

## DEPARTMENT OF BUSINESS ADMINISTRATION AND ECONOMICS

119 Hartwell Hall

(585) 395-2623

[www.brockport.edu/bus-econ/](http://www.brockport.edu/bus-econ/)

*Chairperson and Associate Professor:* William Dresnack; *Associate Chairperson:* Jerald Weaver; *Professors:* John Gardner, Joseph Mason, Sandeep Singh, John Spitzer; *Associate Professors:* Steven Breslawski, Gary Briggs, Charles Callahan III, James Cordeiro, Richard Fenton, Baban Hasnat, D. Donald Kent, Susan Stites-Doe, Jeffrey Strieter, Ralph Trecartin, Melissa Waite, Jerald Weaver; *Assistant Professors:* Thomas Cone, M. Asri Jantan, John Keiser, Yusuf Nur, Gail Rein, Jane Romal, Rong Yang; *Emeritus Faculty:* Inaam Al-Hashimi, John Chasse, Rawle Farley, Yu-Ku Li, Edward Van Duzer.

**Programs:** The department's programs are accredited by The Association to Advance Collegiate Schools of Business International (AACSB). AACSB accreditation is a symbol of high program quality and indicates that the department's programs have undergone extensive external review to ensure they meet the rigorous standards developed by more than 900 leading 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 administration, economics, and finance.

**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 proficiency in written and oral communication, numeracy, and teamwork.

**The Accounting Major** prepares students to pursue careers in public accountancy as CPAs and as accountants in business, government, and not-for-profit organizations. 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.

**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, but the department cannot guarantee optimal sequencing for evening students. **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. Students planning to complete a degree through evening courses should work closely with their advisor in planning degree completion.

### **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 19 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 for admission or readmission into a degree program). The department continuously revises its programs in response to changes in the business environment and the changing expectations of employers. Therefore the degree requirements listed in the *Undergraduate Studies Catalog* may not be current. Students and prospective students should check the department's Web site for the most current program requirements, descriptions, and course offerings.

**2) Time Limitation:** Courses completed more than 10 years prior to matriculation cannot be used to satisfy degree requirements in any of the department's majors or minors. 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 examination rather than repeat a course; contact the department for details. This policy applies to courses taken at SUNY Brockport and courses taken at other institutions.

**3) Advisement:** Students majoring in the department's programs will be assigned a business faculty advisor when they declare their intent to major in business. The advisor's name will then appear at the top of the student's Degree Audit Report (DARS); DARS is available on the Web. After an advisor has been assigned, students are required to meet with their advisor each semester and are expected to:

1. Bring a copy of their DARS report to the meeting.
2. Prior to the meeting, consult their DARS report and the College's *Undergraduate Studies Catalog* or department Web site for the purpose of determining which degree requirements the student has not yet met.
3. Prior to the meeting, prepare a proposed schedule of classes for the following semester. Advisors assist students by reviewing the courses that the students select 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 students' schedule for them.
4. Prior to the meeting, consult with the online course schedule to confirm that the classes in the student's proposed schedule are still open, making adjustments as necessary.

**It is the advisor's prerogative to decline to meet with students who fail to meet these expectations**, i.e., students who are unprepared. Unprepared students will be required to reschedule their meeting at a later date, which may result in courses filling before the student has the opportunity to register. This, in turn, may delay the student's graduation.

Faculty advisors assist students in academic planning, but each student is ultimately responsible for knowing and meeting their degree requirements as specified in the College catalog and on their Degree Audit Report (DARS).

**4) Registration:** Each semester, the College will publish a schedule of the classes available the following semester. The schedule of classes also contains information on registration dates and times. A student's registration date and time will vary by class rank and last name.

Students must consult with their advisor and obtain an advisement Personal Identification Number (PIN) prior to registration for the following semester. Students should contact their advisor at least two weeks in advance of their registration date for the purpose of understanding how to schedule advisement. Advisors' office hours will be posted on their office door or are available from the department secretary at **(585) 395-2623**. 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. Please speak slowly and clearly when leaving voice mail messages.

Students who are unable to arrange advisement with their designated advisor, because of work or class schedule conflicts, should call **(585) 395-2623** and request an appointment with the department's general advisement staff. However, students are expected to work with their primary advisor if possible.

Students who do not contact their faculty advisor on a timely basis or who register for courses after their designated registration date will often find themselves closed out of required courses, causing the students' graduation date to be delayed.

**5) Closed Courses:** The department sets enrollment caps on each course offered. Registration into closed business courses is controlled by the department and not by the instructor, i.e., an instructor cannot give permission to add into a closed course.

Students seeking to add a closed course must complete a petition available in the department office. In general, the department gives priority to students who 1) need a course to graduate on time, 2) demonstrably cannot take an alternative, open course, and 3) made an attempt to register for the course during their designated registration period, i.e., the student did not register late. Students who fail to register during their designated registration period will not be added to closed sections or otherwise accommodated. As such, it is important that each student register at the designated time.

**6) Required Course Grades:** An overall average of 2.0 is required to complete any major or minor offered by the department. In general, students majoring in the department's programs need to earn a grade of at least "C-" in a course to count the course toward 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 (D- or above) to count the course toward the minor.

**Note:** GPA requirement for acceptance as a business administration minor requires a minimum 3.0 GPA.

**7) Three Strikes Policy:** To satisfy the minimum grade requirement described in 6 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 (the student will need to pursue a major or minor in another department).

**Note:** This rule applies only to accounting, business, economics courses, ENL 308 and CIS 106.

**8) General Education Requirements:** In addition to their major course work, students majoring in the department's programs must complete all College General Education requirements; these are described in the College's *Undergraduate Studies Catalog*. A student's required general education requirements will vary depending on the student's matriculation (entrance) date and transfer status. Each student's general education requirements are specified in their Degree Audit Report (DARS); DARS is available on the Web.

**9) Transfer Course and Grade Policy:** In general, a grade of "C-" or higher is required for transferred courses to be used to satisfy prerequisite, corequisite, business core, and specialty area 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.

**10) Requests for Transfer Credit:** The College maintains a large database of transfer course equivalencies. Courses from other schools are often automatically transferred as equivalent to a specific SUNY Brockport course. If a course has been transferred as equivalent to a SUNY Brockport course, the equivalency will be shown on the student's DARS report.

Other times, however, courses are transferred for general credit, but no specific course equivalency is indicated on DARS. If you believe that a course taken elsewhere is equivalent to a specific SUNY Brockport course, you will need to complete a course equivalency transfer request form (available in 119 Hartwell Hall) and provide documentation of equivalency (e.g., a detailed syllabus). Submit the form and the documentation to the secretary of the department that offers the course. Your request will then be evaluated in accordance with the department-specific process for evaluation of transfer requests.

**Except as noted below**, 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. The student cannot receive transfer credit unless both the department and the College approve the transferred courses, and the number of courses transferred is subject to the residency requirements of the College and department.

After matriculating at SUNY Brockport (formal admission to the College), students must take all 400-level accounting, business, and economics 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.

**Note:** A separate set of policies applies to CIS 106 (End User Computing) and ENL 308 (Business Writing). These courses are not generally accepted from other institutions. However, these courses may be waived under certain circumstances. Information on specific conditions and the process for waiver of these courses is available in the department office (119 Hartwell Hall).

**11) Residency Requirement:** At least one half of the course work required to complete any department major or minor must be taken at SUNY Brockport. Additionally, as noted in section 10 above, certain courses cannot be transferred. These courses must be taken at SUNY Brockport.

**12) Participation in Assessment Activities:** The Department of Business Administration and Economics administers various assessment instruments throughout the curricula of its programs. Assessment activities may take the form of exams, exercises, or surveys. Assessment data is used for quality control and program improvement. Many of the department's program improvement efforts are based on assessment results.

However, assessment results are valid only when students give their serious participation and best effort. 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 other exams. Students who are absent when assessment exercises are conducted may be required to repeat the exercise as a condition of passing the course.

**13) Internships:** The department encourages student participation in internship experiences that are relevant to the student's degree and area of specialization. Increasingly, employers seek to hire individuals with relevant work experience. An internship is not required for graduation, but students without significant work experience (relevant to their major) are strongly encouraged to complete at least one internship experience. The Department of Business Administration and Economics limits the number of credits and internship experiences a student may complete to a maximum of 15 credits and two internship experiences. Information on internship programs and procedures may be obtained in 110 Hartwell Hall.

**14) Academic Dishonesty (Cheating):** The definitions of academic dishonesty are provided in a College publication entitled *Your Right To Know & Academic Policies Handbook*. Students in the department's programs are bound by the definitions and policies described in *Your Right To Know & Academic Policies Handbook*. The department reserves the right to expel, from its programs and courses, any student found to be engaged in premeditated acts of academic dishonesty. This policy is strictly enforced. Your first offense will be your only offense; there are no warnings.

All work and assignments completed in the department's courses should be assumed to be individual assignments unless you have received explicit permission from the instructor to work with one or more partners.

The *Your Right To Know & Academic Policies Handbook* is produced for distribution every fall. It contains important information every student should know about campus safety, codes of student conduct, and more. You can stop by the office of the Division of Student Affairs on the sixth floor of the Allen Administration Building to pick up a copy.

**15) Student Conduct:** Students are expected to treat each other, their instructor, persons in charge, and the department's staff with common courtesy, decency and respect. Students will recognize the instructor's authority to lead and direct classroom activities. Students will refrain from all behaviors that interfere with the teaching and learning process as well as behaviors that are disrespectful or belligerent to faculty and staff. All behaviors that, in the judgment of the instructor, interfere with the teaching/learning process will be considered disruptive.

Campus policies on disruptive behavior and students are detailed in the *Your Right To Know & Academic Policies Handbook* document (referenced in section 14 above). Disruptive students may be asked by the instructor to leave the classroom; students refusing to do so will be escorted from the premises by University Police. Students who are consistently or seriously disruptive will be dismissed from the department's programs and may be expelled from the College.

**16) Course Prerequisites:** Many of the department's courses have prerequisite courses. The College catalog details the prerequisites for all established courses; for new courses not listed in the catalog, students should speak with the instructor. The prerequisites for a course must be completed prior to registration for the course. Students who are found to be deficient in the prerequisites for a course may be dropped from the course.

**In particular, the courses BUS 325 Principles of Finance and BUS 475 Strategic Management have a sizeable number of prerequisites.** Students who fail to complete prerequisites for these courses in a planned and timely basis are likely to find that they will not be able to graduate as planned.

**17) Timely Completion of Program Entrance Requirement:** Students admitted to the College are not automatically admitted to the department's programs. Students must first meet program entrance requirements, which include prescribed prerequisite course work. Prerequisite courses vary by degree program. There are prerequisite requirements for all department majors and some minors.

- Full-time students entering as freshmen are expected to complete prerequisite course work by the first semester of their junior year.
- Full-time students transferring with an associates degree in business are expected to complete prerequisite course work in their first semester at Brockport.
- Part-time students are expected to complete prerequisite courses before beginning 300-level business courses.

