DEPARTMENT OF BUSINESS ADMINISTRATION AND ECONOMICS
119 Hartwell Hall
(585) 395-2623
www.brockport.edu/bus-econ/

Chairperson and Associate Professor: Steven T. Breslawski; Associate Chairperson: Jerald Weaver; Professors: John J. Spitzer; Associate Professors: Gary P. Briggs, Charles Callahan, III, James J. Cordeiro, William H. Dresnack, Richard J. Fenton, John T. Gardner, Baban Hasnat, Sandeep Singh, Susan Stites-Doe, Jeffrey C. Strieter; Assistant Professors: Thomas E. Cone, Edward W. Eramus, Asri Jantan, John Keiser, D. Donald Kent, Yusuf Nur, Gail Rein, Jane Romal, Jan Smolarski, Ralph Trecartin, Melissa Waite, Jerald Weaver; Emeritus Faculty: Inaam A. Al-Hashimi, John D. Chasse, Rawle E. Farley, Yu-Ku Li, Edward F. Van Duzer.

Programs: The Department’s programs are AACSB accredited. AACSB accreditation is a symbol of high program quality and indicates that the Department’s programs have undergone extensive outside review to ensure that they meet the rigorous standards developed by over 900 national and international business organizations and educational institutions. The Department offers degree programs in accounting, international business, and business administration. Business administration students specialize in accounting, finance, management, marketing, or pre-law. The Department also offers minors in business and economics.

Our Vision: To be recognized by our stakeholders for providing high-quality business education.

Our Mission: The department provides access to high-quality undergraduate business education for students who have demonstrated the prerequisite ability to succeed. The department’s programs accommodate a broad spectrum of students with varied interests, including transfer and non-traditional students. The department contributes to student success by preparing students for entry into professional business careers and graduate studies. Students learn theories of business and economics and develop important business skills. In order of emphasis, faculty engage in teaching, scholarship, and service.

Program Goals: All of the department’s programs build on a comprehensive liberal arts education and provide a broad understanding of business-related theory and practice. All programs develop proficiencies in written and oral communication, numeracy, and teamwork.

The Accounting Major prepares students to pursue careers in public accountancy as CPAs. Graduates may also assume positions that support an organization’s accounting and financial systems.

The Business Administration Major prepares students to assume entry-level positions in an organization’s accounting, financial, marketing, and management systems. Students are able to specialize in accounting, finance, marketing, management, and pre-law.

The International Business and Economics Major provides an interdisciplinary education that includes foreign language proficiency and cross-cultural awareness. Students gain knowledge and develop skills relevant to conducting business in the international domain. Graduates are prepared for careers with organizations with international operations.

Daytime Programs: The Department of Business Administration and Economics offers degree programs in accounting, international business and economics, and business administration. Business administration majors may specialize in accounting, finance, management, marketing, or pre-law. Additionally, the department offers minors in business administration and economics.

Evening Programs: Complementing the day program is a sizeable offering of evening courses. All of the courses required to complete the business administration degree with a specialization in finance, management, or marketing, are offered in the evening on a rotating basis. Courses supporting the accounting degree are also offered on a rotating basis. The international business degree program cannot be completed at night.
The evening program is intended primarily for part-time students and for full-time students who want to take one or two courses per semester at night. Full-time students should not expect to be able to carry a full-time load at night. Evening courses are offered at the main SUNY Brockport campus. A list of anticipated evening course offerings, projected for the next two years, is available in 119 Hartwell Hall.

Guidelines and Policies Pertaining to All Department Programs and Courses

All students majoring in the department’s programs are bound by the policies and procedures labeled 1) through 16) below.

1) Changes in Degree Requirements: Students must meet the degree requirements in effect at the time they matriculate (at the time they are formally accepted by SUNY Brockport). The degree requirements described in this catalog were in effect when this catalog went to press. However, the department continuously revises its programs in response to changes in the business environment and the changing expectations of employers. The department was contemplating several significant program changes when this catalog went to press. Prospective students should check the department’s Web site for the most current program requirements, descriptions, and course offerings.

2) Residency Requirement: At least half of the course work required to complete any department major or minor must be taken at SUNY Brockport. Additionally, as noted in the sections that follow, certain courses cannot be transferred.

3) Required Course Grades: In general, students majoring in the department’s programs need to earn a grade of at least “C-” to count a course towards a degree requirement. However, accounting majors must earn at least a “C” in their accounting courses (ACC prefix on course number). Students pursuing a minor need only to pass a course to count the course towards the minor. The overall GPA in the major or minor must be at least 2.0.

4) Three Strikes Policy: To satisfy the minimum grade requirement described in 3) above, students may take a course up to three times. Students who are unable to earn the required grade after three attempts will be blocked from further registration in the course and, as such, will not be able to complete their program of study.

5) Transfer Course and Grade Policy: Students completing any of the department’s programs may request transfer credit for (1) any prerequisite course, and (2) any 300-level course not restricted by residency requirements. SUNY Brockport and the department must approve transferred courses as equivalent to required courses, and the number of courses transferred is subject to the residency requirements of the College and department. In general, a grade of “C-” or higher is required in order for transferred courses to be used to satisfy prerequisite, corequisite, business core, and specialty course requirements. However, accounting majors need to earn a grade of “C” or higher in any accounting course (ACC prefix) that is to be transferred. In general, 400-level courses cannot be transferred. After matriculating at SUNY Brockport, students must take all 400-level accounting, business, and economic courses at SUNY Brockport. Freshman-level courses taken at two-year colleges generally cannot be transferred as equivalent to 300-level courses, and no two-year college course work will be transferred as equivalent to any 400-level course. Students must complete BUS 475 Strategic Management at SUNY Brockport.

6) Time Limitation: Courses completed more than 10 years prior to matriculation (admission to SUNY Brockport) cannot be used to satisfy business program degree requirements. Courses completed more than 10 years prior to matriculation must be repeated. Under some circumstances, students may request the opportunity to earn course credit by exam rather than repeat the course; contact the department for details. This policy applies to courses taken at SUNY Brockport and courses taken at other institutions.
7) General Education Requirements: In addition to their major course work, students majoring in the department’s programs must complete all SUNY Brockport General Education requirements; these are described elsewhere in this catalog. A student’s required General Education requirements varies depending on the student’s matriculation (entrance) date and transfer status of the student. Each student’s General Education requirements are listed on their Degree Audit Status Report (DARS), available on the Web.

8) Program Admission: Students admitted to SUNY Brockport are not automatically admitted to the department’s programs. Students must first complete prescribed prerequisite course work, which varies by degree program, and must then complete a formal application to declare a major in any of the department’s programs. A minimum prerequisite course GPA, which varies by program is also required.

Admission to the department’s programs is competitive and based on GPA in the prerequisite courses. (See Prerequisite Course Requirements for each degree described below.) Students must complete all prerequisite courses, with the required overall prerequisite GPA course grades lower than “C-” or “C,” depending on program, in order to be granted admission to the program.

Students must formally declare a major in business administration immediately after completing the prerequisite course requirements. The forms required for declaring a major in the department are available in 119 Hartwell Hall. Full-time students are expected to complete their prerequisite requirements by the end of their sophomore year, and no later than the first semester of their junior year. Transfer students with an associate's degree in business should complete the prerequisites in their first semester at SUNY Brockport. Part-time students should, when possible, complete prerequisite courses before progressing into the business core courses. Students who fail to complete the prerequisite courses and declare their major in accordance with these guidelines will not be able to register for many upper-level courses, and risk delaying their graduation date.

9) Students Who to Intend to Pursue a Major in the Department, but who have not yet completed the prerequisite courses, must indicate their intent by filing an Intent to Major form, available in 119 Hartwell Hall. Freshmen intending to major in business should complete the Intent to Major form by the beginning of their second semester at SUNY Brockport. Transfer students complete the Intent to Major form when they first register at SUNY Brockport. Declaring an Intent to Major will trigger the assignment of an advisor and will allow access to courses closed to non-majors.

10) Participation in Assessment Activities: The Department of Business and Economics administers various assessment instruments throughout the curricula of its programs. Assessment data is used for quality control and program improvement. Assessment activities may take the form of exams, exercises, or surveys. The department expects its students to take their role in assessment very seriously. Program improvement efforts are often based on assessment results. However, assessment results are valid only when students give their best effort and serious participation. As such, students are required, as a condition of enrollment in any of the department’s courses, to participate in assessment activities and to give their best and honest effort in all assessment exercises administered by the department. Assessment activities administered in a course are considered a course requirement. This course requirement is no less important than is attendance, homework, or exams. Students who are absent when assessment exercises are conducted are required to make up the exercise. If it is determined that a student did not make a good faith effort to fulfill their assessment obligation, they will be required to repeat the exercise as a condition of passing the course.

11) Internships: The department encourages student participation in internships experiences that are relevant to the student’s degree and area of specialization. Increasingly, employers are seeking to hire individuals with relevant work experience. An internship is not required for graduation, but students without significant work experience, relevant to business, are strongly encouraged to complete at least one internship experience. The Department of Business Ad-
ministration and Economics limits the number of credits and internship experiences a student can complete to a maximum of 15 credits and two internship experiences. Students interested in completing an internship should contact the department’s career specialist at least several weeks prior to beginning the internship to understand program requirements and to complete required forms. A GPA of 2.75 is required to participate in the internship program.

12) Academic Advisement: Students will be assigned a faculty advisor when their Intent to Major or Declaration of Major Form is processed. Faculty advisors assist students in academic planning, but each student is ultimately responsible for knowing and understanding the degree requirements as specified in this catalog and on their Degree Audit Status Report (DARS), available on the Web. Students are required to meet with their advisor each semester and are expected to prepare a proposed schedule of classes for the following semester prior to meeting their advisor. Advisors assist each student by reviewing the courses that the student selects each semester and by answering questions about degree requirements, course sequencing, transfer course work, electives, careers, and graduate school. However, advisors will not create the student’s schedule for them. Students who do not contact their faculty advisor on a timely basis or who register for courses after their designated registration date may find themselves closed out of required courses, causing the student’s graduation date to be delayed. Students who fail to register during the designated registration period will not be added to closed sections or otherwise accommodated. As such, students are strongly advised to take seriously their obligation to register at the designated time.

13) Contacting Your Academic Advisor: The academic advisor to which each student is assigned appears at the top of each student’s Degree Audit Status Report (DARS), available on the Web. The advisor’s office hours will be posted on his or her door or are available from the department secretary at (585) 395-2623. Students should contact their advisor at least two weeks in advance of the registration period for the purpose of understanding how to schedule advisement. Some advisors work by appointment while others work on a drop-in basis. Voice and e-mail messages left for advisors should include the student’s name, phone number, e-mail address, and times when the advisor may contact the student. The department recognizes that there may be times when a student cannot meet with his or her designated faculty advisor because of work or class schedule conflicts. Students who are unable to arrange advisement with their designated advisor should call (585) 395-2623 to request an appointment with the department’s general advisement staff.

14) Career Advisement: The department is very committed to the success of its graduates, which includes obtaining good jobs related to the student’s degree. Students in the department’s programs have several sources of career-related support and advisement available to them, including a dedicated career specialist located in 110 Hartwell Hall. The department also offers a one-credit career planning seminar designed to help students develop a career plan and job-search strategy, as well as to learn about internship and graduate school opportunities and application processes. Additionally, SUNY Brockport’s Office of Career Services (Rakov Center) has an extensive reference library and a staff of career specialists who can help students identify career opportunities, develop their resume, prepare for interviews etc. Career Services office also sponsors on-campus interviews, job fairs, and graduate school information events.

15) Academic Dishonesty: The department offers degree programs designed to produce business professionals who meet the contemporary expectations and needs of employers who hire business majors. The need for business professionals who are trustworthy and ethical is paramount. As such, the department desires to have, as its students and graduates, individuals whose moral and ethical compass directs them to avoid behaviors associated with academic dishonesty (cheating). The department reserves the right to expel from its programs and courses any student who participates in blatant and premeditated acts of academic dishonesty. Academic dishonesty in its various forms is defined in the College publication Your Right to Know & Academic Policies and Procedures Handbook. Students enrolling in the department’s courses are responsible for familiarizing themselves with this publication.
16) **Enrollment Restrictions:** To ensure adequate capacity for its students, the department may place restrictions on course enrollments. Initial enrollment in 200- and 300-level ACC, BUS, and ECN courses is currently restricted to:

a. *Declared majors* in accounting, business administration, and international business.

b. Students who have declared an *Intent to Major* in accounting, business administration, and international business.

c. Students who have declared a minor in business administration or economics.

d. Students in certain majors that *require* business courses as part of the major. Students in this category may need to get permission from the department to register for their required business courses.

Students not meeting the requirements above will be allowed to register, on a space-available basis, after business transfer students have had the opportunity to register for their courses. This restriction on enrollment *does not* apply to summer and winter intersession courses.

**Business Administration Major**

The *Business Administration Major* prepares students to assume entry-level positions in an organization's accounting, financial, marketing and management systems. Students are able to specialize in accounting, finance, marketing, management, and pre-law.

**Business Administration Degree Requirements**

All business administration majors are bound by the policies, terms and conditions described earlier in the section above titled “Guidelines and Policies Pertaining to All Department Programs and Courses.” Business administration majors must complete all SUNY Brockport General Education requirements and degree requirements for students earning the Bachelor of Science. In addition to prescribed business course work, students majoring in business administration must complete a minimum of 60 credits of non-business, non-accounting course work. Up to nine credits of economics courses and up to six credits of statistics may be included in this 60-credit total.

Students earning a degree in business administration must complete four groups of courses: (1) prerequisites, (2) corequisites, (3) the business core, and (4) a specialization of their choosing (accounting, finance, management, marketing, or pre-law). See “Course Requirements for the Business Administration Major” below for details.

**Course-Grade and GPA Requirements for the Major in Business Administration**

Students pursuing the business administration major must satisfy four course-grade and GPA requirements as follows:

1. A student's cumulative GPA in the prerequisite courses is used to determine whether a student will be *admitted* to the major. Students must earn a minimum GPA of 2.5 in the prerequisite courses, with no grade lower than “C-,” to be granted admission to the major in business administration. Transfer grades are included in this GPA.

2. Students must earn a grade of at least “C-” in each course used to satisfy a business administration major requirement. This applies to the prerequisite, corequisite, business core, and specialization course requirements described in “Course Requirements for the Business Administration Major” below.

3. Students must earn an overall cumulative GPA of at least 2.0 in the SUNY Brockport courses used to satisfy the corequisite, business core, and specialization course requirements described in “Course Requirements for the Business Administration Major” below.
All General Education, upper-division (300/400 level) course work, and GPA requirements of SUNY Brockport must be met, including an overall cumulative GPA of at least 2.0 in all SUNY Brockport course work used to meet bachelor's degree requirements.

Course Requirements for the Business Administration Major
Students must satisfy prerequisite, corequisite, business core, and specialization course requirements as specified below. Students may complete multiple specializations, but should remember that a maximum of 54 credits of course work with a BUS prefix, including transferred courses, internships, and independent studies, can be applied towards the 120 credits required to graduate.

1. Prerequisite Course Requirements (21 credits, must be completed before declaring the major):
Prerequisite courses provide a foundation for upper-division course work. As described in “Course Grade and GPA Requirements for the Major in Business Administration” above, grades in prerequisite courses are used to determine admission to the major.

<table>
<thead>
<tr>
<th>Credits</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CIS 106</td>
<td>3</td>
</tr>
<tr>
<td>ECN 202</td>
<td>3</td>
</tr>
<tr>
<td>ECN 204</td>
<td>3</td>
</tr>
<tr>
<td>ACC 281</td>
<td>3</td>
</tr>
<tr>
<td>ACC 282</td>
<td>3</td>
</tr>
<tr>
<td>MTH 201</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 21 credits

Notes: (1) It is expected that full-time students will complete all prerequisite courses no later than the first semester of their junior year. Part-time students should complete prerequisites before undertaking a substantial number of 300-level business courses.

(2) An introductory statistics course from another discipline (e.g., psychology) may be substituted for ECN 204. However, credit towards graduation will be allowed for only one introductory statistics course.

2. Major Course Requirements
Completion of the business major requires a minimum cumulative GPA of 2.0 in the corequisite, core, and specialty area courses requirements specified in 2a, 2b, and 2c below. Students must earn a grade of at least “C-” in each course to satisfy degree requirements.

2a. Corequisites Requirements (9 credits)

<table>
<thead>
<tr>
<th>Credits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ENL 308</td>
<td>3</td>
</tr>
<tr>
<td>ECN 304</td>
<td>3</td>
</tr>
<tr>
<td>ECN 301</td>
<td>3</td>
</tr>
<tr>
<td>ECN 302</td>
<td>3</td>
</tr>
<tr>
<td>ECN 305</td>
<td>3</td>
</tr>
<tr>
<td>BUS 461</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 9 credits

Notes: (1) ECN 301 and ECN 305 may not both be taken for credit.
(2) ECN 302 is required for students who elect the finance specialty area.
(3) BUS 461 may be taken to satisfy the corequisite requirement, or as a management specialty elective, but not both.
2b. Business Core Requirements (21 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 325</td>
<td>Principles of Finance</td>
<td>3</td>
</tr>
<tr>
<td>BUS 335</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 345</td>
<td>International Business Environment</td>
<td>3</td>
</tr>
<tr>
<td>BUS 366</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BUS 375</td>
<td>Business Law I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 378</td>
<td>Business, Government, and Society</td>
<td>3</td>
</tr>
<tr>
<td>BUS 475</td>
<td>Strategic Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 21

Note: BUS 475 must be taken at SUNY Brockport.

2c. Business Specialty Options (12-15 credits)

Students must complete at least one of the specialty areas described below. Students may take additional specialty courses on an elective basis. Note that, if the accounting or pre-law specialization is selected, at least five courses must be completed. Regardless of which area of specialization is selected, students should consult with their academic advisor to determine which combination of specialty area courses is most consistent with the student’s professional goals. After matriculating at SUNY Brockport, students must take all 400-level business and economics courses at SUNY Brockport.

Accounting Specialty (15 credits)
The accounting specialization is intended for students who have an interest in an accounting-related career, but who are also certain that they do not wish to pursue licensing as a Certified Public Accountant. Students with an interest in accounting should give serious consideration to completing the major in accounting. The major in accounting satisfies the educational requirements to sit for the Uniform CPA Examination in New York and also provides a general business education similar to that provided by the Business Administration degree. To complete the accounting specialty, students must successfully complete a minimum of five courses from the list below.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 385</td>
<td>Intermediate Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ACC 386</td>
<td>Intermediate Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>ACC 388</td>
<td>Cost Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC 485</td>
<td>Federal Income Tax</td>
<td>3</td>
</tr>
<tr>
<td>ACC 486</td>
<td>Advanced Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC 487</td>
<td>Auditing</td>
<td>3</td>
</tr>
<tr>
<td>ACC 488</td>
<td>Federal Income Tax II</td>
<td>3</td>
</tr>
<tr>
<td>ACC 489</td>
<td>Accounting for Nonprofit Entities</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: (1) A minimum of 12 credits of upper-level accounting must be taken at SUNY Brockport, including all 400-level accounting courses.

Finance Specialty (12 credits)
Finance specialty courses are appropriate for students who have an interest in a finance-related career, including corporate financial analysis, cash management, brokerage, banking, investment banking, marketing financial instruments and insurance, and personal financial and estate planning. In addition to providing a sound foundation for graduate work in business and finance, the specialty also prepares students to pursue professional certification, including the Certified Cash Manager (CCM) exam, required for the CCM designation.

