ECO 314: Urban Economics
*ECO 315: Urban Land Economics
*ECO 316: Economics of Minorities
*ECO 317: Economics of Human Resources
*ECO 318: Economics of Education and Human Capital
*ECO 319: Economics of Human Population and Ecology

Accounting
ECO 171: Principles of Accounting I
ECO 185: Introduction to Accounting for Non-accounting Majors
ECO 272: Principles of Accounting II
ECO 334: Intermediate Accounting I
ECO 335: Intermediate Accounting II
ECO 342: Advanced Accounting
ECO 439: Cost Accounting I
ECO 440: Cost Accounting II
ECO 441: Auditing
ECO 442: Introduction to Federal Taxation
ECO 444: Advanced Accounting Problems
*ECO 446: Estate and Gift Taxation
*ECO 447: Financial Accounting Theory
ECO 448: Computer-Based Accounting
ECO 449: Advanced Tax Problems

Law
ECO 336: Business Law I
ECO 337: Business Law II
*ECO 338: Law and Economy
ECO (POL) 383: Moot Court
*ECO 436: Law of Mercantile Transactions
*ECO 437: Law of Real Estate Transactions
*ECO 438: The Economics and Law of Poverty

Independent Study, Seminar, & Honors Work in Economics
ECO 385: Independent Study in Economics or Accounting
ECE 450: Economics Seminar
ECO 490: Honors Project

*Not expected to be offered in 2003–2005
tionship. Principles of the law of contracts, sales, product liability, and agency.

ECO 337: Business Law II. 3 hours, 3 credits. The law of partnership, corporations, and other business organizations. Personal property, secured transactions, and commercial paper as treated under the Uniform Commercial Code. The landlord-tenant relationship. PREREQ: ECO 336.

*ECO 338: Law and Economy. 3 hours, 3 credits. PREREQ: ECO 166 and 167 and another 3-credit ECO or POL course.

ECO 342: Advanced Accounting. 3 hours, 3 credits. Problems relating to income, fiduciaries, liquidation, branch houses, consolidations, and other special topics. PREREQ: ECO 335.


ECO 367: Consumer Behavior. 3 hours, 3 credits. The effect of motivation, exposure, perception, knowledge, understanding, and attitudes upon consumer behavior. Global, regional, ethnic, social, and demographic dimensions of consumer decision. PREREQ: ECO 304.

ECO (POL) 383: Moot Court. 1 hour, 1 credit (May be taken only once for credit.) Practical experience in brief writing and oral advocacy, with emphasis on courtroom procedure in the setting of a mock trial. Field trips to major regional moot courts. COREQ: One of the following courses: POL 303, 304, 344, or 347; ECO 336, 337, 436, or 437.

ECO 385: Independent Study in Economics or Accounting. One semester, 3 credits (maximum 6 credits). Individual study and research of a specific topic, under the direction of a faculty member. PREREQ: Either ECO 166 and 167 or 171 and 272.

ECO 400: Development of Economic Thought. 3 hours, 3 credits. The development of economic ideas of the major schools of economic thought, with special reference to the sociophilosophic contexts within which the ideas are embedded. PREREQ: ECO 300 and 301.

*ECO 401: Introduction to Mathematical Economic Theory. 3 hours, 3 credits. PREREQ: MAT 174 and either ECO 300 or 301.

ECO 402: Quantitative Methods for Economics and Business. 3 hours, 3 credits. Methods and problems of simple and multivariable linear regression. Applied methods, including decision-making models, time series, linear programming, and input-output analysis. PREREQ: ECO 302.

ECO 405: Management Process and Systems. 3 hours, 3 credits. Nature and functions of organizational structure; the economics of managerial systems; advanced studies of institutional planning, organizing, staffing, directing, and controlling. PREREQ: ECO 304.

*ECO 421: Comparative Economic Systems. 3 hours, 3 credits. PREREQ: ECO 166 and 167 and 2 additional 3-credit ECO courses.

*ECO 431: Managerial Economics. 3 hours, 3 credits. PREREQ: ECO 304.

*ECO 432: International Business Management. 3 hours, 3 credits. PREREQ: ECO 166 and 167 and two additional 3-credit ECO courses.

*ECO 436: Law of Mercantile Transactions. 3 hours, 3 credits. PREREQ: ECO 337. COREQ: ECO 337.

*ECO 437: Law of Real Estate Transactions. 3 hours, 3 credits. PREREQ: Either ECO 337 or Departmental permission.

*ECO 438: The Economics and Law of Poverty. 3 hours, 3 credits. PREREQ: ECO 166 and 167 and another 3-credit ECO or POL course.

ECO 439: Cost Accounting I. 3 hours, 3 credits. Cost accounting, a managerial tool in planning and control; cost systems and methods; process and job order; and direct and full costing. The application of standard costs to historical statements and projection of budgets. Special costing problems: joint and by-products and marketing analysis. PREREQ: ECO 272.

ECO 440: Cost Accounting II. 2 hours, 2 credits. The use of advanced tools in the managerial decision-making process: inventory planning and control, transfer pricing, determinants of profit, capital budgeting, and behavioral implications of accounting and budgeting. PREREQ: ECO 439.

ECO 441: Auditing. 4 hours, 4 credits. Auditing theory and practice; the ethics of the accounting profession. Procedures for auditing the balance sheet and income statement. Special investigations and reports. PREREQ: ECO 342.

ECO 442: Introduction to Federal Taxation. 3 hours, 3 credits. The Internal Revenue Code: regulations, rules, and court decisions as they affect individual and corporate taxpayers. Emphasis on basic tax principles. PREREQ: ECO 335 or Departmental permission.

ECO 444: Advanced Accounting Problems. 3 hours, 3 credits. Application of accounting principles to the solution of advanced problems taken from professional examinations and actual business situations. PREREQ: ECO 342 or Departmental permission.

*ECO 446: Estate and Gift Taxation. 3 hours, 3 credits. PREREQ: ECO 442 or Departmental permission.

*ECO 447: Financial Accounting Theory. 3 hours, 3 credits. PREREQ: ECO 342.

ECO 448: Computer-Based Accounting. 3 hours, 3 credits. Advanced study of the implications of information systems for accountants, with emphasis upon accounting applications as well as the body of knowledge required for the accountant who is expected to provide relevant, significant data for an increasingly wide range of purposes. PREREQ: ECO 342.

ECO 449: Advanced Tax Problems. 3 hours, 3 credits. PREREQ: ECO 442.

ECO 450: Economics Seminar. One semester, 3 credits. (Open only to ECO and Accounting (B.S.) majors.) Special readings and research in the field of economics, to be selected by the instructor.

ECO 467: Marketing Research. 3 hours, 3 credits. A practical approach to the study of research principles and procedures as an important tool of consumer and industrial marketing decisions. Qualitative as well as quantitative techniques are stressed, and these methods are aligned with the planning, operation, and controlling aspects of marketing management. PREREQ: ECO 332 and 302.

ECO 490: Honors Project. One semester, 3 credits. An opportunity for students to do supervised individual research and directed reading in selected areas of economics. An honors essay or some other suitable presentation is required. PREREQ: For ECO major, ECO 400 and departmental permission; for B.S. (Accounting) major: ECO 444 and Departmental permission.