**Timely completion of program prerequisites is the student's responsibility. Failure to complete program entrance requirements on a timely basis may delay the student's graduation.**

**18) Separation from the College:** If a student chooses to leave the College prior to graduation, a leave of absence should be filed with the Career Services Separations Office (Rakov Center). Leaves of absence expire after one year and if the student returns at a later date to complete the degree, the student will need to reapply to the College. Further, the student will need to complete the (potentially new) degree requirements in effect at time of readmission. This includes any changes in the major and in the General Education requirements of the College. Students, therefore, are strongly advised not to separate from the College prior to completing their degrees.

**19) Department Communications:** The department uses an e-mail list-server to communicate important announcements, changes in class times and course offerings, new policies, information about department events, etc.

- Students are responsible for reading communications from the department and responding accordingly.
- Department communiques will be directed to the student e-mail address provided by the College. Students using a different e-mail account are responsible for redirecting messages from their SUNY Brockport account to their preferred e-mail address. Call the Information Technology Help Desk at **(585) 395-5151** for assistance in this regard.

- The department's e-mail list-serve is for official department communiques only, and all communiques will originate from the department office. Under no circumstance is any student allowed to broadcast messages using this list-serve. Unauthorized use of the list-serve will be taken very seriously and the offender referred to the campus Judicial System for appropriate action.

### **Business Administration Major**

The **Business Administration Major** prepares students to assume entry-level positions in an organization's accounting, financial, marketing and management systems. It also offers excellent preparation for graduate or law school study. 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 the 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.
- (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 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.

|  | <b>Credits</b> |
|--|----------------|
| CIS 106 End-user Computing                                   | 3              |
| ECN 201 Principles of Economics - Micro                      | 3              |
| ECN 202 Principles of Economics - Macro                      | 3              |
| ECN 204 Introduction to Statistics                           | 3              |
| ACC 281 Introduction to Financial Accounting                 | 3              |
| ACC 282 Introduction to Managerial Accounting                | 3              |
| MTH 201 Calculus I <b>OR</b> (MTH 221 Calculus for Business) | 3              |
| <b>Total:</b>  | <b>21</b>      |

**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 beginning 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. Corequisite Requirements for Specialties Other than Finance (9 credits)**

|  | <b>Credits</b> |
|--|----------------|
| ENL 308 Business Writing <b>AND</b>              | 3              |
| ECN 304 Intermediate Statistics <b>AND</b>       | 3              |
| BUS 317 Management Information Systems <b>OR</b> | 3              |
| BUS 461 Production and Operations Management     | 3              |
| <b>Total:</b>                                    | <b>9</b>       |

**Note:** BUS 317 and BUS 461 may be taken to satisfy the corequisite requirement, or as a management specialty elective, but not both. Each course meets only one requirement.

**Corequisite Requirements for Finance Specialty**

|                                     |          |
|-------------------------------------|----------|
| ENL 308 Business Writing            | 3        |
| ECN 302 Intermediate Macroeconomics | 3        |
| ECN 304 Intermediate Statistics     | 3        |
| <b>Total:</b>                       | <b>9</b> |

**2b. Business Core Requirements (21 credits)**

|  | <b>Credits</b> |
|--|----------------|
| BUS 325 Principles of Finance              | 3              |
| BUS 335 International Business Environment | 3              |
| BUS 366 Organizational Behavior            | 3              |
| BUS 375 Business Law I                     | 3              |
| BUS 378 Business, Government, and Society  | 3              |
| BUS 475 Strategic Management               | 3              |
| <b>Total:</b>                              | <b>21</b>      |

**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 a *major in accounting*. For details, see **Majors in Accounting** below.

|  | <b>Credits</b> |
|--|----------------|
| ACC 385 Intermediate Accounting I              | 3              |
| ACC 386 Intermediate Accounting II             | 3              |
| ACC 388 Cost Accounting                        | 3              |
| ACC 485 Federal Income Tax I                   | 3              |
| ACC 486 Advanced Accounting                    | 3              |
| ACC 487 Auditing                               | 3              |
| ACC 488 Federal Income Tax II                  | 3              |
| ACC 489 Accounting for Not-for-Profit Entities | 3              |

**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 solid foundation for graduate work in business and finance, the specialty also prepares students to pursue professional certification, including the Certified Treasury Professional® (formerly Certified Cash Manager, CCM) exam, required for the CTP® designation.

Finance students *must* take the following two courses:

|  | <b>Credits</b> |
|--|----------------|
| BUS 421 Investment Analysis and Portfolio Management | 3              |
| BUS 422 Corporate Financial Policy                   | 3              |

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:

|  | <b>Credits</b> |
|--|----------------|
| BUS 368 Management Skills                    | 3              |
| BUS 369 Management Topics Seminar            | 3              |
| and two electives from the list below:       |                |
| BUS 317 Management Information Systems       | 3              |
| BUS 415 Data Management                      | 3              |
| BUS 417 Systems Analysis and Design          | 3              |
| BUS 418 Advanced MIS (formerly BUS 318)      | 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              |

**Note:** Neither BUS 317 nor BUS 461 may be counted for *both* the corequisite requirement and the specialty requirement.

### **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.

|   | <b>Credits</b> |
|---|----------------|
| 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 Integrated Marketing Communications | 3              |
| BUS 438 Supply Chain Management             | 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 law school, and develop a fuller understanding of various aspects of the law, the legal profession, and the legal environment. Students who choose not to enter law school are able to pursue business-related careers and graduate programs.

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

|   | <b>Credits</b> |
|---|----------------|
| 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 <i>at least</i> two electives from the list below:  |                |
| ECN XXX: Any <b>upper-division</b> 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 using electives to take all three courses.

(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. John Keiser, area coordinator for pre-law, in designing their program.

**Majors in Accounting**

The department offers two degrees in accounting, each leading to a Bachelor of Science in Accounting. The first is the 120-hour accounting major designed for individuals pursuing careers as accountants in business, government, or not-for-profit organizations. Students completing this degree are qualified to sit for the Certified Management Accountant (CMA) exam. Students completing this degree prior to August 1, 2009 are also qualified to sit for the Uniform Certified Public Accounting exam (CPA), if registered for the exam before August 1, 2009.

The second degree in accounting, referred to as the "Bachelor of Science In Professional Accounting," is the 150-hour accounting major designed for students who wish to qualify for the Certified Public Accountant (CPA) exam in New York state and pursue careers in public accounting as Certified Public Accountants. This degree pertains to students who sit for the Uniform CPA exam in New York after August 1, 2009. This degree program should be pursued by students matriculating as freshmen after August 1, 2004, assuming those students plan to complete college according to a traditional schedule (completing approximately 30 credits per year).

**Note:** Effective fall 2004, students who wish to sit for the CPA exam in New York state must complete a program in accounting with a minimum of 150 hours if completion of the program and registration for the CPA exam occur after August 1, 2009. Students completing a registered program consisting of 120 hours must do so before August 1, 2009 AND also register to sit for the CPA exam prior to August 1, 2009. It is highly recommended that students work closely with their academic advisors on meeting degree requirements for the CPA exam.

### **Accounting Degree Requirements Prior to August 1, 2009**

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 prior to August 1, 2009 accounting majors must complete a minimum 60 credits of prescribed business and accounting course work plus a minimum 60 credits of non-business, non-accounting, liberal-arts course work. In completing the required minimum 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 toward the requirements for this degree.

Students majoring in accounting within the 120-credit program must complete four groups of courses: (1) prerequisites, (2) corequisites, (3) business core courses, and (4) a prescribed series of upper-division accounting courses. Students completing the 150-credit program for a major in accounting must complete the four groups mentioned above plus two additional groups: (5) business electives and/or business internship and (6) computer information systems courses. See “Course Requirements” for both accounting majors below for details. Students without significant work experience relevant to accounting are strongly encouraged to complete at least one internship experience.

### **Course-Grade and GPA Requirements for the Majors 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 major 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-.” *Transfer grades are included in this GPA calculation.*
- (4) Students must earn an overall cumulative GPA of at least 2.0 in the SUNY Brockport courses used to satisfy corequisite, business core, upper-level accounting, business electives and/or business internship, and computer information systems 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 toward 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. Failure to participate in these assessment activities may result in students receiving an “E” grade for courses.

### Course Requirements for the Accounting Major (Prior to August 1, 2009)

#### 1. 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.

|  | <b>Credits</b> |
|--|----------------|
| CIS 106 End-user Computing                                 | 3              |
| ECN 201 Principles of Economics - Micro                    | 3              |
| ECN 202 Principles of Economics - Macro                    | 3              |
| ECN 204 Introduction to Statistics                         | 3              |
| ACC 281 Introduction to Financial Accounting               | 3              |
| ACC 282 Introduction to Managerial Accounting              | 3              |
| MTH 201 Calculus I <b>OR</b> MTH 221 Calculus for Business | 3              |
| <b>Total:</b>  | <b>21</b>      |

**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:

|   | <b>Credits</b> |
|---|----------------|
| ENL 308 Business Writing                                | 3              |
| ACC 283 Introduction to Accounting Systems and Software | 3              |

###### Analytical Skills Corequisites

|   |          |
|---|----------|
| ECN 304 Intermediate Statistics               | 3        |
| <b>AND one of the following four courses:</b> | <b>3</b> |

|  |  |
|--|--|
| ECN 301 Intermediate Microeconomics          |  |
| ECN 302 Intermediate Macroeconomics          |  |
| ECN 305 Managerial Economics                 |  |
| BUS 461 Production and Operations Management |  |

**Total: 12**

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

##### 2b. Business Core Courses (24 credits)

|  | <b>Credits</b> |
|--|----------------|
| BUS 325 Principles of Finance              | 3              |
| BUS 335 Principles of Marketing            | 3              |
| BUS 345 International Business Environment | 3              |
| BUS 366 Organizational Behavior            | 3              |
| BUS 375 Business Law I                     | 3              |
| BUS 376 Business Law II                    | 3              |
| BUS 475 Strategic Management               | 3              |

###### AND one of the following four finance electives:

|  |   |
|--|---|
| BUS 420 Short-term Financial Management              | 3 |
| BUS 421 Investment Analysis and Portfolio Management |   |
| BUS 422 Corporate Financial Policy                   |   |
| ECN 321 Money and Banking                            |   |

**Total: 24**

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

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

**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's General Education requirements. Further, in order to meet the New York state requirements (prior to August 1, 2009) for sitting for the CPA exam, accounting majors must complete 60 credits of non-business, non-accounting liberal arts course work. These students need to work closely with their advisor to understand which of their courses count toward this required minimum 60 credits. Because of the 60-credit liberal arts minimum under CPA Exam requirements, accounting majors are limited in the number of additional (elective) business or accounting courses that can be used toward the 120 credits required for the degree. Again, it is very important for students, especially transfer students, pursuing the accounting major and completing the 120-hour program, to work closely with their advisor to understand the limitations on the number of business and accounting courses that can be counted toward the 120-credit graduation requirement for the CPA exam.