Finance students must take the following two courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 421</td>
<td>Investment Analysis and Portfolio Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 422</td>
<td>Corporate Financial Policy</td>
<td>3</td>
</tr>
</tbody>
</table>
Finance Students must also select two electives from the list below. At least one elective must be from group A.

**Group A Finance Electives**

- BUS 420 Short-term Financial Management 3
- BUS 428 Seminar in Finance 3
- BUS 445 International Financial Management 3

**Group B Finance Electives**

- ACC 385 Intermediate Accounting I 3
- ACC 388 Cost Accounting 3
- ECN 321 Money and Banking 3
- ECN 425 Financial Institutions 3

Notes: (1) Finance students must take ECN 302 to satisfy their corequisite requirement.
(2) Only one course from *Group B* may be used to satisfy finance specialty requirements. However, finance students are encouraged to take additional *Group B* courses as electives or to complete the economics minor.

**Management Specialty (12 credits)**

The management specialization prepares students for success in a wide variety of management related careers. Management students’ career options may include general management, human resource management, information systems management, operations management, retail management, and small business management. The specialty is also ideal for students seeking a general management degree, and is especially appropriate for those who envision going to graduate school and/or seeking promotions in their current career paths.

To complete the management specialty, students must take the following two courses:

- BUS 368 Management Skills 3
- BUS 369 Survey of Current Topics in Management 3

and two electives from the list below:

- BUS 317 Management Information Systems 3
- BUS 318 Advanced MIS 3
- ECN 361 Labor Market Analysis 3
- BUS 415 Data Management 3
- BUS 417 Systems Analysis and Design 3
- BUS 461 Production and Operations Management 3
- BUS 462 Quality Management Systems 3
- BUS 463 Small Business Management 3
- BUS 464 Electronic Commerce 3
- BUS 465 Human Resources Management 3
- BUS 467 Employment Law and Compliance 3
- BUS 468 Advanced Human Resources Management 3

**Marketing Specialty (12 credits)**

The marketing specialty prepares students for successful careers in business or marketing. Career opportunities in marketing are extensive and diversified, including opportunities in consumer and industrial sales, supply chain management, direct marketing, marketing management, marketing research, merchandising, promotion, public relations, sales management, and retail management. In addition, the marketing specialty provides an excellent foundation for students pursuing graduate studies in business or marketing. To complete the marketing specialty, students must successfully complete a minimum of four courses from the list below.

- BUS 432 Sales Management 3
- BUS 433 International Marketing 3
- BUS 434 Direct Marketing 3
BUS 435 Consumer Behavior 3
BUS 436 Marketing Research 3
BUS 437 Promotional Policy 3
BUS 438 Marketing Channels and Logistics 3
BUS 439 Retail Management 3
BUS 440 Business-to-business Marketing 3
BUS 441 Marketing Management 3

Pre-law Specialty (15 credits)
Business Administration is one of the most popular pre-law degrees. The pre-law specialization is designed specifically for business students interested in attending law school. Students completing the specialization are able to make informed decisions about pursuing a law degree, elevate skills and cognitive abilities that are key to success in a law-degree program, and develop a fuller understanding of various aspects of the law, the legal profession, and the legal environment. Students who choose not to enter a law program are able to pursue business-related careers and graduate programs.

To complete the pre-law specialty, students must complete the following three courses:

BUS 376 Business Law II 3
PLS 320 Law and the Legal Process OR CRJ 305 The Adjudication Process 3
CRJ 311 Criminal Law 3

and at least two electives from the list below:

ECN XXX: Any upper-division economics course not used to meet business corequisite requirements. 3
BUS 467 Employment Law and Compliance 3
CRJ 313 Constitutional Criminal Procedure 3
CRJ 315 Constitutional Law of the Detained 3
CRJ 438 Security Law 3
ENL 305 Advanced Composition 3
PHL 305 History of Modern Philosophy 3
PHL 342 Business Ethics OR PHL 321 Medical Ethics 3
PLS 324 Constitutional Law I 3
PLS 326 Constitutional Law II OR CRJ 483 Fair Trial/Free Press Conflicts 3

Notes: (1) Students may substitute an approved six-credit (or greater) internship for one of the elective courses listed above. PLS 492, 493, 495, and OAP 413 (in law practice), are all approved internship experiences. Other experiences may be used, provided that they are approved in writing by the student’s business advisor.

(2) Students completing this specialty should take PHL 102, 104, or 202 to satisfy a General Education humanities requirement. Students should consider taking all three courses on an elective basis.

(3) Students in the pre-law specialty are encouraged to complete a minor in economics, criminal justice, philosophy, or political science. Students may also wish to complete a second specialization in the business administration program.

(4) Students may wish to consult with Dr. William H. Dresnack, area coordinator for pre-law, in designing their program.

Major in Accounting
Students completing the major in accounting will have met the educational requirements to sit for the Uniform CPA Examination in New York state and the Certified Management Accountant (CMA) exam.

Note: When this catalog went to press, New York state was considering changes to its requirements for registered accounting programs; modifications to the current program are likely. Interested students should contact the department at (585) 395-2623 for the most current information regarding accounting program requirements.
Accounting Degree Requirements

All accounting majors are bound by the policies, terms and conditions described earlier in the section titled “Guidelines and Policies Pertaining to All Department Programs and Courses.” In order to graduate, and to meet the New York state requirements for taking the CPA exam, accounting majors must complete 60 credits of prescribed business and accounting course work plus 60 credits of non-business, non-accounting, liberal-arts course work. In completing the required 60 credits of non-business, non-accounting course work, students should ensure that they have met all SUNY Brockport General Education requirements and degree requirements for students earning a Bachelor of Science. Accounting majors must work closely with their advisor to determine the applicability of both their accounting and non-accounting courses towards the requirements for this degree.

Students majoring in accounting must complete four groups of courses: (1) prerequisites, (2) corequisites, (3) business core courses, and (4) a prescribed series of upper-division accounting courses. See “Course Requirements for the Accounting Major” below for details. Students without significant work experience relevant to accounting are strongly encouraged to also complete at least one internship experience.

Course-Grade and GPA Requirements for the Major in Accounting

Students pursuing an accounting major must meet six course-grade and GPA requirements as follows:

1. Any course with an ACC prefix, which is counted toward the degree requirements, must be completed with a grade no lower than “C.” This includes program prerequisites, corequisites, and upper-division course work.

2. Accounting majors must earn a grade of at least “C-” in all other courses used to satisfy a prerequisite, corequisite or business core requirement within the accounting major.

3. A student's cumulative GPA in the prerequisite courses is used to determine whether a student will be admitted to the major. Currently, students must earn a minimum GPA of 2.5 in the prerequisite courses, with no grade in an ACC-prefix course lower than “C” and no other grade lower than “C-.”

4. Students must earn an overall cumulative GPA of at least 2.0 in the SUNY Brockport courses used to satisfy prerequisite, business core, and upper-level accounting course requirements specified in “Course Requirements for the Accounting Major” below.

5. All General Education, upper-division (300/400 level) course work, and GPA requirements of SUNY Brockport must be met, including an overall cumulative GPA of at least 2.0 in all SUNY Brockport course work used to meet bachelor’s degree requirements.

6. No courses graded “Pass/Fail” or “Satisfactory/Unsatisfactory” may be counted towards accounting degree requirements.

Transfer Course and Grade Policy: Accounting students are bound by the policies concerning transfer courses and grades described earlier in the section titled “Guidelines and Policies Pertaining to All Department Programs and Courses.” A grade of “C” or higher is required to transfer accounting courses (ACC prefix); other required business and economics courses must be completed with a grade of at least “C-.” In general, the department’s accounting course numbered ACC 386 cannot be transferred. A minimum of 12 credits of 300/400-level accounting course work, including all required 400-level courses, must be taken at SUNY Brockport.

Participation in Assessment Activities: Accounting students are bound by the policies concerning assessment activities described earlier in the section titled “Guidelines and Policies Pertaining to All Department Programs and Courses.” In addition to other required assessment exams, accounting majors are required to participate in an Accounting Assessment Exam given in ACC 487 Auditing every semester.
Course Requirements for the Accounting Major

1a. Prerequisite Course Requirements (21 credits)

Students must earn a minimum GPA of 2.5 in the following seven prerequisite courses, with no grade lower than “C” in courses with an ACC prefix and no grade below “C-” in the other courses to earn admission to the major.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 106</td>
<td></td>
</tr>
<tr>
<td>ECN 201</td>
<td>3</td>
</tr>
<tr>
<td>ECN 202</td>
<td>3</td>
</tr>
<tr>
<td>ECN 204</td>
<td>3</td>
</tr>
<tr>
<td>ACC 281</td>
<td>3</td>
</tr>
<tr>
<td>ACC 282</td>
<td>3</td>
</tr>
<tr>
<td>MTH 201</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>21</strong></td>
</tr>
</tbody>
</table>

Note: An elementary statistics course from another discipline may be substituted for ECN 204. However, credit will be allowed for only one introductory statistics course.

2. Major Course Requirements

Completion of the accounting major requires a minimum cumulative grade point average of 2.0 in the courses taken under 2a, 2b, and 2c below, with no grade less than “C” in ACC-prefix courses and no grade less than “C-” in all other courses.

2a. Corequisite Courses (12 credits)

Professional Skills Corequisites:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENL 308</td>
<td>3</td>
</tr>
<tr>
<td>ACC 283</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Note: (1): ECN 301 and 305 may not both be taken for credit.

2b. Business Core Courses (24 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 325</td>
<td>3</td>
</tr>
<tr>
<td>BUS 335</td>
<td>3</td>
</tr>
<tr>
<td>BUS 345</td>
<td>3</td>
</tr>
<tr>
<td>BUS 366</td>
<td>3</td>
</tr>
<tr>
<td>BUS 375</td>
<td>3</td>
</tr>
<tr>
<td>BUS 376</td>
<td>3</td>
</tr>
<tr>
<td>BUS 475</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

AND one of the following four finance electives:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 420</td>
<td></td>
</tr>
<tr>
<td>BUS 421</td>
<td></td>
</tr>
</tbody>
</table>

Note: (1): ECN 301 and 305 may not both be taken for credit.
BUS 422    Corporate Financial Policy
ECN 321    Money and Banking
Total: 24

Note: BUS 475 Strategic Management must be taken at SUNY Brockport.

2c. Upper-level Accounting Courses (21 credits)                      Credits
ACC 385    Intermediate Accounting I                             3
ACC 386    Intermediate Accounting II                            3
ACC 388    Cost Accounting                                      3
ACC 485    Federal Income Tax                                    3
ACC 486    Advanced Accounting                                   3
ACC 487    Auditing                                             3
ACC 488    Federal Income Tax II                                 3
Total: 21

Note: All 400-level accounting courses must be taken at SUNY Brockport.

3. Other Requirements: In addition to the major course work described above, accounting majors must meet all of SUNY Brockport General Education requirements. Further, in order to meet the New York state requirements for sitting for the CPA exam, and for a degree to be conferred, accounting majors must complete 60 credits of non-business, non-accounting liberal arts course work. Students need to work closely with their advisor to understand which of their courses count towards this required 60 credits. Because of the 60-credit liberal arts requirement, accounting majors are limited in the number of additional (elective) business or accounting courses that can be used towards the 120 credits required for a degree. Implied is that, at most, a total of 60 credits of business and accounting course work will count towards the 120 credits required for a degree. Again, it is very important for students, especially transfer students, to work closely with their advisor to understand the limitations on the number of business and accounting courses that can be counted towards the 120-credit graduation requirement.

International Business and Economics Major

The international business and economics major provides an interdisciplinary education that includes foreign-language proficiency and cross-cultural awareness. Students gain knowledge and develop skills relevant to conducting business in the international domain. Graduates are prepared for careers with organizations with international operations.

International Business Degree Requirements

All international business majors are bound by the policies, terms and conditions described earlier in the section titled “Guidelines and Policies Pertaining to All Department Programs and Courses.” International business majors must complete all SUNY Brockport General Education requirements and degree requirements for students earning a Bachelor of Arts. In addition to prescribed business course work, students majoring in international business must complete a minimum of 60 credits of non-business, non-accounting course work. Up to nine credits of economics courses and up to six credits of statistics may be included in this 60-credit total.

The international business and economics major requires completion of 15 credits of prerequisite courses (I below), 27 credits of international business core courses (II below), foreign-language proficiency at the 212 (four-semester) level or higher (see III below), 12 credits of cross-cultural core courses (IV below), and a significant foreign experience (V below). See “Course Requirements for the International Business and Economics Major” and “Course-Grade and GPA Requirements for the International Business and Economics Major” below for details.
Course-Grade and GPA Requirements for the International Business and Economics Major

Students pursuing the international business and economics major must satisfy four course-grade and GPA requirements as follows:

(1) A student’s cumulative GPA in the prerequisite courses is used to determine whether a student will be admitted to the major. Students must earn a minimum GPA of 3.0 in the prerequisite courses, with no grade lower than “C-,” to declare the major in international business and economics.

(2) Students must earn a grade of at least “C-” in each course used to satisfy prerequisite and international business core courses specified in “Course Requirements for the International Business and Economics Major” below.

(3) Completion of the international business and economics major requires an overall cumulative GPA of 2.0 in the courses used to satisfy the international business core, foreign-language, cross-cultural core, and foreign experience requirements specified in “Course Requirements for the International Business and Economics Major” below.

(4) All General Education, upper-division (300/400-level) course work, and GPA requirements of SUNY Brockport must be met, including an overall cumulative GPA of at least 2.0 in all SUNY Brockport course work used to meet bachelor's degree requirements.

Course Requirements for the International Business and Economics Major

Students must satisfy (1) prerequisite, (2) international business core, (3) cross-cultural, (4) language, and (5) foreign-experience requirements as specified below.

I. Prerequisite Course Requirements (15 credits, must be completed before declaring the major)

Prerequisite courses provide a foundation for upper-division course work. As described in Course Grade and GPA Requirements for the Major in International Business above, grades in prerequisite courses are used to determine admission to the major.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECN 201</td>
<td>Principles of Economics (Micro)</td>
<td>3</td>
</tr>
<tr>
<td>ECN 202</td>
<td>Principles of Economics (Macro)</td>
<td>3</td>
</tr>
<tr>
<td>ECN 204</td>
<td>Introduction to Statistics</td>
<td>3</td>
</tr>
<tr>
<td>ACC 281</td>
<td>Introduction to Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MTH 2XX</td>
<td>Calculus-level Math requirement</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 15

Notes:

(1) It is expected that full-time students will complete all prerequisite courses no later than the first semester of their junior year. Part-time students should complete prerequisite before undertaking a substantial number of 300-level business courses.

(2) The MTH 2XX requirement is typically satisfied by taking Calculus I (MTH 201), Business Calculus (MTH 221), or Finite Math (MTH 245). However, any mathematics course at or above the level of MTH 201 (excluding MTH 243, 313, and 441) can be used to satisfy the math requirement.

(3) Students are encouraged to take ACC 281 and 282.

(4) An introductory statistics course from another discipline (e.g., psychology) may be substituted for ECN 204. However, credit towards graduation will be allowed for only one introductory statistics course.
II. International Business Core Requirements (27 credits)  
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 317</td>
<td>Introduction to Management Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>BUS 325</td>
<td>Principles of Finance</td>
<td>3</td>
</tr>
<tr>
<td>BUS 335</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 345</td>
<td>International Business Environment</td>
<td>3</td>
</tr>
<tr>
<td>BUS 433</td>
<td>International Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 445</td>
<td>International Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>ECN 443</td>
<td>International Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECN 453</td>
<td>International Business Seminar</td>
<td>3</td>
</tr>
<tr>
<td>BUS 462</td>
<td>Quality Management Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 27

III. Foreign Language (3 or more credits assumed)  
One 212 level or higher course in a foreign or second language.

IV. Cross-cultural Core (12 credits)  
Four cross-cultural courses (see Suggested Cross-cultural Courses below)  

Cross-cultural courses are typically upper division, internationally focused, social science courses focusing on current cultural issues. With the written approval of the student’s advisor, an appropriate internship may also be used to satisfy up to six hours of this requirement.

V. Additional Requirement: Foreign Experience (required for graduation)  
Students are required to participate in a significant foreign experience. Subject to written approval of the student’s advisor and the department, this requirement can be satisfied by (1) completing an overseas (foreign country) internship, (2) participating in a study abroad program, (3) completing an appropriate domestic internship (typically with a local business heavily engaged in international commerce), or (4) completion of two 300-level courses in a foreign language with a grade of “C-” or better in each course. International business majors may not graduate without completing the foreign experience requirement.

In completing the foreign experience requirement, international business and economics majors can take advantage of one of SUNY Brockport’s many opportunities to study abroad. Overseas programs may take the form of traditional studies or an internship program. With one of the largest study abroad programs in the nation, SUNY Brockport has programs in England, France, Costa Rica, Mexico, Australia, Ghana, Jamaica, Russia, Germany, The Netherlands, Oxford, and many other locations. Summer programs include countries such as Greece, Australia, Mexico, England, and Costa Rica. Internship opportunities are available with many organizations and businesses in Australia, Canada, England, Mexico, Costa Rica, Scotland and Germany.

Suggested Cross-cultural Courses  
The following courses are approved for use in satisfying cross-cultural core requirements. Additional and/or alternative courses may be approved by the department for inclusion in the cross-cultural core.

- ANT 322 Culture and Power
- ANT 330 (AJ) World Poverty and Underdevelopment
- ANT 332 (AJ) China in Transition
- ANT 402 Latin America
- ANT 404 Cultures of Sub-Saharan Africa
- CMC 418 Cross-cultural Communication
- ENL 365 Asia and the West
- ENL 366 Arabic Culture and the West
- FCE 420 Multiculturalism in the USA
- HST 300 Modern Europe
- HST 325 Modern Irish History
Minor in Business Administration
All students pursuing the minor in business are bound by the policies, terms and conditions described earlier in the section above titled “Guidelines and Policies Pertaining to All Department Programs and Courses.” A minor in business consists of 21 credits of selected business and economics course work as described in “Course Requirements” below, with a minimum of 12 credits of course work completed at SUNY Brockport. A student’s cumulative GPA, in the Brockport courses used to satisfy requirements of the minor, must be at least 2.0.

Declaring the Minor in Business
To declare the minor in business administration, students are required to have (1) a 3.0 GPA or better on a minimum of 30 credits, and (2) a grade of “B” or better in one of the following math courses: MTH 121, 122, 201, 202, 221, 245, or 281. Students not meeting the GPA requirement may petition the department to be allowed to declare the minor. Student grades, major, and space-available will be considered when reviewing a petition.

Students should declare the minor in business immediately after completing any one of the required courses. It is important to declare a minor as soon as possible as it will allow the department to plan
for enrollments and ensure that an adequate number of course seats are available for students min-
noring in business. The forms required to declare the minor are available in 119 Hartwell Hall.

**Course Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECN 201 or 202 Introductory Economics</td>
<td>3</td>
</tr>
<tr>
<td>(or ECN 100)</td>
<td></td>
</tr>
<tr>
<td>ACC 280 Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ECN 204 Introduction to Statistics or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>BUS 325 Principles of Finance</td>
<td>3</td>
</tr>
<tr>
<td>(prerequisites include MTH 121 or equivalent)</td>
<td></td>
</tr>
<tr>
<td>BUS 335 Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 365 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>One additional BUS/ECN course at the 300/400 level, excluding BUS 366</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>21</strong></td>
</tr>
</tbody>
</table>

Notes: (1) Students may substitute the ACC 281/282 sequence for ACC 280.
(2) An introductory statistics course from another discipline (e.g., psychology) may be substituted for ECN 204. However, credit towards graduation will be allowed for only one introductory statistics course.
(3) Students must complete the minor with an overall GPA of 2.0 in the courses taken at SUNY Brockport.
(4) Students majoring in accounting or international business and economics may not declare a business minor.
(5) The number of minors may be limited to ensure an adequate number of seats for business majors; students should declare the minor as soon as possible to ensure admission.