### **Course Requirements for the Bachelor of Science in Professional Accounting (150 Credits Bachelor of Science, required for those enrolling for the CPA exam in New York state after August 1, 2009):**

#### **1. 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.

|         |   | <b>Credits</b>   |
|---------|---|------------------|
| CIS 106 | End-user Computing                          | 3                |
| ECN 201 | Principles of Economics - Micro             | 3                |
| ECN 202 | Principles of Economics - Macro             | 3                |
| ECN 204 | Introduction to Statistics                  | 3                |
| ACC 281 | Introduction to Financial Accounting        | 3                |
| ACC 282 | Introduction to Managerial Accounting       | 3                |
| MTH 201 | Calculus I or MTH 221 Calculus for Business | 3                |
|         |   | <b>Total: 21</b> |

**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, 2c, 2d and 2e 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)**

| <b>Professional Skills Corequisites</b> |   | <b>Credits</b> |
|---|---|----------------|
| ENL 308                                 | Business Writing                                | 3              |
| ACC 283                                 | Introduction to Accounting Systems and Software | 3              |

**Analytical Skills Corequisites**

|                                 |   |
|---------------------------------|---|
| ECN 304 Intermediate Statistics | 3 |
|---------------------------------|---|

|   |          |
|---|----------|
| <b>AND one of the following four courses:</b> | <b>3</b> |
|---|----------|

|  |  |
|--|--|
| ECN 301 Intermediate Microeconomics          |  |
| ECN 302 Intermediate Macroeconomics          |  |
| ECN 305 Managerial Economics                 |  |
| BUS 461 Production and Operations Management |  |

**Total: 12****Note:** (1): ECN 301 and 305 may not both be taken for credit.**2b. Business Core Courses (33 credits)****Credits**

|  |   |
|--|---|
| BUS 317 Management Information Systems     | 3 |
| BUS 325 Principles of Finance              | 3 |
| BUS 335 Principles of Marketing            | 3 |
| BUS 345 International Business Environment | 3 |
| BUS 366 Organizational Behavior            | 3 |
| BUS 375 Business Law I                     | 3 |
| BUS 376 Business Law II                    | 3 |
| BUS 417 Systems Analysis and Design        | 3 |
| BUS 464 E-Commerce                         | 3 |
| BUS 475 Strategic Management               | 3 |

|   |          |
|---|----------|
| <b>AND one of the following four finance electives:</b> | <b>3</b> |
|---|----------|

|  |  |
|--|--|
| BUS 420 Short-term Financial Management              |  |
| BUS 421 Investment Analysis and Portfolio Management |  |
| BUS 422 Corporate Financial Policy                   |  |
| ECN 321 Money and Banking                            |  |

**Total: 33****Note:** BUS 475 Strategic Management must be taken at SUNY Brockport.**2c. Upper-level Accounting Courses (25 credits)****Credits**

|  |   |
|--|---|
| ACC 385 Intermediate Accounting I              | 3 |
| ACC 386 Intermediate Accounting II             | 3 |
| ACC 388 Cost Accounting                        | 3 |
| ACC 389 Accounting Profession Seminar          | 1 |
| ACC 485 Federal Income Tax I                   | 3 |
| ACC 486 Advanced Accounting                    | 3 |
| ACC 487 Auditing                               | 3 |
| ACC 488 Federal Income Tax II                  | 3 |
| ACC 489 Accounting for Not-for-Profit Entities | 3 |

**Total: 25****Note:** All 400-level accounting courses must be taken at SUNY Brockport.**2d. Business Electives and/or Business Internship (6 credits)****Credits**

|   |   |
|---|---|
| Any combination of elective business courses and/or business internship | 6 |
|---|---|

**Total: 6****2e. Computer Information Systems Courses (10 credits)****Credits**

|  |   |
|--|---|
| CSC 120 Introduction to Computer Science | 3 |
| CSC 203 Fundamentals of Computer Science | 4 |

|   |          |
|---|----------|
| <b>AND one of the following computer information systems courses:</b> | <b>3</b> |
|---|----------|

|   |  |
|---|--|
| CIS 419 Computer Networks and Internet Applications |  |
| CIS 422 Physical Design and Implementation of DBMS  |  |
| CIS 427 Project Management and Practice             |  |

**Total: 10**

**3. Other Requirements:** In addition to the major course work described above, students must meet all of SUNY Brockport's General Education requirements. Further, in order to meet the New York state requirements (after August 1, 2009) to sit for the CPA exam, accounting majors completing the 150 hour program must complete a minimum 60 credits of non-business, non-accounting liberal arts course work. Total liberal arts course work (non-business, non-accounting) cannot exceed 80 credits. Students need to work closely with their advisor to understand which of their courses count toward this required minimum 60 credits (maximum 80 credits). Because of the minimum 60-credit liberal arts requirement under CPA Exam requirements, accounting majors pursuing careers as CPAs are limited in the number of additional (elective) business or accounting courses that can be used toward the 150 credits required for the degree. Total course work in business and accounting combined cannot exceed 90 hours. It is very important for all students, including transfer students, pursuing careers as CPAs to work closely with their academic advisor to understand the limitations on the number of business and accounting courses that can be counted towards the 150-credit graduation requirement for the CPA exam.

## **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 and Economics 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) foreign language, (4) cross-cultural core and (5) foreign-experience requirements as specified below.

**1. 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.

|   | <b>Credits</b>   |
|---|------------------|
| ECN 201 Principles of Economics - Micro                 | 3                |
| ECN 202 Principles of Economics - Macro                 | 3                |
| ECN 204 Introduction to Statistics                      | 3                |
| ACC 281 Introduction to Financial Accounting            | 3                |
| MTH 2XX Calculus-level Math requirement (see (2) below) | 3                |
|   | <b>Total: 15</b> |

**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) 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 both 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.

**2. International Business Core Requirements (27 credits)**

|  | <b>Credits</b>   |
|--|------------------|
| BUS 317 Introduction to Management Information Systems | 3                |
| BUS 325 Principles of Finance                          | 3                |
| BUS 335 Principles of Marketing                        | 3                |
| BUS 345 International Business Environment             | 3                |
| BUS 433 International Marketing                        | 3                |
| BUS 445 International Financial Management             | 3                |
| BUS 462 Quality Management Systems                     | 3                |
| ECN 443 International Economics                        | 3                |
| ECN 453 International Business Seminar                 | 3                |
|  | <b>Total: 27</b> |

**Note:** CIS 106 is the prerequisite for BUS 317.

**3. Foreign Language (3 or more credits assumed)**

|   | <b>Credits</b> |
|---|----------------|
| One 212 level or higher course in a foreign or second language. | 3              |

**4. Cross-cultural Core (12 credits)**

|   | <b>Credits</b> |
|---|----------------|
| Four cross-cultural courses (see <i>Suggested Cross-cultural Courses</i> below) | 12             |

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.

**5. 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 higher 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 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. The department maintains an updated list of qualified courses in Hartwell Hall, Room 119.

- AAS 302 History of South Africa
- AAS 317 Prejudice, Personality and Culture (every semester)
- AAS 360 Africa Today (every semester) (A,D,I,W)
- AAS 404 Cultures of Sub-Saharan Africa
- AAS 408 Pan-Africanism (fall)
- AAS 420 Overseas Seminar in Africa (1-15 Cr.)
- AAS 460 Modern Africa (I)
- AAS 485 The Jamaica Seminars
- ANT 315 The Migration Experience (spring) (I,W)
- ANT 316 Food and Culture (I,W)
- ANT 321 Culture Change (spring) (I,W)
- ANT 330 World Poverty and Underdevelopment (fall) (C,J)
- ANT 332 China in Transition (every semester) (C,I)
- CMC 418 Intercultural Communication
- CRJ 465 Terrorism and the Criminal Justice System
- CRJ 451 International Criminal Justice Systems
- DCC 310 Human Heritage and Experience
- DCC 315 Society and Culture II
- ENL 353 The Bible and Modernism (C,I)
- ENL 357 Postmodern Culture
- ENL 366 Arabic Culture and the West (C,D,I)
- ENL 455 Sociolinguistics
- ENL 474 Caribbean Literature (W)
- ENL 495 Literature of the Holocaust (I,W)
- FCE 375 Latin-American Women (C,I,W)
- FCE 420 Multiculturalism in the US (spring) (I)
- FRN 325 France Today
- FRN 355 France Under the Fifth Republic
- HST 341 Middle East Crisis (spring) (C)
- HST 343 History of the Soviet Union (I)
- HST 361 History of Japan (fall) (C)
- HST 363 Islam (every semester) (C)
- HST 364 History of Britain (spring)
- HST 376 Modern Latin America
- HST 388 Traditional China (C)
- HST 389 Modern China (spring) (C)
- HST 421 America Since 1929 (spring)
- HST 424 United States and the World

|     |     |  |
|-----|-----|--|
| HST | 434 | Modern Caribbean History                       |
| HST | 438 | Women and Gender in Latin American History     |
| HST | 460 | Modern Africa (I)                              |
| HST | 467 | Modern South Asia (C)                          |
| HST | 487 | Asian Survey (C)                               |
| PLS | 304 | International Relations Simulations            |
| PLS | 305 | Politics of European Integration               |
| PLS | 333 | American Foreign Policy                        |
| PLS | 338 | Global Issues (every semester) (I,W)           |
| PLS | 340 | European Political System                      |
| PLS | 342 | Latin-American Politics                        |
| PLS | 343 | Canadian Politics and Society                  |
| PLS | 346 | Russian and Eastern European Politics          |
| PLS | 348 | Asian Politics                                 |
| PLS | 383 | Mid-East in World Politics                     |
| PLS | 410 | International Political Economy                |
| PLS | 444 | National Security                              |
| PLS | 470 | Nationalism                                    |
| PLS | 475 | Political Geography (C)                        |
| PSH | 437 | Psychology and Jewish Studies                  |
| REL | 315 | International Tourism (every semester) (D,I,W) |
| SOC | 306 | Development and Globalization (I)              |
| SOC | 317 | Prejudice, Personality and Culture             |
| SOC | 325 | Social Class, Status and Power                 |
| SOC | 464 | Gender and Social Change                       |
| SPN | 352 | Hispanic World Today (every semester)          |
| SPN | 353 | Literature and Cultures of Spain I (fall)      |
| SPN | 363 | Literature and Cultures of Spain II (spring)   |
| SWO | 321 | Human Diversity (every semester)               |
| WMS | 323 | History of European and American Women (W)     |
| WMS | 375 | Latin American Women (D,I,W)                   |
| WMS | 438 | Women and Gender in Latin American 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 Administration**

To declare the minor in business administration, students are required to have (1) a 3.0 GPA or higher over 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 but only extreme, extenuating circumstances will even be considered for such a waiver; students who do not meet these grade requirements should assume they will NOT be permitted to declare and complete the minor. 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 enrolled in the minor in business administration. The forms required to declare the minor are available in 119 Hartwell Hall.

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

**Notes:**

- (1) Students may substitute the ACC 281 and ACC 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, business administration, 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 or Accounting 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. The minor in economics is not open to students majoring in international business and economics.

**Minor in Finance**

All students pursuing the minor in finance 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 finance 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 SUNY Brockport courses used to satisfy requirements of the minor, must be at least 2.0. The minor in finance is not open to declared majors in accounting, business administration, or international business and economics. The minor in finance is excellent preparation for students who are planning to take the actuary exam but are not majoring in a business discipline. Students are required to have successfully completed (C- or higher) CSC 104 or CIS106 or possess equivalent word processing and spreadsheet skills.

| <b>Course Requirements</b>   | <b>Credits</b> |
|--|----------------|
| ACC 280 or ACC 281 Introductory Accounting   | 3              |
| ECN 201 Principles of Microeconomics   | 3              |
| ECN 204 Introduction to Statistics   | 3              |
| BUS 325 Principles of Finance  | 3              |
| BUS 421 Investment Analysis and Portfolio Management                                 | 3              |
| BUS 422 Corporate Financial Policy   | 3              |
| One additional finance elective chosen from BUS 420,<br>BUS 428, BUS 445, or ECN 425 | 3              |
| <b>Total:</b>  | <b>21</b>      |

**Note:** Minors should carefully check the catalog to see if they have completed the prerequisites for the electives that they choose.

**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.

**Note:** All programs are subject to change and new programs may be offered, pending approval from all of the relevant authorities, including the College Senate, the College president, SUNY System Administration, and the New York State Department of Education. Interested parties should seek up-to-date information from the home page of the Department of Business Administration and Economics at [www.brockport.edu/bus-econ/](http://www.brockport.edu/bus-econ/) or may contact the department office at **(585) 395-2623**.

#### ACCOUNTING COURSES

**ACC 280 Introduction to Accounting (B).** *Prerequisite:* MTH 121 or equivalent. Surveys aspects of financial and managerial accounting with an emphasis on analysis and interpretation of financial statements and the preparation and uses of management reports for decision-making. *Intended for majors outside the Department and does not meet the requirements for any majors offered by the Department.* 3 Cr. Every Semester.

**ACC 281 Introduction to Financial Accounting (B).** *Prerequisite:* MTH 121 or equivalent. Provides an introduction to generally accepted accounting principles used to classify, value, and record assets, liabilities, stockholder equity, revenues and expenses. Preparation, interpretation and analysis of financial statements are discussed. Also, the importance of accounting information for interested parties outside the enterprise is addressed. Ethical codes and professional conduct of accountants are examined. 3 Cr. Every Semester.

**ACC 282 Introduction to Managerial Accounting (B).** *Prerequisite:* ACC 281. Provides an introduction to accounting information used by business managers to make short- and long-term decisions. Topics include cost accumulation and product costing, cost/volume/profit analysis, budgeting, standard costing and variance analysis, job order and process costing, activity-based costing, and capital budgeting. 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. Topics include the role of the accountant in information systems, ethics issues, risks in information systems, ERP systems, e-commerce, business processes, internal control, documenting accounting information systems (task modeling) and REA model for data modeling. Computer software applications include Excel, Access, and a general ledger program with an extensive amount of software use required. 3 Cr. Every Semester.

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

**ACC 386 Intermediate Accounting II (B).** *Prerequisite:* ACC 385. Examines the theoretical, conceptual and procedural aspects of generally accepted accounting principles related to corporate bonds and notes, leases, pensions and stockholders' equity. Revenue recognition methods, accounting for income taxes, and preparation of the statement of cash flows are also examined. 3 Cr. Every Semester.

**ACC 388 Cost Accounting (B).** *Prerequisite:* ACC 282. Focuses on the internal accounting problems of 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 282, ACC 385 (may be taken concurrently). 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. Fall.

**ACC 485 Federal Income Tax I (B).** *Prerequisites:* ACC 385, ACC 283 and either MTH 201 or MTH 221. An introduction to the US Federal system of income taxation. Emphasis is on understanding conceptual basis of taxation and tax treatment of common transactions, including items of income, exclusion, deduction, and credit. Property transactions and tax research are introduced. In addition, the use of software to prepare tax returns is addressed. 3 Cr. Every Semester.

**ACC 486 Advanced Accounting (B).** *Prerequisites:* ACC 283, ACC 386 and either MTH 201 or MTH 221. Examines accounting and reporting for partnerships, branch operations, consolidated financial statements, and multi-national corporations. 3 Cr. Every Semester.

**ACC 487 Auditing (B).** *Prerequisites:* ACC 283, ACC 386 and either MTH 201 or MTH 221. Examines the theory, concepts, principles, and procedures under generally accepted auditing standards

for external audits by CPAs. Topics include evidence, internal control, audit risk, statistical sampling, tests of controls, and substantive tests. The AICPA Code of Conduct and legal liability are also discussed, with the emphasis on ethical conduct and responsibility of auditors. 3 Cr. Every Semester.

**ACC 488 Federal Income Tax II (B).** *Prerequisites:* ACC 283; ACC 485 and either MTH 201 or MTH 221. Examines the Federal income taxation of corporations, shareholders, partners and partnerships. Topics include tax effects of entity formation, operations, distributions and liquidations. Emphasizes factors in choosing a type of business entity. Estate and gift taxation are introduced. Tax software is used to prepare tax returns and to perform tax research. 3 Cr. Every Semester.

**ACC 489 Accounting for Not-for-Profit Entities (B).** *Prerequisites:* ACC 386 and either MTH 201 or MTH 221. Examines the unique accounting characteristics of governmental and not-for-profit entities. Course content includes basic coverage of funds and fund accounting, as well as theory and procedures from GASB statements, including implementation of GASB standard No. 34. Students are introduced to the basic accounting procedures related to various funds, legally required budgetary accounts, financial statement preparation, proper footnote disclosure, and other reporting issues. 3 Cr. Spring.

**ACC 498 Accounting Internship (A).** *Prerequisite:* ACC 283. 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, and (3) the high level of professional acumen required to be successful in accounting. Recommended for all accounting majors without accounting work experience. 1-6 Cr. Every Semester.

**ACC 499 Independent Study in Accounting (A).** *Prerequisites:* ACC 283 and ACC 385. 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.

#### BUSINESS ADMINISTRATION COURSES

**BUS 317 Introduction to Management Information Systems (A,T).** *Prerequisites:* CIS 106 and either ACC 280 or ACC 281. Explores the use of in-

formation systems in organizations. Examines how different types of information systems are used to enhance performance of organizations, management, and employees. Introduces the systems development process and the management of information resources, including data, hardware, software, infrastructures and personnel. Introduces and applies the key theories and frameworks in the discipline, such as systems theory and value chains. Develops an intermediate level of end-user computing skills and assumes introductory-level knowledge of MS Office applications. *3 Cr. Every Semester.*

**BUS 325 Principles of Finance (A).** *Prerequisites: ACC 280 or 281, ECN 201 and 202, ECN 204, MTH 121 or higher.* Provides a foundation in corporate financial decision-making. Covers the corporate environment, time value of money, risk and return, 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 ECN 201 or ECN 202). *3 Cr. Every Semester.*

**BUS 335 Principles of Marketing (A).** Examines the business function that identifies current unfilled needs and wants, defines and measures their magnitudes, determines which target markets the organization can best serve, and decides upon appropriate products, services, and programs to serve these markets. Topics include product development and test-marketing, product planning and new product introduction, and methods of product promotion and service marketing *3 Cr. Every Semester.*

**BUS 345 International Business Environment (A).** Analyzes 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).** Discusses the relationship of the management function with other functional areas, and provides an overview of the full span of managerial responsibilities in business organizations. Does not fulfill any requirement for any business administration major. Is a required course for business administration minors. *3 Cr. Every Semester.*

**BUS 366 Organizational Behavior (A).** *Prerequisites: ENL 308 and CIS 106.* Examines individual behavior in organizational settings. Emphasis is given to the coordinated efforts of managing diverse work forces into fully functional organizational entities, highlighting theories and practices that facilitate motivation, control, and success of the organization. Includes topics such as human motivation, leadership, group dynamics, communications, organiza-

tional development, organizational culture, cross-cultural and global issues. Open to majors and minors only in business administration and accounting. *3 Cr. Every Semester.*

**BUS 368 Management Skills (A).** *Prerequisites: ENL 308 and CIS 106.* This course seeks to develop skills that are key to success as a manager, with emphasis on applying interpersonal, leadership, time management, conflict resolution, communication, team and presentation skills. *3 Cr. Every Semester.*

**BUS 369 Management Topics Seminar (A).** *Prerequisites: BUS 366, ENL 308 and CIS 106, or instructor's permission, declared majors only.* Using business cases, contemporary examples and the business press, students explore topics pertinent to the management field. Projects and readings are both applied and analytical in content. *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, criminal law, torts, and contracts. *3 Cr. Every Semester.*

**BUS 376 Business Law II (A).** *Prerequisite: BUS 375 or instructor's permission.* Continues the concepts of BUS 375 with topics including but not limited to, sales, agency, business entities, securities regulations, secured transactions, bankruptcy, and negotiable instruments. *3 Cr. Every Semester.*

**BUS 378 Business, Government and Society (A).** *Prerequisites: Declared major or minor and BUS 375 and ENL 308.* Investigates the of market and nonmarket business environments to develop the student's ability to critically analyze commercial, social, and ethical situations from the perspectives of different organizational shareholders. Topics include globalization, public policy, government regulation, consumer rights, corporate social responsibility, the environment and employment rights. *3 Cr. Every Semester.*

**BUS 389 Business Careers Seminar (A).** Students should complete this seminar before their senior year. Helps students develop their own competitive profile and plan for post-graduation. Develops the students' understanding of the career resources available to them, career paths, and opportunities in business, and how to find and prepare for jobs and interviews. Internships and graduate school options are also discussed. Requires students to conform to a mandatory dress code of professional business attire. *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 organizations in-

cluding 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 CIS 304.* Provides an in-depth examination of the processes, methods, and tools used to develop information systems. *3 Cr. Spring.*

**BUS 418 Advanced Management Information Systems (A).** *Prerequisite: BUS 317 or CIS 304 and completion of ENL strongly advised.* 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. Fall.*

**BUS 420 Short-Term Financial Management (A).** *Prerequisite: BUS 325.* A CTP® 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 who successfully complete the course with a grade of "B" or better to be currently eligible to take the Certified Treasury Professional® (CTP®) exam and acquire the CTP® designation. *3 Cr. Fall.*

**BUS 421 Investment Analysis and Portfolio Management (A).** *Prerequisite: BUS 325.* 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.* Provides in-depth coverage of corporate financial analysis and policy stressing agency theory, valuation, market efficiency, capital budgeting under conditions of certainty and uncertainty, capital structure, bankruptcy, underwriting, and dividend policy. Extensive analysis of real-world data, case studies, and spreadsheet analysis. *3 Cr. Every Semester.*

**BUS 428 Seminar in Finance (A).** *Prerequisites: ECN 304 and either BUS 421 or BUS 422.* 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. *3 Cr.*

**BUS 431 Global Market Exporting (A).** Gives students hand-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 managing 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 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. Every Semester.*

**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 Marketing 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 435 and BUS 335. Provides an overview of promotional policies, the relationship between promotional policy and marketing process, and the promotional policy in the context of the behavioral sciences. Discusses how to evaluate and select the best form of communication for the potential customer. 3 Cr. Spring.

**BUS 438 Supply Chain Management (A).**

*Prerequisite:* BUS 335. Explores 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. Explores the marketing of goods and services to manufacturers, public entities, government agencies, and other private and public organizations for use in the production of goods and services. 3 Cr. Fall.