**Advisement:** The student’s advisor provides pre-registration approval for courses in the minor. Department faculty can serve as informal advisors in helping the student select the required upper-division elective course.

**Minor in Economics**

All students pursuing a minor in economics are bound by the policies, terms and conditions described earlier in the section above titled “Guidelines and Policies Pertaining to All Department Programs and Courses.”

**A. Economics Minor with a Liberal Arts Major**

Eighteen credits must be successfully completed, including: ECN 201, 202, 301, 302, and two additional upper-division economics courses. ECN 305 may be substituted for ECN 301, but both courses may not be taken for credit. A minimum of nine credits of course work must be completed at SUNY Brockport. A student’s cumulative GPA, in the Brockport courses used to satisfy requirements of the minor, must be at least 2.0.

**B. Economics Minor with a Business Administration Major**

ECN 201, 202, 302, 304, and 301 or 305, plus one additional upper-division economics course must be successfully completed. A minimum of nine credits of course work must be completed at SUNY Brockport. A student’s cumulative GPA, in the Brockport courses used to satisfy requirements of the minor, must be at least 2.0.

**Departmental course descriptions are listed under Accounting (ACC), Business administration (BUS) and Economics (ECN):**

**Note:** Whenever the terms “MTH 121 or higher” or “MTH 201 or higher” are used, the following math courses are excluded: MTH 243, 313 and 441.
ACCOUNTING COURSES

ACC 280 Introduction to Accounting (B). Prerequisite: MTH 121 or higher. Surveys aspects of both financial and management accounting from a user's perspective. Examines topics such as the accounting cycle, and preparation and analysis of financial statements and management reports. Intended for non-majors and does not meet the requirements of any of the department's majors. 3 Cr. Every Semester.

ACC 281 Introduction to Financial Accounting (B). Prerequisite: MTH 121 or higher. Provides an introduction to financial statements prepared under generally accepted accounting principles and how such statements are used. Specifically covers preparation and analysis of financial statements and related footnote disclosures, and examination of recording and reporting elements of financial statements. 3 Cr. Every Semester.

ACC 282 Introduction to Managerial Accounting (B). Prerequisites: ACC 281 and MTH 121 or higher. Provides an introduction to accounting information used by business managers to make short- and long-term decisions. Specifically covers cost accumulation and product costing, and survey of cost/volume/profit analysis, budgeting, standard costing and variance analysis, choice of business entity, forms of business financing, and introduction to basic income taxation. 3 Cr. Every Semester.

ACC 283 Introduction to Accounting Systems and Software (B). Prerequisites: ACC 281 and CIS 106. Provides an introduction to accounting information systems used by businesses to accumulate accounting data, and the software used to manage the process. Specifically covers the accounting cycle, sales and cash receipts, purchases and cash payments, inventory management, and payroll. Uses software such as general ledger and financial statement applications, spreadsheets, word processing, and an Internet browser. 3 Cr. Every Semester.

ACC 385 Intermediate Accounting I (B). Prerequisites: ACC 282 and MTH 201 or higher. Covers the accounting cycle in depth, generally accepted accounting principles, and preparation of general purpose financial statements and accounting measurements for cash, receivables, current liabilities, inventories, plant assets, and intangible assets. 3 Cr. Every Semester.

ACC 386 Intermediate Accounting II (B). Prerequisites: ACC 385, ECN 204, and MTH 201 or higher. Emphasizes in-depth reporting for stockholders' equity and accounting for corporate bonds and long-term investments, revenue recognition, leases, pensions, statement of cash flows, and income tax allocations. 3 Cr. Every Semester.

ACC 388 Cost Accounting (B). Prerequisites: ACC 282, and MTH 201 or higher. Covers analysis and reporting of internal accounting problems of a business dealing with cost behavior, cost accounting systems, budgeting, and performance measurement. Includes topics such as cost-volume-profit analysis, variance analysis, standard costing procedures, and managerial decision analysis. 3 Cr. Every Semester.

ACC 389 Accounting Profession Seminar (B). Prerequisites: ACC 281 and ACC 282. Corequisite: ACC 385. Develops the professional acumen of accounting students, consistent with the expectations of accounting firms. Examines accounting as a profession, focusing on expected professional comportment and work behaviors of accounting professionals. Requires students to conform to a mandatory dress code and to participate in events sponsored by professional accounting organizations. Accounting majors should complete this seminar in their junior year. 1 Cr. By Arrangement.

ACC 485 Federal Income Tax (B). Prerequisite: ACC 385. Covers fundamental income tax principles such as gross income, personal and business deductions, capital gains and losses, depreciation methods, and credits against the tax. Also discusses tax-free exchanges for residential and commercial property. 3 Cr. Every Semester.

ACC 486 Advanced Accounting (B). Prerequisite: ACC 386. Studies accounting for partnerships, branch operations, consolidated financial statements, and multi-national corporations. 3 Cr. Every Semester.

ACC 487 Auditing (B). Prerequisite: ACC 386. Studies the theory and practice of auditing, including the accountant's methods and procedures used to obtain the necessary evidence upon which to base an opinion regarding the fair representations of a client's financial statements. 3 Cr. Every Semester.

ACC 488 Federal Income Tax II. Prerequisite: ACC 485 or instructor's permission. Examines the federal income taxation of corporations and partnerships. Includes topics such as corporate organization, dividend and other distributions, partial and complete corporate liquidation, the accumulated earnings tax, the personal holding company tax, taxation of S-corporations, and taxation of partnership interests. 3 Cr.

ACC 489 Accounting for Nonprofit Entities (B). Prerequisite: ACC 386. Examines the unique characteristics of government and non-profit entities, including their use of funds and account groups. Emphasizes the accounting of various funds and account groups as well as other budgeting, classification, and financial reporting issues. 3 Cr. Spring.

ACC 498 Accounting Internship (A). Prerequisites: At least 12 credits of accounting course work
completed; and 2.75 in major, 2.5 overall. Provides supervised experience in an accounting environment, with an opportunity to apply concepts learned in accounting course work. Also provides an opportunity for students to better understand (1) accounting career opportunities, (2) the accounting work culture, (3) the high level of professional acumen required to be successful in accounting. Recommended for all accounting students without accounting work experience. 1-6 Cr. Every Semester.

ACC 499 Independent Study in Accounting (A). Prerequisites: ACC 281, 282, and 385 or instructor's permission. Allows students to pursue accounting topics and/or projects beyond those covered in regularly scheduled accounting courses. Arranged in consultation with the instructor-sponsor who will supervise and direct the student. Registration requires completion of forms prior to the beginning of the semester. 1-6 Cr. Every Semester.

BUS Administration Courses

BUS 317 Introduction to Management Information Systems (A,T). Prerequisite: CIS 106, ACC 280 or ACC 281, or instructor's permission. Completion of ENL 308 strongly advised. Explores the use of information systems in organizations. Examines how different types of information systems are used to enhance performance of organizations, management, and employees. Introduces the system development process and the management of information system resources, including data, hardware, software, infrastructures and personnel. Continues to develop students end-user user computing skills and assumes introductory-level knowledge of MS Office applications. 3 Cr. Every Semester.

BUS 318 Advanced Management Information Systems (A,T). Prerequisite: BUS 317 or instructor's permission. Addresses contemporary issues, methods, and applications reflecting emerging trends and technology in the field of Management Information Systems. Emphasizes knowledge and skills relevant to the contemporary workplace, including end-user and business applications. Utilizes relevant literature and instructional materials, analysis of cases and situations, and use of software packages as appropriate. Topics change over time so students should check with instructor prior to registration to confirm interest in subjects to be addressed. 3 Cr.

BUS 325 Principles of Finance (A). Prerequisites: ACC 280 or 281; ECN 201, 202, and 204; and MTH 121 or higher. Corequisites: CIS 106 (or ability to use spreadsheets), ENL 308 or instructor's permission. Provides a foundation in corporate financial decision making. Covers the business environment, time value of money, risk and diversification, market efficiency and valuation. Applies these concepts to financial analysis and planning, capital budgeting, and financing. (Note: Declared minors in business may enroll in the course with ECN 100 or 201 or 202.) 3 Cr. Every Semester.

BUS 335 Principles of Marketing (A). Helps students develop an understanding of marketing in an organization through analyses of role, structure and processes, as they relate to proprietary and public organizations; and covers selection of markets, service/products, and analysis of consumer needs and wants. 3 Cr. Every Semester.

BUS 345 International Business Environment (A). Analyzes issues associated with international business and trade, the environmental aspects of foreign countries, the ability to promote trade with other countries, and the sovereign rights of other nations and their people. 3 Cr. Every Semester.

BUS 365 Principles of Management (A). Acquaints students with an overall understanding of management. Discusses and explores the classic function of management including motivating, planning, organizing, influencing and controlling. Uses various methods to present the material. 3 Cr. Every Semester.

BUS 366 Organizational Behavior (A). Prerequisites: Declared major or departmental permission. Completion of ENL 308 strongly advised. Ability to use Internet search engines, MS Word, and PowerPoint assumed. Examines the interaction between micro-level individual behavior and characteristics and the macro-level dynamics of an organization, highlighting management functions that facilitate motivation, control, and success of the organization. Includes topics such as human motivation, group dynamics, communications, organizational development, organizational culture, diversity, cross-cultural, and global issues. Open to majors and intents only, business and accounting. 3 Cr. Every Semester.

BUS 368 Management Skills (A). Prerequisites: CIS 106, ENL 308, and BUS 366. Declared majors only. Working knowledge of Internet search engines, MSWord, PowerPoint, and ability to locate and retrieve full-text online articles is assumed. Introduces students to the importance of building skills key to effective management, including public speaking skills and presentation development, teambuilding, time management, career management, meeting management, networking, and communications skills. Also includes self-assessment, business etiquette, career values, sexual harassment, diversity, and interviewing. 3 Cr. Every Semester.

BUS 369 Management Topics Seminar (A). Prerequisites: Declared business major, BUS 366 and ENL 308, or instructor's permission. Covers
key issues important to any individual interested in a management career. Includes evolving topics and currently includes quality, re-engineering, diversity, compliance, downsizing, outsourcing, supplier development, compliance issues, trends in management education, etc. Helps students identify areas of specific interest within management and aids them in selecting their remaining electives. 3 Cr. Every Semester.

BUS 375 Business Law I (A). Provides basic knowledge of the legal environment of business, including, but not limited to, the judicial system of jurisprudence and the substantive laws of torts, contracts and agency. 3 Cr. Every Semester.

BUS 376 Business Law II (A). Prerequisite: BUS 375 or instructor’s permission. Includes topics such as sales, negotiable instruments, secured transactions, bankruptcy, personal property, business entity concepts, real property, wills and trusts. 3 Cr. Every Semester.

BUS 378 Business, Government and Society (A). Prerequisites: Declared major or minor, BUS 375, and ENL 308. Investigates the balance between competitiveness, ethics, and various societal issues, developing the student’s ability to critically analyze complex ethical and societal topics. Includes these topics: identification and management of public issues, ethical frameworks and their relevance to business, diversity, social responsibility, ecology and the environment, public policy, and the justification for and current status of government regulation and oversight of business. 3 Cr. Every Semester.

BUS 389 Business Careers and Professional Development Seminar (B). Prerequisites: Junior and declared intent or major. Students should complete this seminar before their senior year. Helps students develop their own competitive profile and plan for post-graduation. Develops the student’s understanding of the career resources available to them, career paths an opportunities in business, and how to find and prepare for jobs and interviews. Internship and graduate school options are also discussed. 1 Cr. Every Semester.

BUS 415 Data Management (A). Prerequisite: BUS 317 or instructor’s permission. Develops knowledge and skills with regard to issues of data management and database design. Focuses on data management issues of importance to business organization including database administration, security, and privacy. Introduces emerging data management issues including data warehousing, data mining, and shared database access through a LAN or the Web. Continues to develop student skills with database software. 3 Cr. Fall.

BUS 417 Systems Analysis and Design (A). Prerequisite: BUS 317 or instructor’s permission. Examines the phases within the systems life cycle for development of an information system application. Emphasizes the standards, tools and techniques required in the analysis of information requirements and in logical design. 3 Cr.

BUS 420 Short-term Financial Management (A). Prerequisite: BUS 325 or instructor’s permission. A CCM® Associate course. Provides a comprehensive introduction to short-term financial management and working capital management including cash management systems, management of corporate liquidity, receivables and payables management, banking and payments systems. Allows students to successfully complete the course with a grade of “B” or better to be currently eligible to take the Certified Cash Manager’s (CCM®) exam and acquire the CCM® designation. 3 Cr. Fall.

BUS 421 Investment Analysis and Portfolio Management (A). Prerequisite: BUS 325 or instructor’s permission. Provides an introduction to modern investment theory and analysis. Covers the organization and functioning of securities markets, risk and return relationships, modern portfolio theory, asset pricing models, efficient markets and arbitrage concepts, stocks, bonds, options, futures, mutual funds, convertibles, and warrants. 3 Cr. Every Semester.

BUS 422 Corporate Financial Policy (A). Prerequisite: BUS 325 or instructor’s permission. Corequisite: ECN 304. Provides an in-depth coverage of corporate financial analysis and policy stressing agency theory, valuation and market efficiency, capital budgeting under conditions of certainty and uncertainty, capital structure, dividend structure, dividend policy, corporate restructuring and leasing. Uses extensive data and spreadsheet analysis. 3 Cr. Every Semester.

BUS 428 Seminar in Finance (A). Prerequisite: BUS 421 or 422, or instructor’s permission. Addresses recent developments in the area of corporate financial policy and/or investment analysis. Includes a review of recent literature, analysis of cases and situations, and use of software packages as appropriate. Topics rotate, so students should check with instructor to confirm interest in the subjects to be addressed. Offered every year, typically in the spring. 3 Cr.

BUS 431 GEMS Seminar (A). Prerequisite: BUS 335 or instructor’s permission. Gives students hands-on exposure to a wide variety of specific, business-related topics that must be considered when conducting business in other countries. Includes these topics: marketing, logistics, databases and other information sources, the internet, political and economic factors, legal considerations, banking and financial implications. Primarily a seminar format. 3 Cr.

BUS 432 Sales Management (A). Prerequisite: BUS 335. Treats the responsibilities and challenges of man-
aging the sales function. Stresses analytical and interpersonal skills, including planning, organizing, directing, motivating, and controlling a sales organization. Examines legal and ethical issues. 3 Cr. Spring.

BUS 433 International Marketing (A). Prerequisite: BUS 335. Examines and analyzes the similarities and differences among domestic and foreign markets. Includes in the analysis the consumers, 4 Ps (product, price, place, promotion), uncontrollable variables, and implementation of the marketing concept in a foreign market. Also investigates the coordination and integration of a firm's national marketing program with its foreign marketing program. 3 Cr. Spring.

BUS 434 Direct Marketing (A). Prerequisite: BUS 335. Discusses one of the fastest growing marketing sectors. Covers database creation and management, direct mail, catalogs, telemarketing, and use of the media as stand-alones or integrated into a marketing mix. 3 Cr.

BUS 435 Consumer Behavior (A). Prerequisite: BUS 335. Explores how individual and group behavior affects marketing decisions, and how to market the right product/service to proper market segments. Relates behavior characteristics to product, price, place and promotion. 3 Cr. Fall.

BUS 436 Market Research (A). Prerequisites: BUS 335 and ECN 304. Covers marketing information; proper techniques for problem identification, and use of research methodology and techniques to define problems, using primary and secondary data sources. 3 Cr. Spring.

BUS 437 Integrated Marketing Communications (A). Prerequisites: BUS 335 and 435. Provides an overview of promotional and communications policies, the relationship between promotional and communications policies and marketing process, and the policies in the context of the behavioral sciences. Discusses how to evaluate, select and implement integrated forms of communication to the publics served by the organization. 3 Cr. Spring.

BUS 438 Supply Chain Management (A). Prerequisite: BUS 335. Discusses the management of resource transformations between raw material and end user, via value added in manufacturing, marketing, or logistics. 3 Cr. Fall.

BUS 439 Retail Management (A). Prerequisite: BUS 335. Covers basic marketing functions of merchandising, promotion, control, and organization as they relate to retail organizations. 3 Cr.

BUS 440 Business-to-business Marketing (A). Prerequisite: BUS 335. Studies industrial organizations, policy formation, and the use of buying and selling in industrial and governmental organizations, as well as buyer-seller relationships. 3 Cr. Fall.

BUS 441 Marketing Management (A). Prerequisites: Marketing specialty major and senior status. Provides an introduction to marketing problems as they relate to proprietary and public organizations, and decisions needed in product and service pricing, distribution and promotional strategy. Uses case analyses. 3 Cr. Spring.

BUS 445 International Financial Management (A). Prerequisite: BUS 345 or instructor's permission. Covers the theories and practical aspects of international financial management. Includes topics such as international payments mechanism, exchange market operations, arbitrage and hedging, spot and forward exchange, long-term international capital movements, international financial institutions, accounting, and taxation. 3 Cr. Spring.

BUS 461 Production and Operations Management (A). Prerequisites: CIS 106 (or equivalent) and ECN 304. Completion of ENL 308 strongly advised. Focuses on issues and techniques associated with managing the day-to-day operations of the firm. Includes these topics: decision making, forecasting, project management, quality, inventory management, production planning, production methods, product design, location planning, facilities layout, scheduling, purchasing, and capacity planning. 3 Cr. Every Semester.

BUS 462 Quality Management Systems (A). Prerequisites: ECN 204 and BUS 345. Completion of ENL 308 strongly advised. Discusses and contrasts various organizational systems and behaviors that promote product and service quality. Investigates micro-level individual behaviors and macro-level organizational issues and policies that impact quality. Helps students understand how some management and organizational systems represent barriers to quality. Explores how approaches to quality differ across the international business community. Includes these topics: TQM, continuous improvement, process reengineering, benchmarking, statistical process control, and ISO standards. 3 Cr. Spring.

BUS 463 Small-business Management (A). Prerequisite: Ability to use MS Word, Excel, and PowerPoint. Declared business major or minor only. For the prospective small business manager who wants to understand issues associated with starting, building and maintaining a successful enterprise. Includes topics helpful to the successful operation of the small business, especially finance, marketing, production, personnel, inventory control, purchasing, planning, cost control, computer systems, and entrepreneurial leadership. 3 Cr.

BUS 464 Electronic Commerce (A). Prerequisite: BUS 317 or instructor's permission. Business majors must complete ENL 308 before enrolling. Explores issues, methods, and opportunities associated with electronic forms and methods of busi-
ness focusing on Web-based commerce. Includes these topics: business models, transaction processing, marketing issues, legal issues, security concepts and issues, hardware, software, technology, and business planning, and management issues. Teaches students the various aspects of designing and running an Internet business. 3 Cr. Spring.

BUS 465 Human Resources Management (A). Prerequisites: BUS 365 or 366, and ability to use a word processor, PowerPoint, and the Internet. Completion of ENL 308 is advised. Undertakes a broad survey of the human resources management issues faced by contemporary organizations. Includes these topics: human resource planning, recruitment, selection, orientation, training and development, performance management, compensation and benefits, employment law, unions, and collective bargaining. Students should take BUS 465 before enrolling in BUS 467 or 468. 3 Cr. Fall.

BUS 467 Employment Law and Compliance (A). Prerequisites: CIS 106; BUS 366, 375, and 368; and ENL 308. Examines the relationship between public policy and current human resource management practices. Places major emphasis on developing and understanding of the legal rights and responsibilities of employees and employers in the employment relationship. Considers the content, enforcement, interpretation, and day-to-day application of employment laws. It is recommended that students complete BUS 465 prior to taking this course. 3 Cr.

BUS 468 Advanced Human Resources Topics (A). Prerequisite: CIS 106, BUS 465 or instructor’s permission. Explores and further elaborates on key topics introduced in BUS 465. Includes these topics: recruitment and selection, performance management and development, and compensation and benefits administration. Places particular emphasis on developing skills and knowledge necessary for entry-level positions in human resources management. 3 Cr. Spring.

BUS 475 Strategic Management (A). Prerequisites: BUS 325, 335, 345, and 366; ENL 308; declared business major; and senior status. Assumes the student’s ability to use spreadsheet and word-processing software. Emphasizes the use of theories and models to solve complex business problems and prepare comprehensive case analyses. 3 Cr. Every Semester.

BUS 490 Senior Thesis Research (A). Prerequisites: GPA of 3.25, declared major, and 18 credits of upper-division business courses. Part of a two-semester course of study aimed at providing students an opportunity to acquire in-depth knowledge in a specialized area. Allows students to select a faculty member willing to serve as their thesis advisor. Requires students to identify a research topic, and conduct background research to include the preparation of an introduction and bibliography. Requires the data to be collected by the end of the semester. 3 Cr. By Arrangement.

BUS 491 Senior Thesis (A). Prerequisite: Completion of BUS 490. Provides a continuation of BUS 490. Requires students to analyze collected data, explain the results and prepare conclusions. Requires the thesis to be in proper thesis format according to departmental procedures. 3 Cr. By Arrangement.

BUS 498 Internship (A). Prerequisites: 2.75 GPA in major and overall 2.5 GPA. Provides supervised experience in a business environment. 3 or 6 Cr. By Arrangement Through the Department’s Internship Coordinator.

BUS 499 Independent Study in Business Administration (A). Entails special projects in business under the direction of individual staff members. Arranged in consultation with the instructor-sponsor and in accordance with the procedures of the Office of Academic Advisement prior to registration. 1-6 Cr. By Arrangement.

Economics Courses

ECN 100 Contemporary Economic Problems (A,S)1. Covers economic reasoning through the application of essential economic principles, basic principles underlying competing economic systems, and differences between macro- and micro-economic theory as applied to current issues confronting the American economic system. 3 Cr. Every Semester.

ECN 201 Principles of Economics - Micro (A). Prerequisite: MTH 121 or equivalent or instructor’s permission. Covers determination of prices, demand and supply, behavior of the firm, and resource allocation. 3 Cr. Every Semester.

ECN 202 Principles of Economics - Macro (A). Covers problems of the aggregate economy and the policies used to control those problems. 3 Cr. Every Semester.

ECN 204 Introduction to Statistics (A). Covers basic concepts of statistical analysis, including descriptive statistics, probability and expected value, sampling, and estimation. Note: Students who have received credit for BIO 431, MTH 243, PSH 202, PLS 300, SOC 200, or transfer credit for an elementary statistics course at another institution may waive ECN 204. Students will not receive credit for both ECN 204 and another elementary statistics course. 3 Cr. Every Semester.

1ECN 100 is a one-semester course in micro- and macro-economics. ECN 100 does not meet the requirements for any major in the department.
ECN 301 Intermediate Microeconomics (A). Prerequisites: MTH 121, and ECN 201 and 202. Covers the basic tools and techniques of microeconomic analysis, the theory of consumer behavior and demand, theory of the firm and market equilibria, and input markets. 3 Cr. Every Semester.

ECN 302 Intermediate Macroeconomics (A). Prerequisites: MTH 121, and ECN 201 and 202. Covers the basic tools of macroeconomic analysis, including the determination of national income, employment and price levels, and an analysis of macroeconomic stabilization policies. 3 Cr. Every Semester.

ECN 304 Intermediate Statistics (A). Prerequisites: MTH 121 and ECN 204 or equivalent. Includes inferential statistics, index numbers, regression and correlation analysis, time series analysis, and chi-square tests. Emphasizes both the proper use and possible abuse of statistical methods in the context of business and economic applications. 3 Cr. Every Semester.

ECN 305 Managerial Economics (A). Prerequisites: MTH 121, and ECN 201, 202 and 204 (each with a "C-" or above). Provides an introduction to the economic analysis of business decisions. Includes the application of supply and demand, application of demand theory, application of production and cost concepts, applications of various theories of pricing, and application of incremental analysis. 3 Cr. Every Semester.

ECN 321 Money and Banking (A). Prerequisites: ECN 201 and 202. Covers the role of money in the modern economy, emphasizing the role of depository institutions, and the evolution of the central banking structure together with domestic and international monetary policy. 3 Cr. Every Semester.

ECN 333 Health Economics (A). Prerequisite: ECN 201 or 111. Analyzes both narrow questions, such as the distribution, efficiency and equity of health delivery systems, and broader issues of the relation between public health and economic activity. 3 Cr. Spring

ECN 361 Labor Market Analysis (A). Prerequisites: ECN 201 or 111 and instructor’s permission. Focuses on the issues and the analysis of labor markets. Includes wage determination and income distribution, skill structure of the workforce, unionism and unemployment. 3 Cr.

ECN 425 Financial Institutions (A). Prerequisite: ECN 302. Covers financial institutions, their operations, and the interrelationships among those that operate in the domestic and international money and capital markets, with emphasis on current problems and issues. 3 Cr. Every Year.

ECN 443 International Economics (A). Prerequisites: ECN 201 and 202. Uses basic economic tools to study pure trade theory and interrelations between the domestic and the international economy. Examines the basis of trade; gains from trade; theory and practice of protection; nature, disturbance, and readjustment of the balance of payments; international monetary systems; internal and external balance; macroeconomic coordination; exchange rate variation; and other topics. 3 Cr. Spring.

ECN 453 International Business Seminar (A). Prerequisites: ECN 201 and 202, and BUS 345. Addresses contemporary and emerging issues in international business, including strategic issues. 3 Cr.

ECN 461 Human Resource Economics (A). Prerequisites: ECN 201 and 202. Covers the development and utilization of labor as a productive resource. Has a policy emphasis. 3 Cr.

ECN 485 Economics Research (A). Prerequisites: ECN 301, 302, 304, and one additional upper-division economics course. Emphasizes the skills of inquiry, analysis, and communication required of a professional economist. Helps students learn to find information, analyze it, and communicate the results of their analysis. 3 Cr.

ECN 490 Senior Thesis Research (A). Prerequisites: GPA of 3.25, declared major, and 15 credits of upper-division economics courses. Part of a two-semester course of study aimed at providing students with an opportunity to acquire in-depth knowledge in a specialized area. Allows students to select a faculty member willing to serve as their thesis advisor. Requires students to identify a research topic, and conduct background research to include the preparation of an introduction and bibliography. The data should be collected by the end of the semester. 3 Cr. By Arrangement.

ECN 491 Senior Thesis (A). Prerequisite: Completion of ECN 490. Provides a continuation of ECN 490. Requires students to analyze collected data, explain the results, and prepare conclusions. Requires the thesis to be in proper thesis format according to departmental procedures. 3 Cr. By Arrangement.

ECN 498 Economics Internship (A). Prerequisites: At least 12 credits of economics course work completed, and a 2.75 GPA in major and 2.5 overall. Provides supervised experience in a work environment, with an opportunity to apply concepts learned in economics coursework. Provides an opportunity for students to better understand career opportunities in the field of economics, including careers related to economic development, economic planning, international trade, banking systems, and banking policy. Helps students understand the professional expectations of employers and the work culture. 1-6 Cr. Every Semester.

ECN 499 Independent Study in Economics (A). Entails special projects in economics under direction of individual staff members. Arranged in consultation with the instructor-sponsor and in accordance with procedures of the Office of Academic Advisement prior to registration. 1-6 Cr. By Arrangement.
Chemistry Programs

Chemists study atoms and molecules with the goal of understanding the composition, properties and changes that substances undergo. They identify individual components of materials found in nature, and measure how much of them are present. They also recombine atoms and molecules to deduce the rules of combination and to make new substances. Chemistry is also central to understanding other branches of science—the biological, earth, medical, and materials sciences, along with aspects of physics and astronomy. Knowledge of chemistry is crucial to understanding the manufacture and uses of many common materials such as metals, plastics, fibers, paper, glasses and ceramics; food products and food supplements, flavors and cosmetics; detergents and household chemicals; and pharmaceuticals, pesticides, paints, dyes and inks.

Chemistry is used in medical and criminal investigations, and in studying causes, effects, and cures for pollution. Finally, chemistry is central to authenticating, conserving, restoring, and preserving cultural treasures including rare books and documents, fine art, architectural works, and artifacts of the recent and distant past.

Students who major in chemistry and who choose appropriate electives are well prepared for advanced study in chemistry or related sciences such as biochemistry and molecular biology, computer sciences (with appropriate undergraduate work in computer science), engineering (especially chemical or environmental), environmental studies, forensic science, information science, materials science, neuro-science, pathology, pharmacology, physiology, or technical writing, and for advanced study in the health care professions: medicine, dentistry, and veterinary medicine. Students who major in chemistry are also well prepared to enter careers in:

1. Commerce and industry: quality control, research and development, manufacturing, marketing and sales, and management.

2. Education: teaching at the primary or secondary level or, after advanced study, at the university level.


4. Private and foundation-supported organizations conducting any of these kinds of activities.

Students at SUNY Brockport interested in the study of chemistry may choose: a major in chemistry; a major in chemistry with American Chemical Society Certification; a major in chemistry following the biochemistry track; dual majors in chemistry and another science, mathematics or computer science; chemistry and teacher certification; chemistry and business administration; or chemistry and a non-science discipline. They may also enter the 3+2 program leading to a dual BS in chemistry and chemical engineering. Some of these dual programs may require more than eight semesters and 120 credits to complete. Minors in chemistry can be designed to emphasize organic chemistry (synthesis and mechanisms), biochemistry, or analytical and physical chemistry. All minors require a minimum of 18 credits.

Students interested in the study of chemistry should speak with their chemistry instructors, the department chairperson, or the departmental advisor as early in their careers at SUNY Brockport as possible, since the study of chemistry is highly sequential. Some advanced courses require previous courses in chemistry, physics, or calculus.

Major in Chemistry

The student must earn a minimum of 34 credits in chemistry, complete three semesters of calculus and one year of calculus-based physics with lab.
Required Courses (34 credits)

The following courses are required of all majors:  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 205–206</td>
<td>College Chemistry I, II</td>
<td>8</td>
</tr>
<tr>
<td>CHM 301</td>
<td>Chemical Safety</td>
<td>1</td>
</tr>
<tr>
<td>CHM 303</td>
<td>Quantitative Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CHM 305–306</td>
<td>Organic Chemistry I, II</td>
<td>8</td>
</tr>
<tr>
<td>CHM 400–401</td>
<td>Seminar I, II</td>
<td>2</td>
</tr>
<tr>
<td>CHM 405–406</td>
<td>Physical Chemistry I, II</td>
<td>6</td>
</tr>
<tr>
<td>CHM 408–409</td>
<td>Physical Methods Laboratory I, II</td>
<td>2</td>
</tr>
</tbody>
</table>

Elective(s) 3

Total Credits in Chemistry: 34

MTH 201-202-203 Calculus I, II, III 9
PHS 201–202  College Physics I, II 8

Total Credits in Math and Physics: 17

Students completing two majors may, by petition to the Department of Chemistry, substitute a relevant upper-division course in another natural or mathematical science for three credits of chemistry elective.

To make normal progress in the major, a student should complete CHM 205–206 in the freshman year, and CHM 301, 303, 305–306, PHS 201–202, and MTH 201, 202, 203 before entering the junior year.

American Chemical Society (ACS) Certification

The American Chemical Society, through its Committee on Professional Training, establishes a professional standard for the undergraduate curriculum in chemistry. This committee also evaluates undergraduate programs and approves those departments which meet its standards. The SUNY Brockport Department of Chemistry is on the list of approved departments. Students whose goal is employment as a chemist or entry into chemistry graduate programs are advised to complete the program outlined below, which meets the requirements of the Committee on Professional Training for certification. Graduates who complete the program are also eligible for immediate election to membership in the ACS.

ACS Certified Major in Chemistry

Required courses for the major in chemistry (first 31 credits listed previously), plus:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 341</td>
<td>Advanced Organic Chemistry Laboratory I</td>
<td>1</td>
</tr>
<tr>
<td>CHM 414</td>
<td>Instrumental Methods II</td>
<td>3</td>
</tr>
<tr>
<td>CHM 416</td>
<td>Instrumental Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHM 431</td>
<td>Inorganic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHM 432</td>
<td>Inorganic Chemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHM 467</td>
<td>Biochemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHM 342</td>
<td>Advanced Organic Laboratory II</td>
<td></td>
</tr>
<tr>
<td>CHM 470</td>
<td>Biochemistry Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

Elective(s) 3

Total Credits in Chemistry: 47

1Three credits of electives from the 300/400-level in chemistry, excluding Contemporary Issues courses (suffix I).

2Three credits of electives chosen from the 300/400-level in chemistry, excluding courses with the suffix I (CHM 372, CHM 373). This elective credit requirement may be satisfied either by an advanced course in mathematics or physics (for which calculus is a prerequisite) or, by petition to the Department of Chemistry, a relevant upper-division course in another of the natural and mathematical sciences. It is strongly recommended that the student also develop a reading knowledge of scientific German and proficiency in computer programming.
CHEMISTRY COURSES

CHM 111 Introduction to Chemistry (A). Prerequisite: QNT 110 or waiver for QNT 110. For persons who need to upgrade their chemistry skills in preparation for a technically related career or for enrollment in CHM 205. No prior knowledge of chemistry is assumed. Includes introduction to structure and bonding, the application of basic algebra to frequently used chemical calculations, and formula and chemical equation writing. Is illustrated with in-class demonstrations. Three hours lecture and demonstrations per week. 3 Cr. Spring.

CHM 121 Women and Men Do Science: Explorations and Explanations (A,L,W). Prerequisites or corequisites: QNT 111 and ENL 112. A physical science Knowledge Area course with laboratory which deals with the methods of science in intellectual and practical spheres. Examines contributions of both women and men in the development of current understandings and explanations. Considers the proper roles of citizens and government as related to scientific questions. Provides practice in correct use of scientific terminology and standard English in written and oral communication. Three hours of lecture/discussion and two hours of lab per week. 4 Cr. Every Semester.

CHM 171 Elements of Forensic Science (A,N). Prerequisite: QNT 111 or equivalent math background. Shows how principles and techniques of biology, chemistry and physics are used to develop evidence for legal proceedings. Includes topics such as types and handling of physical evidence; fingerprints; impressions; chromatography; spectroscopy; microscopy; toxicology; and serology (including blood and DNA typing). (Closed to students who have completed CRJ 371.) DOES NOT FULFILL ELECTIVE REQUIREMENTS FOR CHEMISTRY MAJOR OR MINOR. Three hours of lecture/discussion per week. 3 Cr. Fall.

CHM 205 College Chemistry (A,L). Prerequisite: QNT 111 or equivalent. Covers atomic structure, chemical periodicity, inorganic nomenclature, chemical bonding, molecular orbitals, molecular structures, properties of solids,
liquids, gases, and solutions, chemical equations, and quantitative problems. Three hours lecture and three hours lab per week. **4 Cr. Every Semester.**

**CHM 206 College Chemistry II (A).** Prerequisite: CHM 205. Covers strong and weak electrolytes, reactions, buffer systems, structure and bonding of coordination complexes, kinetics, homogeneous and heterogeneous equilibrium, thermodynamics, chemical equations and quantitative problems. Three hours lecture and three hours lab per week. **4 Cr. Spring.**

**CHM 260 Chemistry for the Health Professions (A,L).** Prerequisites: QNT 111 or equivalent and HS Chemistry or CHM 111. Emphasizes the thoughts and actions of modern chemists as they seek a broader understanding of the molecular basis of living systems. Entails theory and mathematics appropriate for beginning students, directed towards an appreciation of the relationships between molecular structure and the ability to diagnose and treat disease. Develops the notion of decision making in the intellectual discourse of science. Three hours lecture and two hours lab per week. **4 Cr. Spring.**

**CHM 301 Chemical Safety (A).** Prerequisite: CHM 206. Covers safety measures for prudent conduct of chemical lab work, hazardous properties of general and specific classes of chemicals, conditions for safe storage of chemicals, fire control and other emergency response measures. One hour lecture per week. **1 Cr. Fall.**

**CHM 303 Analytical Chemistry I (A).** Prerequisite: CHM 206. Introduces to analytical methods with emphasis on statistical evaluation of quantitative data and sampling strategies, analytical applications of acid-base equilibria, and chromatographic separations. Also includes a survey of classical volumetric methods, quantitative absorption spectrophotometry, and an introduction to ion selective electrode potentiometry. Three hours lecture and four hours lab per week. **4 Cr. Spring.**

**CHM 305 Organic Chemistry I (A).** Prerequisite: CHM 206. Presents the chemistry of carbon compounds: structures, stereochemistry, nomenclature, functional groups, acids and bases, reaction mechanisms, spectroscopy, and chromatography, with emphasis on synthesis and reactions of hydrocarbons, alkyl halides and arenes. Three hours lecture and four hours lab per week. **4 Cr. Fall.**

**CHM 306 Organic Chemistry II (A).** Prerequisite: CHM 305. Continuation of CHM 305. Covers nomenclature, spectroscopy, synthesis, and reactions including qualitative analysis of alcohols, ethers, aldehydes, ketones, carboxylic acids and derivatives, amines, carbohydrates, and natural products. Three hours lecture and four hours lab per week. **4 Cr. Spring.**

**CHM 341 Advanced Organic Chemistry Laboratory I (A).** Prerequisite: CHM 306. Extends lab techniques and the scope of reactions encountered in CHM 305/306. Covers vacuum and fractional distillation, catalytic hydrogenation, organometallic reagents, phase transfer reagents, and other advanced experiments. Four hours lab per week. **1 Cr. Spring.**

**CHM 342 Advanced Organic Chemistry Laboratory II (A).** Prerequisite: CHM 341. Continuation of advanced techniques begun in CHM 341. Four hours lab per week. **1 Cr. Spring.**

**CHM 372 Environmental Issues (A,I).** Covers a wide range of environmental issues such as air pollution, acid rain, the greenhouse effect, pesticides, food additives and nuclear power. Also examines risk assessment methods, and the psychological factors and personal values that shape public attitudes. DOES NOT FULFILL ELECTIVE REQUIREMENTS FOR THE CHEMISTRY MAJOR OR MINOR. Three hours of lecture/discussion per week. **3 Cr. Spring.**

**CHM 373 American Women Scientists in Contemporary Society (A).** Prerequisite: Completion of Knowledge Area courses. Examines the contributions women have made in scientific fields. Also seeks to determine the validity of the claims of looming deficiencies of scientists in the nearfuture. Finally, assesses the roles that women scientists can and should play in meeting this problem. DOES NOT FULFILL ELECTIVE REQUIREMENTS FOR CHEMISTRY MAJOR OR MINOR. Three hours of lecture/discussion per week. **3 Cr. Spring.**

**CHM 399 Independent Study in Chemistry (A).** Prerequisite: Junior or senior status, and 2.00 GPA overall with a 2.50 GPA in chemistry. To be defined in consultation with the professor-sponsor prior to registration. 1–6 Cr. Every Semester.