**BUS 441 Marketing Management (A).**

*Prerequisite:* BUS 335 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 mechanisms, exchange market operations, arbitrage and hedging, spot and forward exchange, long-term international capital movements, international financial institutions, accounting, and taxation. 3 Cr. Fall.

**BUS 461 Production and Operations Management (A).**

*Prerequisites:* ECN 204; CIS 106 and one of MTH 201, MTH 221 or MTH 245. 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:* BUS 317. Declared business major or minor only. For the prospective small business manager who needs the tools and techniques essential for 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. Fall.

**BUS 464 Electronic Commerce (A).**

*Prerequisites:* ENL 308 and BUS 317 or instructor's permission. Business majors must complete ENL 308 before enrolling. Explores issues, methods, and opportunities associated with electronic forms of business focusing on Web-based commerce. Topics include: business models, transaction processing, marketing issues, legal issues, security concepts and issues, hardware, software, technology, business planning, and management issues. Teaches students the various aspects of designing and running an Internet business. 3 Cr. Spring.

**BUS 465 Human Resource Management (A).**

*Prerequisites:* BUS 366 and ENL 308. Undertakes a broad survey of the human resources management issues faced by contemporary organizations. Topics include: 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).**

*Prerequisite:* BUS 375. It is recommended that students complete BUS 465 prior to taking this course. Examines the relationship between public policy and current human resource management practices. Places major emphasis on developing an 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. 3 Cr.

**BUS 468 Advanced Human Resource Topics (A).**

*Prerequisite:* BUS 465 or instructor's permission. Explores and further elaborates on key topics introduced in BUS 465. Topics include 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 resource management. *3 Cr. Spring.*

**BUS 475 Strategic Management (A).** *Prerequisites: BUS 325, BUS 335, BUS 345, BUS 366, ENL 308, declared business or accounting major, and senior status.* Capstone course that integrates material from earlier core courses and applies theories and models of strategic management to analyze real-world data, solve complex business problems, and analyze business case studies. Group-based research, analysis, and presentation are an integral part of this course. *3 Cr. Every Semester.*

**BUS 490 Senior Thesis Research (A).** *Prerequisites: Minimum GPA 3.25, declared business major, completion of 18 upper-division business credits.* 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: 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: Junior or senior status, declared major in business administration (any concentration) or major in international business and economics. Students must have a minimum 2.75 GPA in the major and a minimum overall 2.5 GPA. Internship not open to intents to major.* Open to declared majors in business administration or international business and economics with junior or senior standing. Students must have a 2.75 GPA in the major and an overall 2.5 GPA. This internship is not open to "Intents to Major." Provides supervised experience in a business environment. Required application forms are available through the department's internship coordinator or on the Web at: [http://www.brockport.edu/bus-econ/career/students/interns\\_overview.htm](http://www.brockport.edu/bus-econ/career/students/interns_overview.htm) *1-6 Cr. By Arrangement.*

**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).** 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. ECN 100 does not meet the requirements for any major in the department.

**ECN 201 Principles of Economics - Micro (A).** *Prerequisite: MTH 121 or equivalent.* Covers issues of scarcity and choice; determination of prices, demand and supply, production, cost, behavior of the firm, and the role of government. *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).** *Prerequisite: MTH 121 or equivalent.* 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.*

**ECN 301 Intermediate Microeconomics (A).** *Prerequisites: ECN 201, ECN 202 and MTH 121.* 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: ECN 201, ECN 202 and MTH 121.* Covers the basic tools of macroeconomic analysis, including the determination of national income, employment and price levels, an analysis of macroeconomic stabilization policies, and economic growth. *3 Cr. Every Semester.*

**ECN 304 Intermediate Statistics (A).** *Prerequisites: ECN 204 and MTH 121.* 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: ECN 201, ECN 202 and MTH 121.* Provides an introduction to the economic analysis of business

decisions. Includes decision theory, demand theory, and the economic theory of production and costs. *3 Cr. Spring.*

**ECN 321 Money and Banking (A).** *Prerequisites: ECN 201 and ECN 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. Fall.*

**ECN 333 Health Economics (A).** *Prerequisite: ECN 201.* 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.*

**ECN 361 Labor Market Analysis (A).** *Prerequisites: ECN 100 or ECN 201.* Focuses on the issues and the analysis of labor markets. Includes wage determination and income distribution, skill structure of the work force, unionism and unemployment. *3 Cr. Fall.*

**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. Spring.*

**ECN 443 International Economics (A).** *Prerequisites: ECN 201 and ECN 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 ECN 202.* Addresses contemporary and emerging issues in international business, including strategic issues. *3 Cr. Fall.*

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

**ECN 485 Economic Research (A).** *Prerequisites: ECN 304; ECN 302 and either ECN 305 or ECN 301.* 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).** 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 498 Economics Internship (A).** Provides supervised experience in a work environment, with an opportunity to apply concepts learned in economics course work. 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.*

## DEPARTMENT OF CHEMISTRY

**230 Smith Hall  
(585) 395-2182**

*Chairperson and Professor:* Thomas W. Kallen; *Professors:* K. Thomas Finley, J. Emory Morris; *Associate Professors:* Mark P. Heitz, Kenneth D. Schlecht; *Assistant Professors:* Markus M. Hoffman, Margaret E. Logan.

### 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.
3. Government: laboratories, regulatory agencies and legislative staffs.
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:**

|   | <b>Credits</b> |
|---|----------------|
| CHM 205–206 College Chemistry I, II           | 8              |
| CHM 301 Chemical Safety                       | 1              |
| CHM 303 Quantitative Analysis                 | 4              |
| CHM 305–306 Organic Chemistry I, II           | 8              |
| CHM 400–401 Seminar I, II                     | 2              |
| CHM 405–406 Physical Chemistry I, II          | 6              |
| CHM 408–409 Physical Methods Laboratory I, II | 2              |
| <sup>1</sup> Elective(s)                      | 3              |
| <b>Total Credits in Chemistry: 34</b>         |                |
| 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:

|   | <b>Credits</b> |
|---|----------------|
| CHM 341 Advanced Organic Chemistry Laboratory I | 1              |
| CHM 414 Instrumental Methods II                 | 3              |
| CHM 416 Instrumental Laboratory                 | 1              |
| CHM 431 Inorganic Chemistry                     | 3              |
| CHM 432 Inorganic Chemistry Laboratory          | 1              |

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

<sup>2</sup>Three credits of electives chosen from the 300/400-level in chemistry, excluding CHM 457 and 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.

|                                    |                                |           |
|------------------------------------|--------------------------------|-----------|
| CHM 467                            | Biochemistry I                 | 3         |
| CHM 342                            | Advanced Organic Laboratory II |           |
| CHM 470                            | Biochemistry Laboratory        | 1         |
|                                    | <sup>2</sup> Electives         | 3         |
| <b>Total Credits in Chemistry:</b> |                                | <b>47</b> |

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

**OR****Total Credits in Math and Physics: 17****Major in Chemistry: Biochemistry Track** **Credits**

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

|                                    |                         |           |
|------------------------------------|-------------------------|-----------|
| CHM 467–468                        | Biochemistry I, II      | 6         |
| CHM 470                            | Biochemistry Laboratory | 1         |
| <b>Total Credits in Chemistry:</b> |                         | <b>38</b> |

|                                  |                            |           |
|----------------------------------|----------------------------|-----------|
| BIO 201                          | Biology I                  | 4         |
| BIO 202                          | Biology II                 | 4         |
| BIO 301                          | Cell Biology (spring only) | 4         |
| BIO 302                          | Genetics (fall only)       | 4         |
| BIO 415                          | Molecular Biology          | 3         |
| <b>Total Credits in Biology:</b> |                            | <b>19</b> |

|   |                       |           |
|---|-----------------------|-----------|
| MTH 201                                   | Calculus I            | 3         |
| MTH 202                                   | Calculus II           | 3         |
| MTH 203                                   | Calculus III          | 3         |
| PHS 201–202                               | College Physics I, II | 8         |
| <b>Total Credits in Math and Physics:</b> |                       | <b>17</b> |

**Minor in Chemistry**

The student must complete CHM 205–206 and a minimum of 10 additional credits of chemistry chosen from courses having CHM 206 as a prerequisite. Normally 10 credits chosen from CHM 301, 303, 305–306, 405–406, and 408–409 are included in this program. Contemporary Issues courses (I) are excluded.

**CHEMISTRY COURSES****CHM 111 Introduction to Chemistry (A).**

*Prerequisite:* MTH 110 or waiver for MTH 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 Chemistry and Scientists (A,L,W).**

*Course fee. Prerequisites or corequisites:* MTH 112 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).**

*Prerequisites: MTH 112 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; finger prints; 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 I (A,L).**

*Course fee. Prerequisite: MTH 112 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).**

*Course fee. 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).**

*Course fee. Prerequisite: MTH 112 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.* The safe and responsible practice of the chemical sciences, including regulatory obligations, information sources, record keeping, and responses to emergency situations. Describes hazards in chemical labs and prudent measures to minimize risks: fire; reactivity; health effects; electrical, mechanical, cryogen and laser hazards; and storage and responsible disposal of chemicals. One hour lecture per week. *1 Cr. Fall.*

**CHM 303 Analytical Chemistry I (A).**

*Course fee. Prerequisite: CHM 206.* Introduction 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).**

*Course fee. Prerequisite: CHM 206.* The chemistry of carbon-containing compounds: structure and bonding; nomenclature; functional groups; properties; acids and bases; isomers and stereochemistry; kinetics and thermodynamics; energy diagrams, reaction mechanisms, and their underlying concepts; reactions of hydrocarbons; substitution and elimination reactions of organic halides and related compounds; spectroscopy; and separations. Three hours of lecture and four hours of laboratory per week. *4 Cr. Fall.*

**CHM 306 Organic Chemistry II (A).**

*Prerequisite: CHM 305.* Continuation of CHM 305: aromaticity; the chemical reactions of aromatic compounds; the nomenclature, structure, and chemistry of carbonyl compounds; oxidation and reduction reactions; carbohydrate chemistry; amino acids, peptides and proteins; polymers; spectroscopy; multistep synthesis; and the chemical literature. Three hours of lecture and four hours of laboratory per week. *4 Cr. Spring.*

**CHM 341 Advanced Organic Laboratory I (A).**

*Course fee. Prerequisite: CHM 305.* Selected advanced reactions and techniques, which may include: vacuum and fractional distillation, catalytic hydrogenation, organometallic reagents, phase transfer reagents, and other advanced experiments. Four hours of laboratory per week. *1 Cr. Spring.*

**CHM 342 Advanced Organic Laboratory II (A).**

*Course fee. Prerequisite: CHM 341.* Continuation of advanced techniques begun in CHM 341. Four hours of laboratory 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,I,W).** *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 near future. 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).** *Prerequisites:* Junior or senior status, a minimum of 2.00 GPA overall, 2.5 GPA in chemistry. To be defined in consultation with the professor-sponsor prior to registration. 1-6 Cr.

**CHM 400 Seminar I (A).** *Cross-listed as PHS 400. 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).** *Cross-listed as PHS 401. 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, PHS 202 and MTH 203. The principles of quantum mechanics and their application to the proper description of chemical systems, spectroscopic phenomena, and chemical bonding. Three hours of lecture per week. 3 Cr. Fall.