**CHM 400 Seminar I (A).** Prerequisite: Departmental major’s advisor or course instructor’s permission; permission normally requires completion of 20 credits of the chemistry major. Includes attendance at seminars, critique writing, and participation in career and employment workshops. One hour per week. **1 Cr. Fall.**

**CHM 401 Seminar II (A).** Prerequisite: CHM 400. Continuation of CHM 400. Includes preparation and presentation of a technical speech by each registrant. One hour per week. **1 Cr. Spring.**

**CHM 405 Physical Chemistry I (A).** Prerequisites: CHM 303, MTH 203 and PHS 202. Covers the laws of thermodynamics and their application to chemical equilibria, phase equilibria,
solution chemistry, electrochemistry and surface chemistry. Three hours lecture per week. 3 Cr. Fall.

CHM 406 Physical Chemistry II (A). Prerequisite: CHM 405. Covers chemical kinetics, quantum chemistry, bonding, spectroscopy, statistical mechanics and photochemistry. Three hours lecture per week. 3 Cr. Spring.

CHM 408 Physical Methods Laboratory I (A). Prerequisites: MTH 203, PHS 202, and CHM 206. Covers the statistical treatment of data, propagation of errors, graphs, and report writing. Requires students to conduct experiments using modern physical measurement techniques and produce written scientific reports describing and analyzing the methods and their results. Three hours lab per week. 1 Cr. Fall.

CHM 409 Physical Methods Laboratory II (A). Prerequisite: CHM 408. Students conduct experiments using modern physical measurement techniques and produce written scientific reports describing and analyzing the methods and their results. Three hours lab per week. 1 Cr. Spring.

CHM 413 Instrumental Methods I: Spectral Interpretation (A). Prerequisite: CHM 306. Covers proton and carbon-13 nuclear magnetic resonance, ultraviolet and visible, infrared, and mass spectrometry data for the identification and structural elucidation of organic compounds. One hour lecture/discussion per week. 1 Cr. Spring Alternate Years 2003, 2005.

CHM 414 Instrumental Methods II: Quantitative Spectrometry and Electro-analytical Methods (A). Prerequisites: CHM 303 and 406. Covers strategies for chemical instrumentation and data acquisition, as well as theory and applications of spectrometric and electrochemical techniques for quantitative determinations and optimization of analytical parameters. Three hours lecture per week. 3 Cr. Fall.

CHM 416 Instrumental Methods Laboratory (A). Prerequisites or corequisites: CHM 414 or both CHM 413 and 415. Covers the operation and application of electro-chemical, spectrometric, and chromatographic instruments with emphasis on optimization of selectivity, sensitivity, and resolution with real samples. Requires written reports. Four hours lab per week. 1 Cr. Fall.

CHM 417 Computational Chemistry (A). Cross-listed as CPS 417. Offered by the Department of Computational Science. 3 Cr.

CHM 431 Inorganic Chemistry (A). Prerequisite or corequisite: CHM 406. Studies trends within the periodic table, atomic structure, ionic and covalent bonding models, weak chemical forces, acid-base chemistry, chemistry in aqueous and nonaqueous solutions, and coordination compound bonding, structure, and reactivity. Three hours lecture per week. 3 Cr. Spring.

CHM 432 Inorganic Chemistry Laboratory (A). Prerequisite or corequisite: CHM 431. Explores use of classical synthetic methods to prepare coordination compounds. Applies advanced physical theory and instrumental methods to the problems of defining the composition, structure, bonding, and reactivity of these compounds. Four hours lab per week. 1 Cr. Spring.

CHM 457 Geochemistry (A). Prerequisites: CHM 205 and 206, and GEL 101. Cross-listed as GEL 457. Applies basic chemical principles of thermodynamics, kinetics, and equilibrium to the investigation of common geologic problems ranging from crystallization of silicate melts to surface reactions on soil minerals. Focuses on laboratory exercises on application of good laboratory practices to wet chemical and instrumental techniques involving geologic materials. Three hours lecture and three hours lab per week. 4 Cr. Fall Alternate Years.

CHM 467 Biochemistry I (A). Prerequisite: CHM 306; a college course in biology is strongly recommended. Cross-listed as BIO 467. Covers the chemistry of proteins, lipids, carbohydrates, nucleic acids and other biomolecules, with an emphasis on buffers, structures, experimental methods, main energy production pathways, biosynthesis, the deduction of structures, functional roles and mechanisms. Three hours lecture per week. 3 Cr. Fall.

CHM 468 Biochemistry II (A). Prerequisite: CHM 467 or BIO 467. Cross-listed as BIO 468. Provides a continuation of CHM 467. Covers additional metabolic pathways, human nutrition, chromosomes and genes, protein biosynthesis, cell walls, immunoglobulins, muscle contraction, cell motility, membrane transport and excitable membranes and sensory systems. Investigates experimental evidence for the structures and functions of biomolecules. 3 Cr. Spring.

CHM 470 Biochemistry Laboratory (A). Prerequisite or corequisite: CHM 467 or BIO 467. Cross-listed as BIO 470. Covers biochemical analyses, including preparation, separations and characterization of products from a variety of biological sources; and experiments with enzymes and experiments designed to measure changes inherent in the dynamics of living systems. Four hours lab per week. 1 Cr. Fall.

CHM 480 Practical Chemistry Lab Pedagogy (B). Prerequisites: CHM 301 or NAS 468, CHM 303 and 306, and at least one semester as a chemistry lab assistant at SUNY Brockport (this experience carries no credit but is paid). For students working toward teacher certification in secondary chemistry and general science. Requires students to develop preparation notes, solutions, and
reagents for lab experiments. Requires each student to develop a lesson plan, lead a class in the experiment, develop a grading scheme and do the actual grading for a selected experiment. Introduces troubleshooting of simple instruments. Requires a hands-on experience in the practical aspects of lab instruction. Does not satisfy the elective requirement for students not seeking teacher certification. 3 Cr. By Arrangement.

CHM 499 Independent Study in Chemistry (A). Prerequisites: Senior status, and 2.00 overall GPA, 2.50 GPA in chemistry. To be defined in consultation with the professor-sponsor prior to registration. 1–6 Cr. Every Semester.

NAS 273 Investigation in the Physical Sciences (A,L). Corequisites: ENL 112 and QNT 111. Provides a study of fundamental aspects of physics and chemistry using processes commonly employed by scientists to probe nature. Gives particular attention to those areas of physical science from which elementary school science topics are drawn. Required for candidates for certification in elementary education. Requires three hours of lecture/discussion and one two-hour lab per week. 4 Cr. Every Semester.

DEPARTMENT OF COMMUNICATION

227 Holmes Hall
(585) 395-2511

Chairperson and Associate Professor: Virginia Bacheler; Professor: Floyd D. Anderson; Associate Professors: Donna Kowal, Katherine Madden; Assistant Professors: Matthew Althouse, Monica Brasted, Michael Cavanagh, Joseph Chesebro, Alice Crume, Carvin Eison, Donna Kowal, Hsiang-Ann Liao, Bill W. Reed.

Two major curricula are available to students through the Department of Communication: the communication major and the journalism major.

In addition to the major, the department offers an 18-credit minor in communication studies.

MAJOR IN COMMUNICATION BA OR BS

COMMUNICATION STUDIES TRACK

The major in communication studies explores communication in a variety of contexts ranging from interpersonal communication to mass persuasion and the social influence of media. The major enables students to investigate a variety of communication activities with learning experiences in theory, application of theory, and performance. The major’s two available specialties permit students to develop a program of study in those aspects of communication studies that suit their academic interests and career goals.

Majors concentrating in the communication studies track are required to complete one of two 21-credit specialties, a 15-credit common core and either a minor or a second major in a discipline other than communication, broadcasting or journalism.

The major in communication studies may serve as an academic major for students pursuing elementary education certification.

Requirements

Students must complete 36 credits in the program, with at least 21 credits in courses numbered 300–499. The student majoring in communication studies, in addition to completing the 15-credit communication studies core, must select one of the two 21-credit specialties offered in the major. At least 15 of the 36 credits in communication studies must be taken at SUNY Brockport.

Successful completion of the major requires students to complete, with a grade of “C” or better, CMC 202 Principles of Communication (required of all majors in the Department of Communication, and must be taken at SUNY Brockport).
### I. Communication Studies Core (15 credits required; 6 credits must be in upper-division courses)

**A. Required Course:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CMC 202 Principles of Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

**B. Required Skills Course** (one of the following courses selected by advisement):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMC 209 Speech Composition and Presentation</td>
<td>3</td>
</tr>
<tr>
<td>CMC 312 Argumentation and Debate</td>
<td>3</td>
</tr>
<tr>
<td>CMC 317 Interviewing</td>
<td>3</td>
</tr>
<tr>
<td>CMC 319 Propaganda and Persuasion</td>
<td>3</td>
</tr>
</tbody>
</table>

**C. Required Core Breadth Courses:**

Students majoring in communication studies must complete three additional communication studies core courses (nine credits) of their own choosing in the communication studies major specialty other than that one elected. For example, students electing the communication and persuasion specialty must select nine credits from courses in the interpersonal and organizational communication specialty. Students electing the interpersonal and organizational communication specialty must complete nine credits from courses in the communication and persuasion specialty.

### II. Communication Studies Major Specialties (21 credits required; 15 credits must be in upper-division courses)

**A. Communication and Persuasion Specialty**

**Required Courses (9 credits):**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Either of:</td>
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<tr>
<td>CMC 211 Protest and Public Opinion</td>
<td>3</td>
</tr>
<tr>
<td>CMC 219 Advertising, Mass Persuasion and the Consumer</td>
<td>3</td>
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<tr>
<td>And:</td>
<td></td>
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<tr>
<td>CMC 411 Rhetorical Criticism</td>
<td>3</td>
</tr>
<tr>
<td>CMC 492 Theories of Rhetoric</td>
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</tbody>
</table>

(completion of CMC 411 highly recommended before enrolling in CMC 492)

Elective courses selected from the following (12 credits):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CMC 210 Communication Revolutions in Western Civilization</td>
<td>3</td>
</tr>
<tr>
<td>CMC 373 Critical Studies in Mass Communication</td>
<td>3</td>
</tr>
<tr>
<td>CMC 410 Speakers, Campaigns, and Movements</td>
<td>3</td>
</tr>
<tr>
<td>CMC 417 Political Rhetoric in the Information Age</td>
<td>3</td>
</tr>
<tr>
<td>CMC 419 Freedom of Expression</td>
<td>3</td>
</tr>
<tr>
<td>CMC 463 Media and Society</td>
<td>3</td>
</tr>
<tr>
<td>CMC 467 Mass Communication Theory and Research</td>
<td>3</td>
</tr>
</tbody>
</table>

**B. Interpersonal and Organizational Communication Specialty**

**Required Courses (9 credits):**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CMC 273 Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>CMC 473 Theories of Communication</td>
<td>3</td>
</tr>
<tr>
<td>CMC 477 Organizational Communication</td>
<td>3</td>
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</tbody>
</table>

**Elective Courses selected from the following (12 credits):**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMC 316 Interpersonal Communication in Business and the Professions</td>
<td>3</td>
</tr>
</tbody>
</table>

(completion of CMC 316 highly recommended before enrolling in CMC 477)
CMC 413 Nonverbal Communication 3
CMC 415 Public Communication in Administration, Business and the Professions 3
CMC 418 Intercultural Communication 3
CMC 472 Group Leadership 3
CMC 475 Communicatoir Internship 3
CMC 479 Conflict Management Through Communication 3
CMC 483 Communication Training and Development 3

III. Required Minor or Second Major in Outside Discipline (other than communication, broadcasting, journalism)
All students pursuing the major in communication studies must also complete a minor (normally 18-21 credits) or a second major (normally 30-36 credits) in a discipline other than communication, broadcasting or journalism.

In lieu of a minor or second major in another discipline, students may elect, with departmental approval, a contractual program consisting of a minimum of 18 credits in courses in an area not identified as a formal minor or major at SUNY Brockport. Study of a foreign language other than French or Spanish (in which minors are offered), bilingual-multicultural studies, or foreign cultural studies is encouraged as such a program.

Minor in Communication Studies (18 credits)
The minor in communication studies consists of CMC 202 Principles of Communication, and 15 credits in one of the two communication studies specialties (communication and persuasion, or interpersonal and organization communication) distributed as follows: nine credits of required courses and six credits of elective courses selected by advisement.

BROADCASTING TRACK
The broadcasting track of the communication major prepares students for employment in television and radio stations, cable companies, independent production studios, and corporate media centers.

The broadcasting track consists of at least 36 credits of course work, including 15 credits in liberal arts core courses and 21 credits in specialization courses (nine credits in required courses and 12 credits in elective courses). At least 15 credits in communication must be completed at SUNY Brockport.

Successful completion of the broadcasting track requires that students complete, with a grade of “C” or better, the following courses: CMC 202 Principles of Communication (required of all majors in the Department of Communication; must be taken at SUNY Brockport), and CMC 242 Fundamentals of Radio/TV.

I. Liberal Arts Core (15 credits):
CMC 202 Principles of Communication 3
CMC 242 Fundamentals of Radio/TV 3
CMC 243 Radio/TV Writing I 3
CMC 467 Mass Communication Theory and Research 3
CMC 496 Contemporary Broadcast Issues 3

II. Specialization Courses (21 credits):
From required and elective lists below

Required Courses (9 credits):
CMC 343 Broadcast Announcing 3
CMC 346 Radio Production 3
CMC 348 Television Production 3

Elective Courses
(12 credits required; must be selected from the following):
CMC 312 Argumentation and Debate 3
Either of: CMC 319 Propaganda and Persuasion 3
CMC 491 Influence and Persuasion 3
CMC 324 Advanced Media Writing 3
CMC 353 Broadcast Sales and Marketing 3
CMC 358 TV Directing and Field Production 3
CMC 366 Broadcast Journalism 3
CMC 373 Critical Studies in Mass Communication 3
CMC 445 Advanced Radio Production 3
CMC 446 Advanced TV Production 3
CMC 466 Advanced Broadcast Journalism 3
CMC 468 Media Law 3
CMC 475 Communication Internship 3
CMC 495 Senior Honors in TV/Radio Production 3
ART 311 Introduction to Video 3
ART 412 Video Production II 3
BUS 335 Introduction to Marketing 3
CSC 105 Internet and Web Publishing 3
THE 124 Voice and Diction 3

III. Required Minor or Second Major in Outside Discipline (other than communication, broadcasting, journalism)

All students pursuing the broadcasting track of the communication major must also complete a minor (normally 18-21 credits) or a second major (normally 30-36 credits) in a discipline other than broadcasting, communication or journalism.

In lieu of a minor or second major in another discipline, students may elect, with departmental approval, a contractual program consisting of a minimum of 18 credits of courses in an area not identified as a formal minor or major at SUNY Brockport. Study of a foreign language other than French or Spanish (in which minors are offered), bilingual-multicultural studies or foreign cultural studies is encouraged as such a program.

MAJOR IN JOURNALISM BA OR BS IN JOURNALISM

Administered by the Department of Communication, the major in journalism prepares students for careers in newspaper, magazine, broadcast and wire service journalism; public and community relations; public information; advertising; corporate communications; and government service.

The major in journalism consists of at least 36 credits of course work in journalism and mass communication courses within the Department of Communication, together with a requirement that students complete a minor or second major (or, with department approval, a contractual program of study not constituting a minor or second major) in a disciplinary area outside the Department of Communication. Completion of all requirements for the major thus requires a minimum of 54 credits of required and elective courses. At least 15 of the 36 credits required in journalism and mass communication courses must be taken at SUNY Brockport.

Successful completion of the major in journalism requires students to complete, with a grade of “C” or better, CMC 202 Principles of Communication (required of all majors in the Department of Communication and must be taken at SUNY Brockport); CMC 210 Communication Revolutions in Western Civilization, and either CMC 224 Newswriting or CMC 243 Radio and Television Writing (or their approved transfer equivalents).

Journalism and Mass Communication Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CMC 202 Principles of Communication</td>
<td>3</td>
</tr>
<tr>
<td>CMC 210 The Communication Revolutions in Western Civilization</td>
<td>3</td>
</tr>
<tr>
<td>Either of:</td>
<td></td>
</tr>
<tr>
<td>CMC 224 Newswriting</td>
<td>3</td>
</tr>
<tr>
<td>CMC 243 Radio and Television Writing</td>
<td>3</td>
</tr>
</tbody>
</table>
CMC 321 Mass Media Reporting and Research 3
CMC 324 Advanced Media Writing 3
CMC 468 Media Law 3
CMC 493 Contemporary Journalism Issues and Problems 3

**AND two of the following:**

CMC 373 Critical Perspectives on Mass Communication 3
CMC 438 History of American Journalism 3
CMC 463 Media and Society 3
CMC 467 Mass Communication Theory and Research 3

### II. Journalism/Mass Communication Electives selected by advisement from:
(minimum of 9 credits required)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CMC 322 Editorial Methods and Problems</td>
<td>3</td>
</tr>
<tr>
<td>CMC 325 Specialized Writing</td>
<td>3</td>
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<tr>
<td>CMC 327 Publication and Web Design</td>
<td>3</td>
</tr>
<tr>
<td>CMC 332 Public Relations Principles and Practices</td>
<td>3</td>
</tr>
<tr>
<td>CMC 334 Public Relations Methods and Problems</td>
<td>3</td>
</tr>
<tr>
<td>CMC 366 Broadcast Journalism</td>
<td>3</td>
</tr>
<tr>
<td>CMC 432 Public Relations Campaigns</td>
<td>3</td>
</tr>
<tr>
<td>CMC 466 Advanced Broadcast Journalism</td>
<td>3</td>
</tr>
<tr>
<td>CSC 105 Internet and Web Publishing</td>
<td>3</td>
</tr>
</tbody>
</table>

### III. Required Minor or Second Major in Outside Discipline (other than communication, broadcasting, journalism)

All students pursuing the major in journalism must also complete a minor (normally 18-21 credits) or a second major (normally 30–36 credits) in a discipline other than journalism, broadcasting or communication.

In lieu of a minor or second major in another discipline, students may elect, with department approval, a contractual program consisting of a minimum of 18 credits of courses in an area not identified as a formal minor or major at SUNY Brockport. Study of a foreign language other than Spanish or French (in which minors are offered), bilingual-multicultural studies or foreign cultural studies is encouraged as such a program.

### COMMUNICATION COURSES

**CMC 111 Communication and Information Literacy (A).** Allows students to sharpen public speaking skills by means of researching and delivering several types of public speeches, including informative, demonstrative, and persuasive. Focuses on content preparation, organization, and performance apprehension. Requires students to spend part of the semester with library staff developing information literacy skills including using databases and the World Wide Web, and applying research skills. 3 Cr. Every Semester.

**CMC 202 Principles of Communication (A).** Introduces students to selected concepts, principles and theories of human communication. Includes study of verbal and nonverbal messages in the contexts of intrapersonal, interpersonal, group, public, and mediated communication. Required of all students majoring in communication studies or inter-disciplinary communication. Transfer courses will not be accepted to meet this requirement. 3 Cr. Every Semester.

**CMC 209 Speech Composition and Presentation (A).** For students who wish to go beyond the basics of public speaking. Assists the speaker who wishes to overcome the apathetic or hostile audience, and helps the speaker learn how to motivate those who express sympathy, but are without commitment to an idea. Examines ethics and ghostwriting. 3 Cr.

**CMC 210 Communication Revolutions in Western Civilizations (A,H,E).** Examines communication’s relationship to society by looking at the impact of communication technologies on the way human beings think about themselves and the world around them, and on the way they organize themselves in social groups. Looks at the impact of communication technologies on human imagination and social organization. Studies communication technologies on a continuum from oral to post-industrial cultures. 3 Cr. Every Semester.
CMC 211 Protest and Public Opinion (A,H,W,D). Examines rhetorical transactions of group conflicts; persuasive use of symbols; effects of mass media; and the process of theory-building in rhetorical studies. 3 Cr.