**CHM 406 Physical Chemistry II (A).** *Prerequisite:* CHM 405. Kinetic-molecular theory of gases; kinetics; thermodynamics, with an introduction to statistical thermodynamics; and applications of thermodynamics to phase equilibria and chemical equilibria. Three hours of lecture per week. 3 Cr. Spring.

**CHM 408 Physical Methods Laboratory I (A).** *Cross-listed as PHS 408. 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, produce written scientific reports, and make oral presentations describing and analyzing the methods and their results. Three hours lab per week. 1 Cr. Fall.

**CHM 409 Physical Methods Laboratory II (A).** *Cross-listed as PHS 409. Prerequisite:* CHM 408. Requires students to conduct experiments using modern physical measurement techniques, produce written scientific reports, and make oral presentations describing and analyzing the methods and their results. 1 Cr. Spring.

**CHM 413 Instrumental Methods I: Spectral Interpretation (A).** *Prerequisite:* CHM 305. 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. Three hours of lecture/discussion per week. 3 Cr.

**CHM 414 Instrumental Methods II: Quantitative Spectrometry and Electro-analytical Techniques (A).** *Prerequisites:* CHM 303 and CHM 406. Theory and application to quantitative analyte determination of optical, spectroscopic, electro-analytical, and chromatographic instrumental techniques. Optimization of instrumental and analytical parameters and strategies for data acquisition are also discussed. Three hours of lecture per week. 3 Cr. Fall.

**CHM 416 Instrumental Methods Laboratory (A).** *Course fee. Prerequisite or corequisite:* CHM 414. The use of various electro-analytical, spectroscopic, and chromatographic instruments to perform chemical analyses. Emphasis is on optimizing instrumental selectivity, sensitivity and resolution. Organization and analysis of data are also discussed. Four hours of laboratory per week. 1 Cr. Fall.

**CHM 417 Computational Chemistry (A).** *Cross-listed as CPS 417. Prerequisites:* CHM 206, MTH 203, CPS 201 and PHS 201. Offered by the Department of Computational Science. 3 Cr.

**CHM 431 Inorganic Chemistry (A).** *Prerequisite or corequisite:* CHM 405. 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).** *Course fee. Prerequisites:* CHM 405 and CHM 408. 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).** *Course fee. Cross-listed as GEL 457. Prerequisites: CHM 205, CHM 206 and GEL 101.* 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.*

**CHM 467 Biochemistry I (A).** *Cross-listed as BIO 467. Prerequisite: CHM 306; a college course in biology is strongly recommended.* 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).** *Cross-listed as BIO 468. Prerequisite: CHM 467 or BIO 467.* 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. Three hours of lecture/discussion per week. *3 Cr. Spring.*

**CHM 470 Biochemistry Laboratory (A).** *Cross-listed as BIO 470. Course fee. Prerequisite or corequisite: CHM 467 or BIO 467.* 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 Laboratory Pedagogy (B).** *Prerequisites: CHM 301 or NAS 468, CHM 303 and CHM 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.*

## DEPARTMENT OF COMMUNICATION

**227 Holmes Hall  
(585) 395-2511**

*Chairperson and Associate Professor:* Joseph Chesebro; *Professor:* Floyd D. Anderson; *Associate Professors:* Virginia Bachelier, Donna Kowal, Katherine Madden, Carvin Eison; *Assistant Professors:* Matthew Althouse, Monica Brasted, Michael Cavanagh, Hsiang-Ann Liao, Karen Olson, Kevin Sager.

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 18-credit specialties, a 18-credit common core and **either a minor or a second major in a discipline other than communication, broadcasting or journalism.**

### 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 18-credit communication studies core, must select *one* of the two *18-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 (18 credits required; 6 credits must be in upper-division courses)

| A. Required Course:                 | Credits |
|-------------------------------------|---------|
| CMC 201 Public Speaking             | 3       |
| CMC 202 Principles of Communication | 3       |

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

|   | Credits |
|---|---------|
| CMC 209 Speech Composition and Presentation | 3       |
| CMC 312 Argumentation and Debate            | 3       |
| CMC 317 Interviewing                        | 3       |
| CMC 319 Propaganda and Persuasion           | 3       |

### 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 (18 credits required; 15 credits must be in upper-division courses)

#### A. Communication and Persuasion Specialty

| Required Courses (9 credits):  | Credits |
|--|---------|
| One of the following:  |         |
| CMC 210 Communication Revolutions                                      | 3       |
| CMC 211 Protest and Public Opinion                                     | 3       |
| CMC 219 Advertising, Mass Persuasion and the Consumer                  | 3       |
| <b>AND</b>   |         |
| CMC 411 Rhetorical Criticism   | 3       |
| CMC 492 Theories of Rhetoric   | 3       |
| (completion of CMC 411 highly recommended before enrolling in CMC 492) |         |

Elective courses selected from the following (9 credits):

|   |   |
|---|---|
| CMC 373 Critical Studies in Mass Communication    | 3 |
| CMC 410 Speakers, Campaigns, and Movements        | 3 |
| CMC 417 Political Rhetoric in the Information Age | 3 |
| CMC 419 Freedom of Expression                     | 3 |
| CMC 463 Media and Society                         | 3 |
| CMC 467 Mass Communication Theory and Research    | 3 |

### **B. Interpersonal and Organizational Communication Specialty**

| <b>Required Courses (9 credits):</b> | <b>Credits</b> |
|--------------------------------------|----------------|
| CMC 273 Interpersonal Communication  | 3              |
| CMC 473 Theories of Communication    | 3              |
| CMC 477 Organizational Communication | 3              |

| <b>Elective Courses selected from the following (9 credits):</b>   | <b>Credits</b> |
|--|----------------|
| CMC 316 Interpersonal Communication in Business and the Professions<br>(completion of CMC 316 highly recommended before enrolling<br>in CMC 477) | 3              |
| CMC 413 Nonverbal Communication  | 3              |
| CMC 415 Public Communication in Administration, Business and<br>the Professions  | 3              |
| CMC 418 Intercultural Communication  | 3              |
| CMC 472 Group Leadership   | 3              |
| CMC 475 Communication 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 201 Public Speaking, CMC 202 Principles of Communication, and 12 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* three 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.

| <b>I. Liberal Arts Core (15 credits):</b>      | <b>Credits</b> |
|--|----------------|
| 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

| <b>Required Courses (9 credits):</b> | <b>Credits</b> |
|--------------------------------------|----------------|
| 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):

|  | <b>Credits</b> |
|--|----------------|
| CMC 312 Argumentation and Debate               | 3              |
| CMC 319 Propaganda and Persuasion              | 3              |
| CMC 324 Advanced Media Writing                 | 3              |
| CMC 327 Publishing and Web Design              | 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              |
| 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*, the following courses, 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 Credits

#### I. Journalism/Mass Communication Core (27 credits):

|   |   |
|---|---|
| CMC 202 Principles of Communication                           | 3 |
| CMC 210 The Communication Revolutions in Western Civilization | 3 |
| <b>EITHER</b> CMC 224 Newswriting <b>OR</b>                   | 3 |
| CMC 243 Radio and Television Writing                          | 3 |
| 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 |
| <b>AND two of the following:</b>                              |   |
| 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)

|   | Credits |
|---|---------|
| CMC 322 Editorial Methods and Problems            | 3       |
| CMC 325 Specialized Writing                       | 3       |
| CMC 327 Publication and Web Design                | 3       |
| CMC 332 Public Relations Principles and Practices | 3       |
| CMC 334 Public Relations Methods and Problems     | 3       |
| CMC 366 Broadcast Journalism                      | 3       |
| CMC 432 Public Relations Campaigns                | 3       |
| CMC 466 Advanced Broadcast Journalism             | 3       |
| CSC 105 Internet and Web Publishing               | 3       |

#### 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 201 Public Speaking (A).** A course in the development of effective informational, persuasive, and special occasion speaking. Attention given to analysis of audience, occasion, speech composition, oral delivery, and development of critical listening 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).** *Prerequisite: CMC 201.* 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 The Communication Revolutions (A,H).** 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,D,H,W).** Examines rhetorical transactions of group conflict; persuasive use of symbols; effects of mass media; and the process of theory-building in rhetorical studies. *3 Cr. Every Semester.*

**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. Every Semester.*

**CMC 224 Newswriting and Reporting (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 (A).** Provides an introduction to radio and television broadcasting. Studies basic principles and historical, economic and technological aspects of broadcasting and cable. Requires readings in fundamental theory and current practices. *3 Cr. Every Semester.*

**CMC 243 Radio and Television Writing (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. *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 interpersonal encounters. Acquaints students with the essentials of communication transactions in experiential learning opportunities that lead to effective skills; intimate, inter-gender, families; professional and intercultural relationships. *3 Cr. Every Semester.*

**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. Every Semester.*

**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. Every Semester.*

**CMC 321 Media Reporting and Research (A).** *Prerequisite: either CMC 224 or CMC 243.* An advanced media writing course covering and providing extended practice in essential skills of reporting and writing for print, broadcast and online news media, and writing for public relations and advertising. Emphasizes use of online sources and databases in gathering and reporting information. *3 Cr. Spring.*

**CMC 322 Editorial Methods and Practices (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.*

**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.*

**CMC 325 Feature Writing (A).** *Prerequisite: CMC 224.* 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. Every Semester.*

**CMC 327 Publication and Web Design (A).** *Prerequisite: either CMC 224 or CMC 243.* 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. Fall.*

**CMC 332 Public Relations Principles and Practices (A).** *Prerequisite: CMC 224.* Covers the principles, practices, media and methods of public relations and information. Emphasizes public relations functions, communication and publicity techniques.

Analyzes relations with publics such as the press, employees, stockholders, and consumers. *3 Cr. Spring.*

**CMC 334 Public Relations Methods and Cases (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. Fall.*

**CMC 343 Broadcast Announcing (B).** *Course fee. 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. Every Semester.*

**CMC 346 Radio Production (B).** *Course fee. Corequisite: either CMC 243 or CMC 343 (may be taken concurrently).* 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).** *Course fee. Prerequisite: CMC 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. Every Semester.*

**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. Spring.*

**CMC 358 Engineering Field Production (B).** *Course fee. Prerequisite: 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. Fall.*

**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. *1-12 Cr. Every Semester.*

**CMC 366 Broadcast Journalism (B).** *Course fee. Prerequisite: either CMC 224 or CMC 243.* Covers current practices and issues in radio-television 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. Fall.*

**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. Fall.*

**CMC 399 Independent Study in Communication (A).** 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. By Arrangement.*

**CMC 410 Speakers, Campaigns and Movements (A,D,W).** 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. Spring.*

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

**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. Spring.*

**CMC 415 Public Communication in Administration, Business and Professions (A).** *Prerequisite: either CMC 316 or CMC 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. Every Semester.*

**CMC 417 Political Rhetoric (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. Fall.*

**CMC 418 Intercultural 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. Spring.*

**CMC 419 Problems in Freedom of Speech (A,D,I,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 non-verbal 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. Spring.*

**CMC 432 Public Relations Campaigns (A).** *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. Spring.*

**CMC 438 History of American Journalism (A).** *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 (A).** *Course fee. Prerequisite: CMC 346.* Covers advanced principles and practices of radio productions while providing practical experience. Includes assigned projects, studio work, and digital production. *3 Cr. Spring.*

**CMC 446 Advanced Television Production (B).** *Course fee. 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. Spring.*

**CMC 463 Mass Communication and Society (A).** *Prerequisite: CMC 210.* 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. Spring.*

**CMC 466 Advanced Broadcast Journalism (B).** *Course fee. 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. Spring.

**CMC 467 Theories of Mass Communication (A).** *Prerequisites: CMC 202 and one of CMC 210, CMC 219 or CMC 242.* Examines and critiques the theoretical and research literature describing and explaining mass communication purposes, processes, messages, media, audiences, settings and effects at the individual, group 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 Mass Communication Law and Ethics (A).** 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.

**CMC 472 Group Leadership (A).** 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. Spring.

**CMC 473 Theories of Communication (A).** *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. Every Semester.

**CMC 475 Communication Internship (B).** *Prerequisite: 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 during the semester preceding the internship experience. 3 Cr. Every Semester.

**CMC 477 Organizational Communication (A).** *Prerequisite: either CMC 273 or CMC 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. Every Semester.

**CMC 479 Conflict Management (A).** 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).** *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 Studies (A).** An umbrella course enabling 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 Communication department 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. Fall.

**CMC 493 Contemporary Journalism Issues and Problems (A).** *Prerequisite: CMC 210, and junior and 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. 3 Cr. Every Semester.

**CMC 495 Senior Honors in Radio-TV Production (B).** *Course fee. Prerequisite: 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).** *Prerequisite: 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. Every Semester.

**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. By Arrangement.

## COMMUNICATION 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:

| <b>Broadcasting</b> | <b>Meteorology</b> | <b>Journalism</b> |
|---------------------|--------------------|-------------------|
| CMC 343             | ESC 211            | CMC 224           |
| CMC 346             | ESC 311            | CMC 243           |
| CMC 348             | ESC 312            | CMC 325           |

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

**129 Smith Hall**

**(585) 395-2021, [www.brockport.edu/cps/](http://www.brockport.edu/cps/)**

*Professor/Chair:* Osman Yasar; *Associate Professor:* Robert E. Tuzun; *Assistant Professor:* Leigh J. Little.

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 goal of the computational science program is to enable students to perform computational modeling in problems of technological and societal relevance. To this end, students learn a core set of skills in mathematics, computer programming, visualization, and simulation/modeling. Students may then apply these skills to application areas of interest to them.

Nearly all areas of science and engineering now use computers for modeling and problem solving. The aerospace industry uses this approach to design safe and economical aircraft. The automobile industry uses similar techniques to design better engines and safer vehicles. Computational technology is used in the medical and pharmaceutical industries to develop new drugs, process medical records, and assist in medical procedures. Meteorologists use computational techniques to predict the weather and long-term climate changes. Ecologists and biologists use computer models to study the environment, population dynamics, and the influence of pollutants on the body, the air and the ocean. The genetic blueprint of human beings is about to be mapped out in its entirety through computer modeling. Economists use computers to predict future behavior of many financial systems, including the stock market. Computer modeling enables the study and performance testing of systems before they are put into production. This approach 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. The program is flexible so as to allow students to follow their par-

ticular 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 computational science 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.

| <b>(a) Required Courses</b>  |                                       | <b>Credits</b> |
|--|---------------------------------------|----------------|
| MTH 203  | Calculus III                          | 3              |
| MTH 243  | Elementary Statistics                 | 3              |
| MTH 424  | Linear Algebra                        | 3              |
| CSC 203  | Fundamentals of Computer Science I    | 4              |
| CPS 201  | Computational Tools I                 | 3              |
| CPS 202  | Computational Tools II                | 3              |
| CPS 303  | High Performance Computing            | 3              |
| CPS 304  | Simulation and Modeling               | 3              |
| CPS 404  | Applied and Computational Mathematics | 3              |
| <b>(b) Elective Courses</b>  |                                       |                |
| 200-level and higher non-CPS courses from an area of application chosen under advisement |                                       | 6              |
| Upper-division elective courses  |                                       | 12             |
| <b>Total credits (including electives)</b>   |                                       | <b>46</b>      |

### (c) 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)

### Minor in Computational Science

| <b>(a) Required Courses</b>   |                            | <b>Credits</b> |
|---|----------------------------|----------------|
| CPS 201   | Computational Tools I      | 3              |
| CPS 202   | Computational Tools II     | 3              |
| CPS 303   | High Performance Computing | 3              |
| CPS 304   | Simulation and Modeling    | 3              |
| <b>(b) Elective Courses</b>   |                            |                |
| 200-level and higher courses in math and sciences chosen under advisement |                            | 8              |
| <b>Total Credits (including electives)</b>                                |                            | <b>20</b>      |

### (c) Prerequisites:

- Calculus III (MTH 203—3 credits)

### Combined BS/MS Program in Computational Science

The combined BS/MS degree is designed for high-parameter students wishing to accelerate the pace of their studies and to receive bachelor's and master's degrees in computational science within five years. To be considered for entry into this program requires a GPA of at least 3.25, a written application, and interviews with the departmental undergraduate and graduate directors. In addition to the required courses listed above, the combined program requires undergraduate electives, duplicate requirements (simultaneously satisfying undergraduate elective and graduate core requirements), research experience, and graduate electives.

| <b>(a) Elective Courses</b>  | <b>Credits</b> |
|--|----------------|
| 200-level and higher non-CPS courses from an area of application chosen under advisement | 6              |
| <b>(b) Duplicate Requirements</b>  |                |
| CPS 533      Scientific Visualization  | 3              |
| CPS 602      Advanced Software Tools   | 3              |
| CPS 604      Computational Methods in the Physical Sciences                              | 3              |
| CPS 644      Supercomputing and Applications   | 3              |
| <b>(c) Research Experience</b>   |                |
| CPS 698      Graduate Seminar  | 1              |
| CPS 699*     Independent Study   | 3              |
| CPS 710      Thesis  | 3              |
| * 3 credits of CPS 699 are required, but up to 9 total may be taken                      |                |
| <b>(d) Elective Courses</b> (chosen through advisement)                                  |                |
| Four 600-level or higher graduate courses  | 12             |

**Note:** Information on graduate courses and electives may be found in the *SUNY Brockport Graduate Studies 2005-2007 Catalog*.

#### COMPUTATIONAL SCIENCE COURSES

##### **CPS 101 Introduction to Computation (A,N).**

*Prerequisites:* *MTH 121* or instructor's approval. 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. Topics include: (1) some basic techniques used in computational modeling (linear regression for data-fitting, determination of areas and volumes, rate of change, and use of graphical calculator), (2) essentials of programming in FORTRAN 90; and (3) essentials of the UNIX operating system (basic commands, editors, file manipulation). *3 Cr. Fall.*

**CPS 201 Computational Tools I (A).** *Prerequisites:* *CSC 120* or *CPS 101*. An introduction to fundamental concepts of computational science using the Fortran 90 programming language, and the clear and concise written presentation of scientific results. Topics include: the Fortran 90 language, program construction and debugging, consequences of finite precision arithmetic, basic machine constants, and modeling of simple physical situations. May also include other modeling tools such as Stella, Agent Sheets, and Project Interactivate. Extensive programming required. *3 Cr. Fall.*

**CPS 202 Computational Tools II (A).** *Prerequisite:* *CPS 201*. A continuation of CPS 201. Emphasizes commonly encountered scientific programming libraries (BLAS, LAPACK, ATLAS). Model problems in numerical linear algebra are heavily utilized. Topics include: advanced topics in Fortran 90 Programming (data structures, overloaded functions, dynamic

memory allocation), programming in MATLAB, use of the UNIX operating system, use of the BLAS, LAPACK and ATLAS libraries, optimization of programs (by hand and via compiler optimization), and technical writing. Extensive programming in Fortran 90 and MATLAB required. *3 Cr. Spring.*

##### **CPS 300 Internet and Technology Ethics (A,I).**

The Internet has rapidly become a primary source of information, communication and entertainment for society. However, the rapid expansion has resulted in numerous issues that can adversely affect all Internet users. More importantly, new regulations are being passed that can expose users to significant legal risks. Fundamental legal principles that affect all users of the Internet will be discussed and analyzed. *3 Cr.*

##### **CPS 301 Issues in Criminal and Forensic Computing (A,I).**

A discussion of issues related to the use of computers in the criminal justice system. Discussions of growing capabilities in and ramifications of such areas as forensic computing, criminal profiling, fingerprint identification, video image processing, and simulation of crime scenes. In addition, discussions of emerging and future trends in the use of computers as a crime fighting tool. *3 Cr.*

##### **CPS 302 Society, Science and Technology (A,I).**

Discusses ways society and science have affected each other. Introduces a historical perspective of this relation for the past several decades, including the contemporary society. Identifies trends and changes

within science and technology in relation to the larger society. Students will attend lectures, discuss issues, and write essays. *3 Cr.*

**CPS 303 High Performance Computing (A).** *Prerequisite: CPS 202.* An introduction in applied parallel computing, using the Message Passing Interface (MPI) standard for parallel communication. Topics include: parallel architectures, problem decomposition, extracting parallelism from problems, benchmarking and performance of parallel programs, applications to the sciences, and technical writing. Extensive programming in Fortran 90 and/or C/C++ required. *3 Cr. Fall.*

**CPS 304 Simulation and Modeling (A).** *Prerequisites: CPS 202 and MTH 203; and either MTH 243 or MTH 346.* An introduction to stochastic and deterministic methods used to simulate systems of interest in a variety of applications, with emphasis on problem set-up and analysis and programming methods. Part I: discrete event simulation and statistical analysis of results. Part II: other examples of stochastic simulations such as the spread of forest fires. Part III: deterministic methods for particle simulations, with examples from astronomical and molecular simulation. In addition, a brief discussion of the simulation of continuous media. Extensive programming required. *3 Cr. Spring.*

**CPS 404 Applied and Computational Mathematics (A).** *Prerequisites: CPS 304 and MTH 203; and either MTH 243 or MTH 346.* A survey of scientific computing methods, emphasizing programming methods, interpretation of numerical results, and checks for numerical sensibility and self-consistency. The course is divided into several modules, including: (1) representation of floating point data, truncation and rounding error, and basic considerations for accurate numerical computation; (2) iterative numerical methods; (3) numerical differentiation and integration; (4) numerical interpolation; (5) random

number generation; (6) the Fast Fourier Transform; and (7) numerical solution of ordinary differential equations. Extensive programming required. *3 Cr.*

**CPS 417 Introduction to Computational Chemistry (A).** *Cross-listed as CHM 417.* An introduction to classical and quantum simulation methods as applied to chemistry-related problems and computational chemistry software packages. Part I: introductory material, potential energy surfaces, vibrational and electronic properties of molecules, and capabilities/limitations of computational chemistry. Part II: classical molecular simulation methods, molecular dynamics, molecular mechanics, Monte Carlo calculations, normal coordinate analysis, computer "measurement" of materials properties. Part III: the Schrodinger equation, common electronic structure methods, basic sets, geometric optimization, and molecular properties. *3 Cr.*