CMC 219 Advertising, Mass Persuasion and the Consumer (A,H). Explores the role and influence of advertising and mass persuasion in today's society, theories of persuasion and persuasive techniques commonly employed in advertising and mass persuasion, techniques of persuasive manipulation and its neutralization, and ethics in persuasion. 3 Cr.

CMC 224 Newswriting (A). Provides instruction in the elements of writing news for print and broadcast; types, style and structure of news stories; and the lead. Covers fundamentals of news gathering, newswriting and news judgment. Studies news sources, field work, research and interviewing techniques. Strongly encourages participation in student campus-community news media. 3 Cr. Every Semester.

CMC 242 Fundamentals of Radio and Television (B). Provides an introduction to radio and television broadcasting. Studies basic principles and historical, economic and technological aspects of broadcasting. Requires readings in fundamental theory and current practices. 3 Cr.

CMC 243 Radio/TV Writing I (A). Prerequisite: CMC 242. As a beginning course in writing for broadcast medium, concentrates on non-dramatic radio and TV continuity: commercials, public service announcements, news, and some work with non-broadcast video writing (e.g., training tapes for corporate work). Contrasts radio and TV writing styles. Includes writing Web versions of radio and television script copy. 3 Cr. Every Semester.

CMC 273 Interpersonal Communication (A,S). Introduces students to the theory and process of interpersonal communication, examining and applying the concepts and principles basic to inter-personal encounters. Acquaints students with the essentials of communication transactions in experiential learning opportunities that lead to effective skills in social, intimate, inter-gender, family, professional and intercultural relationships. 3 Cr.

CMC 312 Argumentation and Debate (A). Provides for the preparation and defense of logical argument, response to attacks by opponents, construction of cross-examination, undergoing cross-examination, research and support of arguments, and recognition and refutation of fallacies. 3 Cr.

CMC 316 Interpersonal Communication in Business and the Professions (A). Covers the principles of interpersonal communication in organizations, facts and principles of organizational communication, participation in and analysis of lab learning experiences, and the synthesis and use of facts and principles to analyze the communication patterns illustrated in reality-based case studies and in data gathered through field observations. 3 Cr.

CMC 317 Interviewing (A). Provides an introduction to principles of effective interviewing. Focuses on specific purposes, types, and the skills applied to different interview situations. Includes assignments for analysis, preparation, conducting and assessing of interviews. 3 Cr.

CMC 319 Propaganda and Persuasion (A). Explores the theories, principles and methods of persuasion; the role and function of persuasion and propaganda in contemporary society; the preparation and presentation of persuasive messages; and concepts of ethical persuasion. 3 Cr.

CMC 321 Media Reporting and Research (A). Prerequisite: CMC 242 or 243. As an advanced media writing course, covers and provides extended practice in essential skills of reporting and writing for print, broadcast and online media, and writing for public relations and advertising. Emphasizes use of online sources and databases in gathering and reporting information. 3 Cr.

CMC 322 Editorial Methods (B). Prerequisite: CMC 321. Studies editorial processes and practices in print, broadcast and online publishing, with emphasis on assignment editing, copy editing and editorial judgment. Requires preparation editing of material for print, broadcast and online publication; copy correction and improvement; evaluation of news and news values; news and copy display and make-up. Uses student-prepared copy and wire copy. Strongly encourages participation on student campus-community newspaper. 3 Cr. Fall Semester.

CMC 324 Advanced Media Writing (A). Prerequisite: CMC 321. As an advanced course in writing for print, broadcast, online and public relations media, emphasizes the commonalities and differences among writing formats, mechanics, and approaches of each medium. Embraces and provides practice in the use of the variety of media technologies available to writers. Assumes basic proficiency in writing for at least one medium. 3 Cr. Spring Semester.

CMC 325 Specialized Writing (A). Continues and extends instruction and practice in writing for all media forms and in a variety of formats. Provides guided practice in writing features, public affairs, opinion and other media content types and practice in gathering, interpreting and synthesizing information from a wide variety of sources, including print and electronic databases. 3 Cr.
CMC 327 Publication and Web Design (A). Introduces the basic elements of both print and Web publication design and production: headlines, text, photos and illustrations, type manipulation and use, charts and graphs, Web site links, hypertext, sound, video and other emerging publication technologies. 3 Cr. Spring Semester.

CMC 332 Public Relations Principles and Practices (A). Prerequisite: CMC 332. Provides an introduction to, demonstration in, and application of public relations techniques, tools and procedures to both hypothetical and actual public relations cases. Emphasizes action and communication techniques and practices used in public relations planning, production of informational and persuasive messages, and evaluation of action and communication activities. 3 Cr.

CMC 343 Broadcast Announcing (B). Prerequisite: CMC 242. Covers basic broadcast announcing with an emphasis on preparation and presentation of news, editorial content, commercials, public service announcements, and dramatic and narrative content. 3 Cr.

CMC 346 Radio Production (B). Prerequisite: CMC 243 or 343. Covers the principles and practices of radio productions while providing practical experience. Includes assigned projects on production of music, news and public affairs programming, remote taping, analog audio, editing, digital recording. 3 Cr. Every Semester.

CMC 348 Television Production (B). Prerequisites: CMC 243 and 346. Covers the principles and practices of television production, with projects designed for television broadcast. Requires students to produce and direct both in-studio and field projects. 3 Cr.

CMC 353 Broadcast Sales and Marketing (B). Explores techniques and problems of modern broadcast sales, marketing and programming. Requires projects to develop latest methods in broadcast commercial marketing, planning, audience analysis, and programming in both radio and television. 3 Cr. Fall Semester.

CMC 358 TV Directing and Field Production (B). Prerequisites: CMC 348 and instructor’s permission. Provides practical experience in single-camera field shooting and editing, including electronic news gathering techniques. Provides students with an opportunity to direct studio productions as part of campus television services. Provides numerous assignments in studio and field lighting, shooting, interviewing and editing. 3 Cr. Spring Semester.

CMC 365 Newspaper Practicum (B). Prerequisite: Instructor's permission. Open to students serving on editorial or executive board of, or in designated positions of major editorial, advertising, managerial or production responsibility with, the student campus-community newspaper. May not be used to satisfy requirement for completion of major. May be repeated for maximum of 12 credits. 1–3 Cr.

CMC 366 Broadcast Journalism (B). Prerequisite: CMC 224 or 243. Covers current practices and issues in radio-televison news. Provides supervised practice in gathering, writing and presenting broadcast news. Emphasizes responsibility in news preparation and presentation. Requires reporting with audio and videotape recorders; broadcast of news programs over campus media. 3 Cr.

CMC 373 Critical Perspectives on Mass Communication (A). Focuses on film, video, print and other mass-mediated content and forms as cultural artifacts which comment on the societies within which they are produced. Studies media technique and a variety of critical approaches to explore the explicit and hidden messages in these artifacts. 3 Cr.

CMC 410 Speakers, Campaigns and Movements (A,U,W,D). Surveys significant historical and contemporary speakers, persuasive campaigns and rhetorical movements, with special attention to the introduction of women to the speaking platform and to historical and contemporary spokespersons and movements on behalf of racial and gender equality. 3 Cr.

CMC 411 Rhetorical Criticism (A,U). Explores methods of rhetorical criticism and application of methods of criticism to rhetorical discourse, including verbal and visual forms of persuasion. 3 Cr.

CMC 413 Nonverbal Communication (A). Explores multisensory communication codes for human interaction through channels such as paralanguage, space, time, body, and artifacts. Takes a functional approach considering purpose and context to determine the situational characteristics and codes. 3 Cr.

CMC 415 Public Communication in Administration, Business and the Professions (A). Prerequisite: CMC 316 or 332. Covers communication in business and professional settings, business and professional community needs; and reading, understanding and interpretation for audiences of business and professional statements and data. 3 Cr.
CMC 417 Political Rhetoric in the Information Age (A,W). Critically examines significant 20th-century American political speeches and campaigns. Explores the ways in which individuals and institutions use media to exercise power and influence opinion through the use of verbal and visual symbols. Places special emphasis on representations of gender in political rhetoric. 3 Cr.

CMC 418 Inter-cultural Communication (A). Explores cultural similarities and differences affecting communication and intercultural competencies for interaction between cultural groups and individuals along gender, ethnic, and national lines. 3 Cr.

CMC 419 Freedom of Expression (A,D,J,W). Critically examines the First Amendment by exploring its historical foundations and significant legal, political and philosophical arguments. Explores a variety of contemporary controversies concerning an individual’s right to freedom of verbal and nonverbal expression, including hate speech, incitement to violence and obscenity. Examines controversies in a variety of contexts, including the public speaking platform, print, television and the Internet. 3 Cr.

CMC 432 Public Relations Campaigns (B). Prerequisite: CMC 332. Focuses on the treatment of an organization’s public relations and information, including situation analysis and research, program and campaign planning, development of communications materials and activities, and program management. Provides experience in planning and executing public relations campaigns and programs. 3 Cr.

CMC 438 History of American Journalism (A,U). Prerequisite: CMC 210. Covers the evolution and development of the media of American journalism from their beginnings in England and Colonial America to the present, and the dominant personalities who helped shape them, relating them to their social, political and economic environments. 3 Cr.

CMC 445 Advanced Radio Production (B). Covers advanced principles and practices of radio productions while providing practical experience. Includes assigned projects, studio work, digital and analog production. 3 Cr. Spring Semester.

CMC 446 Advanced Television Production (B). Prerequisite: CMC 348. Requires students to write, produce and direct advanced problems for television. Allows students to work individually and in small production units. Focuses on the development and execution of professional television production problems. Allows students to gain practical skills and finish the course with work that could be used in their video résumé tape or portfolio. 3 Cr.

CMC 463 Media and Society (A,U). Prerequisites: CMC 210 and senior status. Covers significant phases, issues and controversies in the historical development of mass communication in the United States. Emphasizes contemporary media relationships with, and impact on, intellectual, socio-political, economic and technological aspects of, culture and society. Considers daily and other periodical press, radio, television and film. 3 Cr.

CMC 466 Advanced Broadcast Journalism (B). Prerequisite: CMC 366. Provides experience in gathering, writing and producing news broadcasts for campus cable channel. Covers broadcast principles and practices with an emphasis on news and public affairs programming. 3 Cr.

CMC 467 Mass Communication Theory and Research (A,U). Examines and critiques the theoretical and research literature describing and explaining mass communication purposes, processes, messages, media, audiences, settings and effects at the individual, groups and societal levels. Gives attention to the cognitive, attitudinal and behavioral outcomes of mass communication in social, political, economic and other societal domains. 3 Cr. Every Semester.

CMC 468 Media Law (A,U). Studies the legal considerations and issues affecting media communication in all its forms, including computer database, Internet and “new media” issues. Emphasizes defamation and libel, privacy privilege, copyright and trademark law, contempt, obscenity, fairness and responsibility in media practice. Examines both governmental regulation and controls and self-regulatory media codes. 3 Cr. Spring Semester.

CMC 472 Group Leadership (A,U). Examines group processes, relationships and leadership in task-oriented groups, such as committees, task forces, teams, and problem-solving groups. Includes topics such as analysis of group processes, agenda planning, motivation of participation, conflict management, team building, and group leadership styles and techniques. 3 Cr.

CMC 473 Theories of Communication (A,U). Prerequisite: CMC 202. Covers classical and contemporary theories of human communication, research and practical applications of theory, relation of theoretical concepts to instances of communication behavior, and identification of salient communication theses. 3 Cr.

CMC 475 Communication Internship (B). Prerequisites: Instructor’s permission and senior status. Provides a supervised practicum experience in professional organizations appropriate to the student’s academic program. Application for internship must be received by midterm of semester preceding the internship experience. With department permission, may be repeated for a maximum of six credits. 3 Cr. Every Semester.
CMC 477 Organizational Communication (A,U). Prerequisite: CMC 273 or 316. Integrates communication theories with practice of communication in organizations. Emphasizes communication roles and culture of organizations as a force in organizational philosophy and world view. Provides practice in diagnosing and improving organizational communication systems. 3 Cr.

CMC 479 Conflict Management (A,U). Covers interpersonal conflict and its essential characteristics; evolution of the study of social conflict; perspectives from which social conflict is viewed, including psychological, social-psychological, sociological, economic, political and mathematical; the sources, conditions and consequences of social conflict in a given social setting; and skills of conflict management. 3 Cr.

CMC 483 Communication Training and Development (A,U). Prerequisite: Instructor’s permission. Introduces communication training with emphasis on practice in designing, facilitating, and evaluating a workshop presentation in an organizational setting. 3 Cr.

CMC 490 Special Topics (A). As an umbrella course, enables the instructor to define the course focus and subject matter to address a topic or topics not covered in other communication courses. May be repeated for credit under different topics course title. Additional information can be obtained from Department of Communication office. 1–3 Cr.

CMC 492 Theories of Rhetoric (A). Provides an intensive study of classical and contemporary theories of persuasion and social influence. Gives attention to the application of theory to the practice of social influence. 3 Cr.

CMC 493 Contemporary Journalism Issues and Problems (A). Prerequisites: CMC 210, and junior or senior status. Provides an in-depth study of one or more instructor-selected contemporary issues or problems in journalism, public relations and/or mass communication. Issues and problems selected will vary with each offering and may be either conceptual or applied. May be repeated for maximum of six credits. 3 Cr.

CMC 495 Senior Honors in Radio-TV Production (B). Prerequisites: Senior status and instructor’s permission. Open only to students in broadcasting track. Requires students to research, produce, record and direct radio or TV projects for which they are solely responsible. Radio projects may include works generated at College radio station specifically for this course. Projects are publicly presented to the college community. 3 Cr. Every Semester.

CMC 496 Contemporary Broadcast Issues (B). Prerequisites: Broadcasting major and senior status. Allows for a supervised study of selected contemporary issues or problems in broadcasting. Selected issue or problem may be either conceptual or applied. 3 Cr.

CMC 499 Independent Study in Communication (A). Prerequisite: Instructor’s permission. To be decided prior to registration in consultation with the instructor-sponsor and in accordance with the procedures of the Office of Academic Advisement. 1–6 Cr.
COMMUNICATIONS METEOROLOGY—INTERDISCIPLINARY MINOR

Advisor: Jose A. Maliekal, Department of the Earth Sciences (585) 395-2636

A minor in the area of meteorological communication is available to students who wish to become informed interpreters and communicators of weather information to mass audiences via electronic and print media. The minor consists of 19 or more credits selected from courses in the Departments of Communication and the Earth Sciences and elsewhere as appropriate to individual goals.

Courses will be selected, by advisement, in various combinations depending on the individual’s background and major program. Typical courses that may be included are:

<table>
<thead>
<tr>
<th>Broadcasting</th>
<th>Meteorology</th>
<th>Journalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMC 343</td>
<td>ESC 211</td>
<td>CMC 224</td>
</tr>
<tr>
<td>CMC 346</td>
<td>ESC 311</td>
<td>CMC 243</td>
</tr>
<tr>
<td>CMC 348</td>
<td>ESC 312</td>
<td>CMC 325</td>
</tr>
</tbody>
</table>

Additional electives from these departments or others may be chosen to complete the concentration. At least 12 of the credits must be at the 300/400 level. The program should be supplemented by electives to represent a balance of one of the communication concentrations and the meteorology area. Courses applied toward a major or any other minor may not also be counted toward this minor.

DEPARTMENT OF COMPUTATIONAL SCIENCE

249 Faculty Office Building
(585) 395-2021, www.brockport.edu/cps/

Professor/Chair: Osman Yasar. Assistant Professors: Leigh J. Little, Robert E. Tuzun.

Along with traditional experimental and theoretical methodologies, advanced work in all areas of science and engineering has come to rely critically on computation. Computer modeling combined with visualization represents a new paradigm for scientific exploration and technological research and development. It permits a new approach to problems that were previously inaccessible.

The computational approach is used in nearly all areas of science and engineering. For example, it is used by the automotive and aerospace industries to design safe and efficient vehicles, by the pharmaceutical industry to design new drugs, by meteorologists to predict the weather and long-term climactic changes, by biologists and ecologists to study the environment and population dynamics, by economists to predict the behavior of financial systems such as the stock market, and so on. Computer modeling is used to help direct research and to study systems before they are put into production; this has saved billions of dollars and years of development time.

The Department of Computational Science has received equipment support from Intel and Silicon Graphics and works closely with local industry, particularly Xerox Corporation and Eastman Kodak Company. Students learn computational and mathematical skills that can be applied to a wide variety of problems. The program is flexible so as to allow students to follow their particular interests and continue, if desired, with advanced degrees. Graduates can expect employment in industry, government, business, academia, and at major research and development laboratories.

Major in Computational Science

The CPS undergraduate major requires 36 credits of the following courses from the Departments of Computational Science, Computer Science, and Mathematics and from the department of an application area of interest. Six additional credits of elective courses are required.
## (a) Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 203</td>
<td>Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MTH 243</td>
<td>Elementary Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MTH 424</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>CSC 205</td>
<td>Fundamentals of Computer Science II</td>
<td>4</td>
</tr>
<tr>
<td>CPS 201</td>
<td>Computational Tools I</td>
<td>3</td>
</tr>
<tr>
<td>CPS 202</td>
<td>Computational Tools II</td>
<td>3</td>
</tr>
<tr>
<td>CPS 303</td>
<td>High Performance Computing</td>
<td>3</td>
</tr>
<tr>
<td>CPS 304</td>
<td>Simulation and Modeling</td>
<td>3</td>
</tr>
<tr>
<td>CPS 404</td>
<td>Applied and Computational Mathematics</td>
<td>3</td>
</tr>
</tbody>
</table>

## (b) Application Sciences (8 credits)

- 200-level and higher non-CPS courses from an area of application chosen under advisement
  - Total Credits (including electives): 42

## (c) Elective Courses (6 credits)

- Upper-division courses
  - Total Credits (including electives): 42

## (d) Prerequisites:

- Calculus I and II (MTH 201 and 202—6 credits)
- Discrete Mathematics I (MTH 281—3 credits)
- Introduction to Computer Science (CSC 120—3 credits)
- Fundamentals of Computer Science I (CSC 203—4 credits)

### Minor in Computational Science

## (a) Required Courses (12 credits):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPS 201</td>
<td>Computational Tools I</td>
<td>3</td>
</tr>
<tr>
<td>CPS 202</td>
<td>Computational Tools II</td>
<td>3</td>
</tr>
<tr>
<td>CPS 303</td>
<td>High Performance Computing</td>
<td>3</td>
</tr>
<tr>
<td>CPS 304</td>
<td>Simulation and Modeling</td>
<td>3</td>
</tr>
</tbody>
</table>

## (b) Elective Courses (8 credits)

- 200-level and higher non-CPS courses
  - Total Credits (including electives): 20

## (c) Prerequisites:

- Introduction to Computational Science (CPS 101—3 credits)
- Calculus III (MTH 203—3 credits)

Note: For additional and updated information on the Department of Computational Science, see the *Computational Science Handbook*, which is available in the department office, 112 Faculty Office Building.

### Computational Science Courses

**CPS 101 Introduction to Computational Science (A,N,E)**. Prerequisite: MTH 121. Provides an introduction to computation as used in science and engineering. Emphasizes practical applications of formulas to real-life problems and on tools for their solution. Includes three distinct areas: 1) techniques (linear regression for data-fitting, determination of areas and volumes, rate changes (differentiation), use of graphical calculator), 2) programming in FORTRAN and C, and 3) UNIX operating system (basic commands, editors, input/output). 3 Cr. Fall.