**NAS 401 Computational Methods for Teachers I (A).** *Prerequisite: Instructor's permission.* Enables teachers and teacher candidates in mathematical, physical, life, and earth sciences to learn computational tools, advanced graphing calculators, laptop computers, CD- and Web-based tools. Involves computational science as a process in solving real-world problems in sciences. Introduces technology tools (such as graphing calculators), math modeling tools (such as Excel, STELLA, and Geometer's Sketchpad), agent-based modeling tools (such as AGENTSHEETS), science modeling tools (such as Interactive Physics). Includes a section on NY State K-12 standards in math, science and technology. *3 Cr.*

## DEPARTMENT OF COMPUTER SCIENCE

### 208 Faculty Office Building

(585) 395-2146

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[www.brockport.edu/cs](http://www.brockport.edu/cs)

*Chair and Professor:* Kadathur B. Lakshmanan; *Professors:* Kulathur S. Rajasethupathy, Thambrahalli M. Rao; *Associate Professors:* Joan M. Lucas, Sandeep R. Mitra, Anthony Scime; *Assistant Professors:* Vishal Anand, Wan Huang, Alexander R. Yakhnis; *Lecturer:* 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, e-commerce, computer architecture, systems programming, computer security, 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; 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)

#### Credits

|         |   |   |
|---------|---|---|
| CSC 203 | Fundamentals of Computer Science I                      | 4 |
| CSC 205 | Fundamentals of Computer Science II                     | 4 |
| CSC 303 | Digital Logic and Computer Design                       | 3 |
| CSC 311 | Computer Organization and Assembly Language Programming | 4 |
| CSC 401 | Theory of Programming Languages                         | 3 |
| CSC 406 | Algorithms and Data Structures                          | 4 |
| CSC 411 | Computer Architecture                                   | 3 |
| CSC 412 | Operating Systems                                       | 3 |

|         |                       |   |
|---------|-----------------------|---|
| CSC 427 | Software Engineering  | 3 |
| CSC 483 | Theory of Computation | 3 |
| CSC 486 | Junior/Senior Seminar | 3 |

**B. Elective Courses (9 credits)**

|   |   |
|---|---|
| 300/400-level CSC courses selected under advisement<br>Restrictions apply. See notes below. | 9 |
|---|---|

**C. Mathematics Corequisites (9 credits)**

|  |                                    |   |
|--|------------------------------------|---|
| MTH 202                                    | Calculus II*                       | 3 |
| MTH 346                                    | Probability and Statistics I       | 3 |
| MTH 481                                    | Discrete Mathematics II*           | 3 |
| *Prerequisites for MTH 202 and MTH 481 are |                                    |   |
| MTH 201                                    | Calculus I (3 credits)             |   |
| MTH 281                                    | Discrete Mathematics I (3 credits) |   |

**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.

**Total: 67****Credits including prerequisites CSC 120, MTH 201, MTH 281 Total: 76****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 490-499 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."

**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.

| <b>A. Core Courses (28 credits)</b> |   | <b>Credits</b> |
|-------------------------------------|---|----------------|
| CSC 203                             | Fundamentals of Computer Science I                      | 4              |
| CSC 205                             | Fundamentals of Computer Science II                     | 4              |
| CSC 303                             | Digital Logic and Computer Design                       | 3              |
| CSC 311                             | Computer Organization and Assembly Language Programming | 4              |
| CSC 401                             | Theory of Programming Languages                         | 3              |
| CSC 406                             | Algorithms and Data Structures                          | 4              |
| CSC 411                             | Computer Architecture                                   | 3              |
| CSC 486                             | Junior/Senior Seminar                                   | 3              |

**B. Elective Courses (12 credits)**

300/400-level CSC courses selected under advisement  
 Restrictions apply. See Notes below. 12

**C. Mathematics Corequisite (3 credits)**

|         |                                    |   |
|---------|------------------------------------|---|
| MTH 481 | Discrete Mathematics II*           | 3 |
|         | *Prerequisites for MTH 481 are     |   |
| MTH 201 | Calculus I (3 credits)             |   |
| MTH 281 | Discrete Mathematics I (3 credits) |   |

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**Total: 43**  
**Total: 52**

**Credits including prerequisites CSC 120, MTH 201, MTH 281**

**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) A minimum of 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 “credit by portfolio assessment,” and a maximum of six credits by “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.

**A. Core Courses (41 credits)**

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

**B. Elective Courses (6 credits)**

|   |  |   |
|---|--|---|
| CIS 334   | Decision Support and Expert Systems      | 6 |
| CIS 404   | Multimedia Applications                  |   |
| MTH 441   | Statistical Methods I                    |   |
| MTH 461   | Math Models for Decision Making I        |   |
| BUS 461   | Production and Operations Management     |   |
| BUS 464   | Electronic Commerce and Entrepreneurship |   |
| CSC 300/400-level courses selected under advisement |  |   |
| Restrictions apply. See Note 2 below.               |  |   |

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**Total: 47**  
**Total: 56**

**Credits including prerequisites CSC 104, CSC 120, MTH 122**

**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.

| <b>A. Core Courses (8 credits)</b>         |                                     | <b>Credits</b> |
|--|-------------------------------------|----------------|
| CSC 203                                    | Fundamentals of Computer Science I  | 4              |
| CSC 205                                    | Fundamentals of Computer Science II | 4              |
| <b>B. Elective Courses (12 credits)</b>    |                                     |                |
| Four CSC courses at the 300 level or above |                                     | 12             |
| <b>Total:</b>                              |                                     | <b>20</b>      |

**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. Note that the prerequisite courses are CSC 104, CSC 120 and MTH 122.

| <b>A. Core Courses (13 credits)</b>                 |   | <b>Credits</b> |
|---|---|----------------|
| CSC 203   | Fundamentals of Computer Science I                              | 4              |
| CIS 202   | Fundamentals of Information Systems                             | 3              |
| CIS 304   | Computers and Office Productivity (or BUS 317)                  | 3              |
| CIS 317   | Analysis and Logical Design of Information Systems (or BUS 417) | 3              |
| <b>B. Elective Courses (6 credits)</b>              |   |                |
| Any 300 or higher CIS course                        |   |                |
| CSC 205   | Fundamentals of Computer Science II                             |                |
| Any elective CSC course allowed for IS track majors |   | 6              |
| <b>Total:</b>                                       |   | <b>19</b>      |

Note: For additional and updated information on the computer science program, see the *Computer Science Handbook*, available in the Department of Computer Science office.

## COMPUTER SCIENCE COURSES

**CIS 106 End-User Computing (A,T).** 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, network applications, and databases. Requires extensive lab work. *3 Cr. Every Semester.*

**CIS 202 Fundamentals of Information Systems (A).** *Prerequisites:* 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 (A).** *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. *1-3 Cr. By Arrangement.*

**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 sets, multi-processors, hard disks, CDs, backup storage, video displays, I/O devices, and networks. Also covers in theoretical terms system software, particularly in how it relates to the computer hardware. Includes these topics: assembly language; operating systems; process, file, and memory management; networks and multi-user systems. *3 Cr. Every Semester.*

**CIS 304 Computers and Office Productivity (A).** *Prerequisites:* CSC 120 and either CSC 104 or CIS 106. 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; CSC 203 and either CIS 304 or BUS 317. 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 CIS 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:* CSC 203; CIS 303 and either CIS 304 or BUS 317. 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 with DBMS (A).** *Prerequisites:* 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 logi-

cal 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).**

*Prerequisites: 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 frame work of client-server systems. *3 Cr. Spring.*

**CIS 492 Computer Information Systems 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 business programming, requirement analysis, web applications, database design, data communications, and project management. *3 Cr.*

**CIS 493 Senior Thesis (A).**

*Prerequisites: Junior status, 3.0 or better average in computer science courses, appropriate course work, at least 18 credits toward the major completed prior to starting the thesis, and instructor's permission.* 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 development, structuring available commercial software/hardware for specific applications, or an empirical case study of the use of technology. 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.*

**CIS 495 Topics in CIS (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. Expects 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. By Arrangement.*

**CSC 104 Computers in the Business World (A,T).**

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.*

**CSC 105 Internet and Web Publishing (A,T).**

*Prerequisites: CSC 104 or CIS 106 or GEP 150 or equivalent.* Provides a general introduction to cyberspace. Includes these topics: Internet, e-mail, lists, news groups, 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,T).**

*Prerequisite: MTH 121.* Introduces 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; history, uses, and social effects of computers. Requires extensive programming. Preparation for CSC 203. (Closed to students who have successfully completed CSC 203.) *3 Cr. Every Semester.*

**CSC 203 Fundamentals of Computer Science I (A,T).**

*Prerequisites: CSC 120 and MTH 122.* 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,T).** *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.*

**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. *1-3 Cr. By Arrangement.*

**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 401 Theory of Programming Languages (A).** *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).** *Prerequisites: 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, multirings, 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 CSC 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 CSC 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 stan-

dardization. Includes an in-depth study of the UNIX operating system. Requires extensive programming. *3 Cr. Spring.*

**CSC 419 Computer Networks (A).** *Prerequisites: CSC 303, CSC 311 and CSC 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. Spring.*

**CSC 421 Computer and Network Security (A).** Studies concepts, techniques and tools in computer and network security. Includes these topics: security, privacy, information assurance, threats, user authentication and access control; UNIX and Windows NT/2000 examples; logs and intrusion detection; cryptography, public-key systems, kerberos authentication; IP security, firewalls; Web and database access control and security issues; ethical issues. *3 Cr.*

**CSC 422 Relational Data Base 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.* 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 434 Artificial Intelligence (A).** *Prerequisite: CSC 205.* Provides an introduction to artificial intelligence and its languages. 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. Spring.*

**CSC 442 Electronic Commerce Technology (A).** Surveys electronic commerce technologies and realities. Studies defining tools of e-business to understand the manner in which users, tools, needs and opportunities interact. Includes these topics: the infrastructure of e-commerce and the design and implementation of e-business portals using network and database technologies, data/WEB mining and security/encryption techniques for finding and negotiating with trading partners to execute electronic transactions. *3 Cr.*

**CSC 444 Introduction to Parallel Computing (A).** *Prerequisites: CSC 406 and MTH 481.* 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.*

**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).** *Prerequisite: 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 li-

brary research, and prepared group discussions and oral presentations. *3 Cr. Every Semester.*

**CSC 492 Computer Science 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. *3 Cr.*

**CSC 493 Senior Thesis (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 thesis, and instructor's permission.* 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 ad-

vanced 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.*

**CSC 495 Topics in Computer Science (A).** *Prerequisite: Published prior to registration each semester.* As an advanced course, 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.*

**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. By Arrangement.*

## DEPARTMENT OF COUNSELOR EDUCATION

**184 Faculty Office Building  
(585) 395-2258**

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

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 Studies Catalog.

### COUNSELOR EDUCATION COURSES

**EDC 201 Life/Career Planning for Adults (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 202 Career Management (B).** Develops an understanding that career planning and the development process is not a one-time event, but an ongoing process that requires personal attention and involvement. Prepares students for transition from college to professional workplace, focusing on career goals and developing the skills to produce job-search correspondence. *3 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 Relations 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.*