**CPS 102 Functions and Their Uses (A)**. As a technology-based course, serves General Education to the elementary college algebra level. Presents modeling, using graphing calculators and software for non-math majors to initiate them in problem-solving processes that are an integral part of nature and society. Provides entry-level students with college algebra skills, namely to acquire facility with graphs, tables of values, linear algebraic manipulations, and a qualitative understanding of rates of change. 3 Cr.
CPS 201 Computational Science Tools I (A). *Prerequisites: CPS 101 or 120.* Provides an introduction to the use of computers in science, engineering and business applications for prospective computational science, computer science, mathematics and other majors. Includes an introduction to the impact computers have on our lives; examples that help us understand how computation is recognized as a third way of doing science besides theory and experiment; examples of common applications and related industry and job market; brief introduction to high performance computing; common computation techniques in a variety of science, engineering, and business fields; examples and brief introduction to visualization as it relates to applications and the job market. Also includes these topics: 1) computer performance (speed), architecture and supercomputers; 2) data representation, algorithms, programming, and compiler directives (all in FORTRAN 77); and 3) visualization basics. 3 Cr. Fall.

CPS 202 Computational Science Tools II (A). *Prerequisite: CPS 201.* Covers techniques and software tools commonly used in scientific computing applications. Includes these topics: high-level programming languages such as Fortran 90 and C/C++; the UNIX operating system; general strategies for scientific computing; graphics, symbolic manipulation, and multipurpose software packages such as MAPLE, MATLAB, and MACSYMA; numerical libraries such as BLAS, and ScaLAPACK; problem-solving environments such as NetSolve; industrial benchmarks; grid-generation techniques; and communication libraries such as PVM and MPI. Discusses applications in chemistry, physics and other fields. Requires extensive programming in FORTRAN 90 and C. 3 Cr. Spring.

CPS 303 High Performance Computing (A). *Prerequisites: CPS 202 and MTH 203.* Covers computational methods commonly used in scientific applications. Illustrates parallel programming strategies and general principles of scientific computing in the context of numerical methods. Covers use of parallel supercomputers on the campus. Includes these computing topics: modern computer architectures, understanding parallelism, evaluating benchmarks, parallel computing, and language support for performance. Includes these mathematical topics: differentiation, integration, and interpolation; solution methods for linear systems; calculation of eigenvalues and eigenvectors; error analysis; and data fitting, regression and smoothing. Requires programming. 3 Cr. Fall.

CPS 304 Simulation and Modeling (A). *Prerequisite: CPS 303.* Provides an introduction to continuous and discrete simulation methods used in scientific applications. Includes steps required to model and simulate a system, including discussion of generic partial differential equations and governing equations, discretization of these equations (finite difference, finite-element, spectral methods), generation of computational grid to solve these governing equations, basic numerical schemes to solve the discretized equations, specification of initial conditions, and the formulation and development of simulation problems, programming strategies, and data analysis. Includes these representative applications: scheduling problems, molecular dynamics, weather prediction, engine combustion modeling, groundwater flow and others. Exposes students to recently developed techniques using finite-element and particle-based modeling approaches in groundwater modeling. Introduces the finite element component, strategies such as Eulerian-Lagrangian Adjoint Schemes, structured and unstructured matrix computation and assembly, element-by-element approaches, and sparse matrix solution methods (e.g. multigrid, PCG, BiCGSTAB, GMRES, QMR). Introduces in the particle method component new innovative strategies such as the lattice Boltzmann method for porous media flow and reactive transport. Briefly introduces use of methods such as genetic algorithms and neural networks for optimization and inverse problem solution. Requires extensive programming. 3 Cr. Spring.

CPS 404 Applied and Computational Mathematics (A). *Prerequisite: MTH 202.* Provides the mathematical skills for the development of efficient computational methods for several topics including: elementary numerical methods and their computer implementation, linear and nonlinear equations, ordinary differential equations, initial and boundary value problems, modeling of data, statistical distributions, generation of random numbers, discrete-event simulations, and statistical analysis of the output of simulations; introduction to stochastic processes, Markov decision chains and applications from transportation, inventory control, and health care; and Discrete Fourier transforms and its application to digital signal processing. 3 Cr.

CPS 433 Scientific Visualization (A). *Prerequisites: MTH 424 and CSC 205.* Provides concepts and techniques for visualization and its implementation. Specifically emphasizes the use of visualization tools in mathematical simulation modeling such as data entry and data integrity, code debugging and code performance analysis, interpretation and display of final results. Provides hands-on experience with visualization software packages in X-Windows environment. May require students to develop a new visualization software designed to aid in the analysis of a chosen problem. Requires knowledge of programming in a high-level language. 3 Cr.
CPS 488 Instrument Interfacing Laboratory I (A). Corequisite: CPS 404. Provides theoretical and practical knowledge of instrument interfacing techniques. Allows students to conduct experiments using modern instrument interfacing techniques to collect data. Includes experiments such as A/D-D/A feedback Control, A/D workstation and temperature measurement, measurement of D/A Resolution, IEEE interfacing using a digital multimeter, and IEEE interfacing using a digital electrometer. Three hours of laboratory per week. 1 Cr.

CPS 489 Instrument Interfacing Laboratory II (A). Prerequisite: CPS 406. Provides theoretical and practical knowledge of instrument interfacing techniques. Allows students to conduct experiments using modern instrument interfacing techniques to collect data. Includes experiments such as measurement of chemical luminescence, digital acquisition of spectrophotometer and gas chromatography data, digital acquisition of analog CCD (video) signal, Fourier transform infrared spectrometry, modern autosampling technology and robotics. Three hours of laboratory per week. 1 Cr.

CPS 433 Scientific Visualization (A). Prerequisites: MTH 424 and CSC 205. Provides concepts and techniques for visualization and its implementation. Specifically emphasizes use of visualization tools in mathematical simulation modeling such as data entry and data integrity, code debugging and code performance analysis, interpretation and display of final results. Provides hands-on experience with visualization software packages in X-Windows environment. May require students to develop a new visualization software designed to aid in the analysis of a chosen problem. Requires knowledge of programming in a high-level language. 3 Cr.

PHS 302 Dynamical Systems. (A). Prerequisite: CPS 404. Provides an introduction to dynamical systems. Includes these topics: conservation laws, phase space, Lagrange’s and Hamilton’s formulation of dynamics. Includes these applications: linear and nonlinear oscillators, perturbation theory, and coupled oscillators. Studies chaotic dynamics in computational problems, appropriate programming language such as C, C++, and uses software packages such as Mathematica for problem solving and for determining equations of motion. Requires a solid understanding of differential equations. 3 Cr.

DEPARTMENT OF COMPUTER SCIENCE

211 Faculty Office Building
(585) 395-2146
Fax: 395-2304
URL: www.brockport.edu/cs

Chair and Professor: Kadathur B. Lakshmanan; Professors: Thambrahalli M. Rao; Kalathur S. Rajasethupathy; Associate Professors: Joan M. Lucas, Anthony Scimé, Sandeep R. Mitra; Assistant Professor: Alexander R. Yakhnis; Instructor: Daniel F. Rogers

Computer science is the study of the theory and practice of computation. It incorporates aspects of several other fields: mathematics, to analyze the properties of algorithms and data structures; engineering, to design and construct practical programs and machines; the experimental sciences, both to investigate the behavior of programs running on real machines and to use programs for modeling scientific phenomena; and the cognitive sciences, to develop “intelligent” programs and to study computation in relation to human intelligence.

Computer science is a young and rapidly developing field. Presently its chief areas, reflected in regular course offerings at SUNY Brockport, are: programming methodology, design and analysis of algorithms, software engineering, programming languages, database systems, graphics, computer architecture, systems programming, modeling and simulation, artificial intelligence, and networking. Other areas are covered in independent study and topics courses. In addition, students can gain valuable job experience through the Computer Science Internship program and the Brockport Co-operative Education program.

The computer science major provides students with an excellent basis for a variety of careers and for graduate study. Possible careers include programming, system analysis and design,
maintenance, management and user support of software in areas such as business, science, engineering, and computer systems. Fields of graduate study, for which a double major with mathematics is advisable, include not only computer science, but mathematics, information management, and various areas of science and engineering.

The student interested in computer science has several options to choose from: a major in computer science in the software development (SD) track, the more rigorous advanced computing (AC) track, which is accredited by Computing Accreditation Commission [CAC] of ABET, or the information systems (IS) track; a double major in computer science and another discipline such as mathematics or business administration; a $3 + 2$ program leading to a BS in computer science from SUNY Brockport and a bachelor’s degree in engineering from some other institution; and a minor in computer science and a minor in computer information systems. Students majoring in computer science have the option of switching from one track to another at any time.

Major in Computer Science

1. Advanced Computing Track of the Computer Science Major
(67 credits; Accredited by Computing Accreditation Commission [CAC] of ABET)

For a major in computer science in the AC track a student must complete the following 67 credits of computer science and mathematics and science courses with an average grade of “C” or better. In addition, the grade for each of CSC 203, 205, and 311 must be “C” or better.

(A) Core Courses (37 credits)  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 203</td>
<td>Fundamentals of Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>CSC 205</td>
<td>Fundamentals of Computer Science II</td>
<td>4</td>
</tr>
<tr>
<td>CSC 303</td>
<td>Digital Logic and Computer Design</td>
<td>3</td>
</tr>
<tr>
<td>CSC 311</td>
<td>Computer Organization and Assembly Language</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Programming</td>
<td>4</td>
</tr>
<tr>
<td>CSC 401</td>
<td>Theory of Programming Languages</td>
<td>3</td>
</tr>
<tr>
<td>CSC 406</td>
<td>Algorithms and Data Structures</td>
<td>4</td>
</tr>
<tr>
<td>CSC 411</td>
<td>Computer Architecture</td>
<td>3</td>
</tr>
<tr>
<td>CSC 412</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSC 427</td>
<td>Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CSC 483</td>
<td>Theory of Computation</td>
<td>3</td>
</tr>
<tr>
<td>CSC 486</td>
<td>Junior/Senior Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

(B) Elective courses (9 credits)

300/400-level CSC courses selected under advisement

Restrictions apply. See notes below.

(C) Mathematics Corequisites (9 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 202</td>
<td>Calculus II*</td>
<td>3</td>
</tr>
<tr>
<td>MTH 346</td>
<td>Probability and Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 481</td>
<td>Discrete Mathematics II*</td>
<td>3</td>
</tr>
</tbody>
</table>

*Prerequisites for MTH 202 and MTH 481 are

MTH 201 Calculus I (3 credits)

MTH 281 Discrete Mathematics I (3 credits)

Total: 67

(D) Science Corequisites (12 credits)

(i) A two-semester sequence in a lab science for science/engineering majors. For example, PHS 201–202, CHM 205–206, BIO 201–202, ESC 211–311, GEL 201–302.

(ii) Each remaining course must be a course in science or a course that enhances the student’s abilities in the application of the scientific method. Each course must be a course for science/engineering majors or a course with a strong emphasis on quantitative methods.
Notes:
1. A student must take at a minimum of 30 credits in non-mathematics, non-science courses, a minimum of 15 credits in mathematics courses, and a minimum of 30 credits in mathematics and science courses.
2. At most, three credits from any course numbered CSC 490 or above may be used to satisfy the major elective requirement.
3. At least 18 of the credits used to satisfy the core or elective requirements in the major must be earned at SUNY Brockport.
4. A maximum of six credits can be earned by “credit by portfolio assessment,” and a maximum of six credits can be earned by “departmental credit by examination.” (Total credits including prerequisites CSC 120, MTH 281, MTH 201 = 76)

2. Software Development Track of the Computer Science Major (43 credits)
For a major in computer science in the SD track, a student must complete the following 43 credits of computer science and mathematics courses with an average grade of “C” or better. In addition, the grade for each of CSC 203, 205 and 311 must be “C” or better.

(A) Core Courses (28 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 203</td>
<td>4</td>
</tr>
<tr>
<td>CSC 205</td>
<td>4</td>
</tr>
<tr>
<td>CSC 303</td>
<td>3</td>
</tr>
<tr>
<td>CSC 311</td>
<td>3</td>
</tr>
<tr>
<td>CSC 401</td>
<td>3</td>
</tr>
<tr>
<td>CSC 406</td>
<td>4</td>
</tr>
<tr>
<td>CSC 411</td>
<td>3</td>
</tr>
<tr>
<td>CSC 486</td>
<td>3</td>
</tr>
</tbody>
</table>

(B) Elective courses (12 credits)
300/400-level CSC courses selected under advisement
Restrictions apply. See Notes below. 12

(C) Mathematics Corequisite (3 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 481</td>
<td>3</td>
</tr>
<tr>
<td>MTH 201</td>
<td>3</td>
</tr>
<tr>
<td>MTH 281</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 43

Notes:
(1) At most, three credits from courses numbered 490–499 may be counted toward the elective requirement. In addition, at most, one of MTH 461, MTH 462 and MTH 471 may be counted toward elective requirements.
(2) At least 18 of the credits used to satisfy the core or elective requirements for the computer science major must be earned at SUNY Brockport.
(3) A maximum of six credits can be earned by portfolio assessment, and departmental credit by examination.

3. Information Systems Track in the Computer Science Major (47 credits)
For a major in computer science in the IS track, a student must complete the following 47 credits of computer science, computer information systems, accounting, business and mathematics courses with an average grade of “C” or better. In addition, the grade for each of CSC 203, CSC 205, CIS 202, and CIS 303 must be “C” or better. Other restrictions apply; see Notes below.
### Core Courses (41 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 203</td>
<td>Fundamentals of Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>CSC 205</td>
<td>Fundamentals of Computer Science II</td>
<td>4</td>
</tr>
<tr>
<td>CSC 486</td>
<td>Junior/Senior Seminar</td>
<td>3</td>
</tr>
<tr>
<td>CIS 202</td>
<td>Fundamentals of Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CIS 303</td>
<td>Information Technology Hardware and Software</td>
<td>3</td>
</tr>
<tr>
<td>CIS 304</td>
<td>Computers and Office Productivity (or BUS 317)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 317</td>
<td>Analysis and Logical Design of Information Systems (or BUS 417)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 419</td>
<td>Computer Networks and Internet Applications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 422</td>
<td>Physical Design and Implementation with DBMS</td>
<td>3</td>
</tr>
<tr>
<td>CIS 427</td>
<td>Project Management and Practice</td>
<td>3</td>
</tr>
<tr>
<td>ACC 280</td>
<td>Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MTH 243</td>
<td>Elementary Statistics (or ECN 204)</td>
<td>3</td>
</tr>
<tr>
<td>MTH 281</td>
<td>Discrete Mathematics I</td>
<td>3</td>
</tr>
</tbody>
</table>

### Elective Courses (6 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 334</td>
<td>Decision Support and Expert Systems</td>
<td>3</td>
</tr>
<tr>
<td>CIS 404</td>
<td>Multimedia Applications</td>
<td>3</td>
</tr>
<tr>
<td>MTH 441</td>
<td>Statistical Methods I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 461</td>
<td>Math Models for Decision Making I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 461</td>
<td>Production and Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 464</td>
<td>Electronic Commerce and Entrepreneurship</td>
<td>3</td>
</tr>
</tbody>
</table>

Restrictions apply. See Note 2 below.

**Total:** 47

(Total credits including prerequisites CSC 120, CSC 104, MTH 122 = 56)

### Notes:

1. At most, three credits from the following group of courses can be counted towards the major elective requirement: MTH 441, MTH 461, BUS 461, BUS 464, and any CIS course numbered 490 or above.

2. The following CSC courses are NOT allowed as CIS electives: all 100/200-level CSC courses, CSC 303, CSC 304, CSC 311, CSC 411, CSC 419, CSC 422, CSC 427, CSC 434, and all CSC courses numbered 490 and above.

3. At least 18 of the credits used to satisfy the core or elective requirements in the major must be earned at SUNY Brockport.

4. A maximum of six credits can be earned by “credit by portfolio assessment,” and a maximum of six credits can be earned by “departmental credit by examination.”

### Minor in Computer Science

For a minor in computer science, a student must complete the following 20 credits of computer science courses, of which at least half of the credits must be taken at SUNY Brockport. Note that the prerequisite courses are CSC 120, MTH 122, and MTH 281.

#### Core courses (8 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 203</td>
<td>Fundamentals of Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>CSC 205</td>
<td>Fundamentals of Computer Science II</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Elective Courses (12 credits)

- Four CSC courses at the 300 level or above

**Total:** 20

Note: For additional and updated information on the computer science program, see the Computer Science Handbook, available in the Department of Computer Science office.
Minor in Computer Information Systems
For a minor in computer information systems, a student must complete the following 19 credits of CSC and CIS courses, of which at least half of the credits must be taken at SUNY Brockport (according to College policy). Note that the prerequisite courses are MTH 122, and CSC 120 and 104.

(A) Core courses (13 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 203</td>
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<td>CIS 202</td>
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<td>CIS 317</td>
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(B) Elective courses (6 credits)

- Any 300 or higher CIS course
- Any elective CSC course allowed for IS track majors

Total: 19

**COMPUTER SCIENCE COURSES**

Generally, SD-track core courses are offered both fall and spring semesters, and SD-track electives are offered every other semester. Exceptions and late changes are possible; check the most recent registration schedule, or call the Department of Computer Science at (585) 395-2146.

**CSC 104 Computers in the Business World (A).**
Provides a general introduction to the different uses of computers in business. Includes these topics: computer system concepts, data representation and storage, processor and peripheral hardware, data processing and word processing systems, spreadsheets, report generation, database queries, and management packages. 3 Cr. Every Semester.

**CSC 105 Internet and Web Publishing (A).**
Prerequisite: CSC 104, CIS 106, and GEP 150 or equivalent. Provides a general introduction to cyberspace. Includes these topics: Internet, e-mail, lists, newsgroups, Gopher, Telnet, FTP, World Wide Web, net browsers, and creating Web home pages using HTML. 3 Cr. Every Semester.

**CSC 120 Introduction to Computer Science (A).**
Prerequisite: MTH 121 or equivalent by instructor’s permission. Provides an introduction to problem solving and computers for prospective computer science majors or minors, or other students wishing to take CSC 203. Includes these topics: computer system orientation; data representation; algorithms and their properties, representations, and structure; designing and testing algorithms; assembly language concepts; syntax notation; elementary Java programming; and history, uses, and social effects of computers. Requires extensive programming. (Closed to students who have successfully completed preparation for CSC 203.) 3 Cr. Every Semester.

**CSC 203 Fundamentals of Computer Science I (A).**
Prerequisites: MTH 122 and CSC 120 or equivalent by instructor’s permission. Covers fundamental computer science concepts and programming in Java. Includes these topics: computing system concepts, problem solving, algorithm design, top-down development, program testing and documentation, data types (built-in and enumerated), data manipulation, sequences, selection, loops, modules, parameters, arrays, records, strings, files, introduction to sorting and searching techniques and other basic algorithms. Requires extensive programming and supervised lab sessions. 4 Cr. Every Semester.

**CSC 205 Fundamentals of Computer Science II (A).**
Prerequisites: CSC 203 and MTH 281. Covers abstract data structures and their operations, and software engineering concepts. Includes these topics: program development (interpreting specifications, top-down development, information hiding, structured testing), implementation of built-in data types and structures, files, pointers, stacks, queues, linked lists, recursion, trees, searching and sorting algorithms, and an introduction to complexity analysis of algorithms. Requires extensive programming and supervised lab sessions. 4 Cr. Every Semester.

**CSC 212 Programming in VISUAL BASIC (A).**
Prerequisite: MTH 121. Provides a general introduction to computer programming and applications for non majors using the VISUAL BASIC language. Includes these topics: computer terminology, programming concepts, language
features, and algorithm design. Introduces a survey of computer applications using the following programming techniques: structured design concepts, decisions, loops, functions, subroutines, arrays, and files. Requires extensive programming. 3 Cr. Every Semester.

CSC 295 Topics in Computer Science (A). Prerequisite: Published prior to registration each semester. Addresses current topics in the field at an introductory level. Each offering of the course is motivated by the expertise of the instructor and by students' interests. Descriptions and prerequisites are published prior to the registration period for the course. Example topic: Windows NT. 3 Cr. Every Semester.

CSC 303 Digital Logic and Computer Design (A). Prerequisite: MTH 281. Provides an introduction to digital logic and design of computers. Includes these topics: number systems, Boolean algebra and logic gates, simplification of Boolean functions, combinational and sequential logic design, registers, counters and memory units, register transfer logic, ALU and control unit design. Includes hands-on experience with hardware circuit components. 3 Cr. Every Semester.

CSC 311 Computer Organization and Assembly Language Programming (A). Prerequisite: CSC 205. Covers basic hardware organization and architecture of digital computer systems: data representation and digital arithmetic; processor, memory and I/O organization; fetch-and-execute cycle; instruction encoding and addressing modes. I/O techniques; interrupt logic and interrupt handling; assembly language programming, macros, subroutines and linkage; and basic concepts of two-pass assemblers linking and loading of external modules. Requires extensive programming and supervised laboratory sessions. 4 Cr. Every Semester.

CSC 319 Introduction to UNIX Programming (A). Prerequisite: CSC 205. Provides a comprehensive study of the C programming language and the UNIX operating system from the programmer's point of view. Covers language features, program development, modularization, low-level I/O, system function calls, UNIX-specific library functions, UNIX commands, programming environment and utilities. Requires extensive programming. Recommended preparation for CSC 412. 3 Cr. Every Semester.

CSC 321 Introduction to UNIX System Administration (A). Prerequisite: CSC 319 or instructor's permission. Covers administration of a UNIX system. Emphasizes UNIX system V.4 hosts (Solaris 2.5), but information about other systems will also be discussed. Includes these topics: system setup, automating routine tasks, user account setup, file system management, configuring TCP/IP services, performance monitoring and tuning, trouble shooting, security, and accounting. Requires extensive programming. 3 Cr. Every Semester.

CSC 339 Web Programming (A). Prerequisites: CSC 319. Studies programming techniques and tools to create dynamic and active Web documents. Includes these topics: designing Web pages and HTML 4.0 static, dynamic and active Web documents, lists, tables and fill-out forms; hypermedia links and frames; DHTML and style sheets; client-server paradigm and interaction, HTTP protocol; CGI programming, simple Perl scripts; understanding JavaScript, specification, objects, validating forms; and introduction to Java applets. Requires extensive programming. 3 Cr. Every Semester.

CSC 401 Theory of Programming Languages (A,U). Prerequisite: CSC 311. Covers programming language concepts, description, design, and evaluation. Includes these topics: language families and history; design principles; BNF and other syntax notations; compilation vs. interpretation; implementation concepts; comparison of features and conventions of various languages, including: data types, structures, declaration, abstraction, binding, scope, conversion, and protection; computational primitives; control structures; sub-programs; I/O; exceptions; concurrency; preprocessors; and programming environments. Requires extensive programming. 3 Cr. Every Semester.

CSC 406 Algorithms and Data Structures (A). Prerequisite: CSC 205 and MTH 481. Covers design and analysis of data structures and associated algorithms. Includes these topics: arrays, strings, stacks, linear and generalized lists, multilists, multitings, queues, sets, hashing, trees, graphs, recursion, searching and sorting, and applications such as text processing, polynomials, sparse matrices, storage management, and unlimited-precision arithmetic. Requires extensive programming and supervised lab sessions. 4 Cr. Every Semester.

CSC 411 Computer Architecture (A). Prerequisites: CSC 303 and 311. Covers design and organization of digital computers. Includes these topics: digital logic and circuit design, data representation, registers, memories and memory management, CPU and ALU architectures, instruction sets, busses and I/O systems, interrupt structure, and microprogramming. Covers additional topics such as virtual machines, parallelism, pipelining, and data flow machines. 3 Cr. Every Semester.

CSC 412 Operating Systems (A). Prerequisites: CSC 303 and 311. Recommended: CSC 319 or knowledge of C and UNIX. Covers basic principles of operating systems. Includes these topics: file systems, CPU scheduling and context switching, memory management and virtual memory, disk scheduling, deadlock, concurrent processes and
programming, protection mechanisms, design principles, and attempts at standardization. Includes an in-depth study of the UNIX operating system. Requires extensive programming. 3 Cr. Fall.

CSC 419 Computer Networks (A). Prerequisites: CSC 303, 311, and 319. Provides a comprehensive study of the field of computer communications, with emphasis on the theoretical aspects of local area networks. Compares specific LANs. Includes these topics: the ISO model, protocols, topologies, error detection and correction, routing, packet-switching, virtual circuits, and datagrams. 3 Cr. Fall.

CSC 422 Relational Database Design (A). Prerequisite: CSC 205. Provides a study of the theory and practice of the relational approach to database design. Includes these topics: DBMS vs. a traditional file processing, relational algebra, normalization, lossless and/or dependency preserving decomposition, query languages such as SQL and a language that is available on the system, query optimization, integrity and security, and database project design. Requires extensive programming. 3 Cr. Fall.

CSC 427 Software Systems Engineering (A). Prerequisite: CSC 311 or instructor's permission. Provides an introduction to software engineering and programming-in-the-large. Includes these topics: life-cycle models, development standards, project organization, requirements engineering, configuration management, quality assurance, cost and manpower estimates, specification techniques, design methods and representations, human factors, structured programming, object-oriented programming, testing and integration, validation, maintenance, and documentation. Requires the class to work as a project team developing a system for an actual customer. Communication and writing skills are essential. Requires extensive programming. 3 Cr. Fall.

CSC 429 Object-oriented Programming (A). Prerequisite: CSC 205. Provides an introduction to basic concepts in object-oriented programming (OOP) and how to apply OOP techniques using an appropriate OOP language such as Java or C++. Includes these topics: the OOP programming paradigm including analysis and design; a survey of related languages; data hiding and encapsulation; inheritance; and polymorphism. Requires implementation of these concepts using appropriate programming language constructs and extensive programming. 3 Cr. Spring.

CSC 432 Simulation (A). Prerequisites: CSC 203 and MTH 281. Covers computer modeling of complex systems with an emphasis on discrete stochastic models. Includes these topics: brief review of random variables, distributions and statistical tests, random number generation, mathematical model of a simple queue, simulation of discrete systems (with SIMSCRIPT), and continuous system simulation. 3 Cr. Fall.

CSC 433 Computer Graphics (A). Prerequisite: CSC 311. Provides a hands-on approach to computer graphics, emphasizing interactive 2D raster techniques. Includes these topics: graphics models, drawing primitives and clipping, color models, user interaction, 2D geometrical transformations, animation, curve and surface representations, introduction to 3D projections, solid modeling and rendering. Requires extensive programming. 3 Cr. Spring.

CSC 434 Artificial Intelligence (A). Prerequisite: CSC 205. Provides an introduction to artificial intelligence. Includes these topics: history and state of the art in AI; programming techniques in the languages LISP and PROLOG; fundamental methods in AI including heuristic search, knowledge representation using predicate logic, and production systems; classic basic problems involving games, graphs, theorem-proving, symbolic algebra, expert systems, natural language, etc. Requires extensive programming. 3 Cr. Fall.

CSC 437 Computer-human Interface Design (A). Prerequisite: CSC 205. Provides a hands-on introduction to design and implementation of software for streamlined computer-human interaction, emphasizing graphical user interfaces. Includes these topics: theoretical models; design guidelines; implementation and evaluation methodologies; interaction paradigms, e.g., command-line, menus, hypertext, multimedia; case studies of graphical environments, e.g., Microsoft Windows, Macintosh, X-Windows; and application areas, e.g., online help, data entry/editing, query processing, programming, instruction, process control, communication. Requires extensive programming. 3 Cr. Spring.

CSC 444 Introduction to Parallel Computing (A). Prerequisites: MTH 481 and CSC 406. Deals with design and analysis of parallel algorithms. Includes these topics: parallel models of computation, measures of complexity, parallel algorithms for selection, searching, sorting, merging, matrix algorithms, transitive closure, connected components, shortest path, minimum spanning tree and routing algorithms. Provides hands-on experience in a parallel programming environment. 3 Cr. Spring.

CSC 483 Theory of Computation (A). Prerequisites: CSC 203 and MTH 481. Provides a study of formal languages and theory of automata with an emphasis on Church's thesis and the "algorithm = machine" point of view. Includes these topics: regular expressions and context-free languages, finite and pushdown automata, Turing machines, computability, undecidability, and complexity of problems. 3 Cr. Spring.
CSC 486 Junior/Senior Seminar (A,U,E). Prerequisites: CSC 205, junior or senior status, and computer science majors only. Provides an overall view of the professional field of computing, emphasizing development of communication skills for the profession. Includes these topics: detailed history of computing technology, social effects of computing, ethics in the field, professional literature, organizations and related activities, current industrial, social, legal governmental and technical developments, and career opportunities. Requires extensive reading and writing, both technical and non-technical, as well as library research, and prepared group discussions. 3 Cr. Every Semester.

CSC 492 Internship (A). Prerequisites: Junior status, 3.0 or better average in computer science courses, appropriate course work, at least 18 credits towards the major completed prior to starting the internship, and instructor’s permission. Provides an opportunity to apply knowledge from the classroom by working in a professional setting. Also provides a valuable and challenging experience for students who have never worked in such a situation, as well as for professionals furthering their education. Teaches the successful intern how effective professional performance requires integrating substantive knowledge with behavioral skills and proficiency in oral and written communication. Each student is supervised on campus by a computer science faculty member, and at the work site by qualified management personnel. Past projects have involved software engineering, graphics, database design, data communications, and process control. 1–3 Cr. Every Semester.

CSC 493 Senior Thesis (A). Prerequisites: Junior status, 3.0 or better average in computer science, appropriate coursework, at least 18 credits towards the major completed prior to starting the thesis, and permission of instructor. Provides students with an opportunity to apply knowledge from the classroom by working in an independent research or development project in an academic setting, which is a valuable and challenging experience for students who are contemplating graduate studies in computer science, to test out their potential for independent study and advanced research. May involve substantial software or hardware development, structuring available commercial software/hardware for specific applications, or theoretical analysis of computational schemes. By developing a successful thesis, permits students to enrich their knowledge of computer applications, theory, hardware or software, to develop skills in analyzing problems involving current computing technologies, and to make effective oral and written presentations of their accomplishments. Each student is supervised by a Department of Computer Science faculty member. For details, see “The Computer Science Thesis Option” in the Handbook. 3 Cr. Every Semester.

CSC 495 Topics in Computer Science (A). Prerequisite: Instructor’s permission. Addresses current topics in the field. Each offering is motivated by the expertise of the instructor and students’ interests. Requires students to complete a major research, design, or development project. Descriptions and prerequisites are published prior to the registration period for the course. Past topics include: networking, human factors, computational linguistics, advanced architecture, software engineering, logic programming, and program validation, object-oriented programming and parallel algorithms. 3 Cr. Every Semester.

CSC 499 Independent Study in Computer Science (A). Prerequisite: Instructor’s permission. Arranged in consultation with the instructor-sponsor and in accordance with the procedures of the Office of Academic Advisement prior to registration. 1–3 Cr. Every Semester.

INFORMATION SYSTEM COURSES

CIS 106 End-user Computing. (A) Develops students’ acumen in key end-user computing technologies, to a level that will allow students to utilize technology successfully in the workplace and to meet the contemporary expectations of employers. Includes topics such as word processing, operating systems, spreadsheets, office presentation, net work applications, and databases. Requires extensive lab work. 3 Cr. Every Semester.

CIS 202 Fundamentals of Information Systems. (A) Prerequisite: CSC 104 or CIS 106. Introduces the use of information systems and information technology in organizations. Considers concepts of information management, systems theory, quality, enhanced decision making, and added value in products and services. Stresses information technology, including computing and telecommunications systems. Teaches students to analyze requirements, define an information system, and develop custom solutions to enhance productivity. 3 Cr. Every Semester.

CIS 295 Topics in Computer Information Systems. Prerequisites: Published prior to registration each semester. Addresses current topics in the field at an introductory level. Each offering of the course is motivated by the expertise of the instructor and by students’ interests. Descriptions and prerequisites are published prior to the registration period for the course. Example topic: information technology hardware and software laboratory. 3 Cr. Every Semester.

CIS 303 Information Technology Hardware and Software. (A) Prerequisites: CIS 202 and MTH 281. Covers both hardware and software components of computer systems. Examines the basic elements of a computer system, including CPU architecture, memory, buses, instruction
CIS 304 Computers and Office Productivity. (A) Prerequisites: CSC 104 or CIS 106 and CSC 120. Studies computer-mediated office communication and business data processing. Includes topics such as guidelines for buying office computers, operating systems and graphical user interfaces, word processing, desktop publishing, grammar and style checkers, office presentations, multimedia documents, spreadsheets with advanced applications, business charts, Internet and intranet, e-mail, World Wide Web, search engines, Web publishing, and copyright and ethical issues. Requires extensive lab work. 3 Cr. Every Semester.

CIS 317 Analysis and Logical Design of Information Systems. (A) Prerequisites: CIS 202 and 304 (or BUS 317), and CSC 203. Studies requirement analysis, system development and modification process. Includes topics such as lifecycle phases and the role of systems analyst; organizational style, feasibility and impact of information systems; requirements analysis, sampling and investigating data, interviewing; data flow diagrams, data dictionaries, preparing and writing proposals; prototyping, designing for effective input and output, user interface; software metrics, quality assurance, and software package evaluation and acquisition. 3 Cr. Fall.

CIS 334 Decision Support and Expert Systems. (A) Prerequisites: CIS 202 and CSC 203. Covers Decision Support Systems (DSS) and its subsystems: DSS overview, data management, modeling and model management, knowledge subsystem, user interface subsystem, group decision support systems, executive information and support systems, fundamentals of artificial intelligence, expert systems, knowledge acquisition and validation, knowledge representation, and expert system building tools. 3 Cr. Fall.

CIS 404 Multimedia Applications. (A) Prerequisites: CIS 303 and 304. Studies multimedia systems and applications in the business world. Includes topics such as multimedia applications, hypertext and hypermedia, audio, graphics, images, and full-motion video; multimedia-ready personal computers and workstations, storage devices, operating systems and graphical user interfaces; communication and networking requirements, multimedia applications on the Internet; file formats, data compression and streaming audio/video; and multimedia authoring tools. 3 Cr. Spring.

CIS 419 Computer Networks and Internet Applications. (A) Prerequisites: CIS 304 (or BUS 317) and CSC 203. Studies data communication, computer networks, and Internet applications. Includes topics such as data communication, LAN and WAN applications, Internet and intranet, e-mail, FTP and Web applications, distributed systems, standards; communication concepts, media, coding of data, error control, LAN topologies and protocols, bridges, routers and gateways; TCP/IP, client server paradigm; network configuration, performance monitoring, management, security, and reliability. 3 Cr. Fall.

CIS 422 Physical Design and Implementation of DBMS. (A) Prerequisite: CIS 317 or BUS 417. Covers information systems design and implementation within a database management system environment. Requires students to design and construct a physical system using database software to implement the logical design. Stresses basic knowledge of normalization of data modeling, database methods, database design, and the use of databases in business. 3 Cr. Spring.

CIS 427 Project Management and Practice. (A,U) Prerequisite: CIS 317 or BUS 417. Introduces software development and management of the development process. Includes topics such as managing the software lifecycle: requirements definition, logical design, physical design, implementation, testing, system integration, maintenance; design techniques (structured, event-driven and object-oriented); implementation; testing and software quality assurance; delivery and user training; metrics for project management and system performance evaluation; management expectations: personnel management, cost analysis and change management; management of behavioral and technical project aspects. Is placed in the framework of client-server systems. 3 Cr. Spring.

CSC 429 Object-oriented Programming. (A) Prerequisite: CSC 205. Provides an introduction to basic concepts in object-oriented programming (OOP) and how to apply OOP techniques using an appropriate OOP language such as Java or C++. Includes topics such as the OOP programming paradigm including analysis and design, a survey of related languages, data hiding and encapsulation, inheritance, and polymorphism. Requires implementation of these concepts using appropriate programming language constructs. Also requires extensive programming. 3 Cr. Spring.

CSC 492 Internship. (A) Prerequisites: Junior status, 3.0 or better in major courses, appropriate coursework, at least 18 credits towards the major completed prior to starting the internship, and instructor’s permission. Provides a supervised experience in information
systems in a practical operating environment. May involve applications in business programming, requirements analysis, requirements tracking, project management assistance, test development, Web applications, process control, database design, data communications, etc. 1–3 Cr.

CIS 493 Senior Thesis. (A) Prerequisites: Junior status, 3.0 or better average in major courses, appropriate coursework, at least 18 credits towards the major completed prior to starting the thesis, and instructor's permission. Provides a supervised experience in computer information systems to pursue an independent research or development project in an academic setting. Requires each thesis to have its own specific objectives. May involve substantial software development, structuring available commercial software/hardware for specific applications, or an empirical case study of the use of technology. Requires a written thesis and an oral presentation. 3 Cr.

CIS 495 Topics in Information Systems. (A) Prerequisites: Published prior to registration each semester. As an advanced course, addresses current topics in the field. Each offering of the course is motivated by the expertise of the instructor and by students' interests. Requires students to complete a major research, design, or development project. Descriptions and prerequisites are published prior to the registration period for the course. 3 Cr.

CIS 499 Independent Study in Information Systems. (A) Prerequisite: Instructor’s permission. Arranged in consultation with the professor-sponsor and in accordance with the procedures of the Office of Academic Advisement prior to registration. 1–3 Cr.

DEPARTMENT OF COUNSELOR EDUCATION

184 Faculty Office Building
(585) 395-2258

Chairperson and Associate Professor: Susan R. Seem; Professor: Muhyi Shakoor; Assistant Professors: Jeff Cochran, Patricia Goodspeed, Thomas Hernandez, Leslie McCulloch.

The department does not offer an undergraduate academic major. A few courses, however, are offered for the undergraduate student. For information on graduate degrees in Counselor Education, refer to the Graduate Catalog.

COUNSELOR EDUCATION COURSES

EDC 201 Career/Life Planning (B). For adults desiring to determine future goals. Allows students to assess their ideal goals, interests, abilities and skills through class discussion, assigned readings and papers. Allows students to decide on future directions. 1 Cr.

EDC 301 Introduction to Counseling (B). Explores the philosophical basis of counseling. Requires students to identify and understand five counseling theories and five interpersonal skills, and to demonstrate basic competence in interpersonal relations. 3 Cr.

EDC 302 Achieving Helping Relationships in College Residence Halls (B). Explores the role and responsibilities of the college resident assistant. Allows students to develop and practice the skills of assertiveness, conflict management, empathic listening, helping, self-awareness and self-disclosure. Allows these skills to be applied to the college environment and to current issues facing college resident assistants. 3 Cr. Every Semester.

EDC 418 Conferencing Skills (B). Explores the knowledge and skills related to conferencing with students, parents and others. Includes communication models with an emphasis on applying the knowledge to conferencing skills. Entails demonstrations, simulations and role-playing activities. Not applicable as an elective in the Counselor Education program. 3 Cr.