University at Buffalo *The State University of New York*

Undergraduate Catalog 2008-2010

About the Catalog

Catalog Accessibility

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This catalog, along with course descriptions and faculty listings, is also available online at http://undergrad-catalog.buffalo.edu.

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About the University at Buffalo

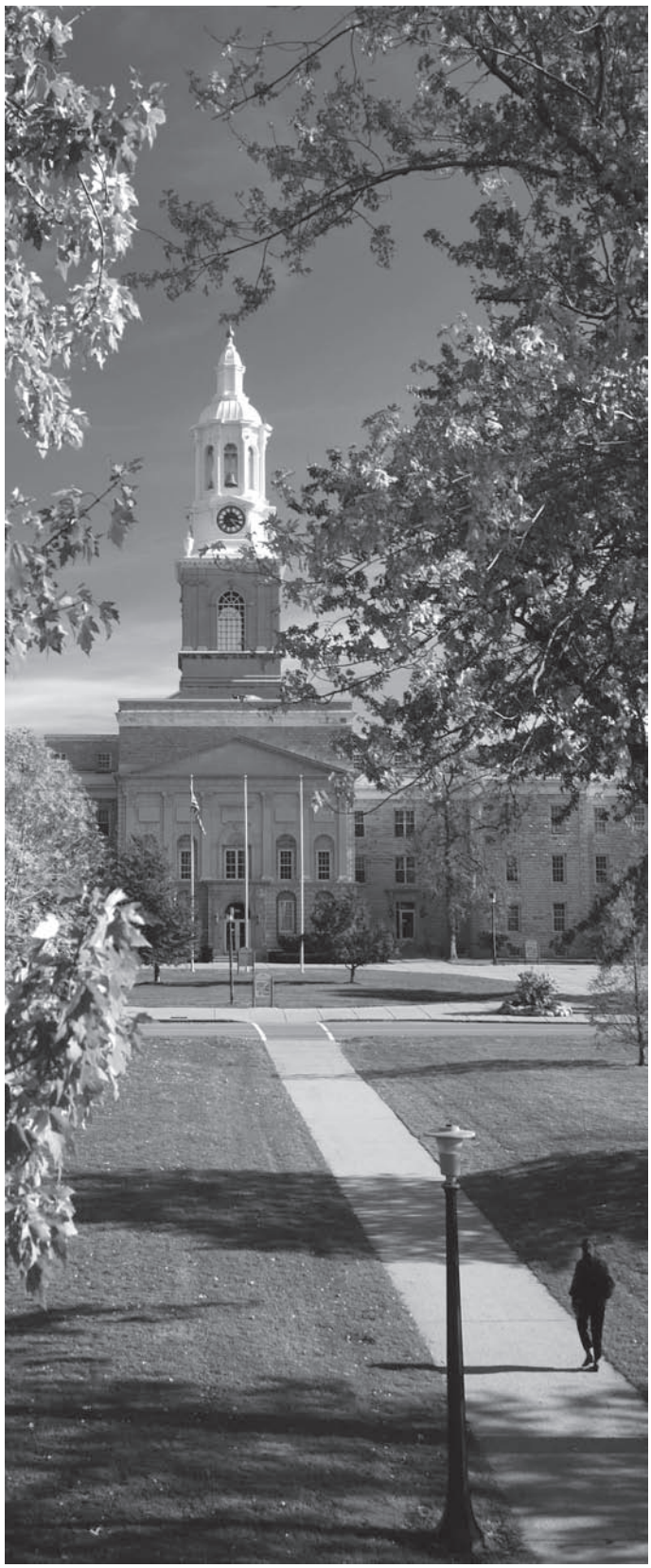
The University at Buffalo (UB) is the State University of New York's most comprehensive university center. The university's enrollment is the largest, and its range of academic programs the widest, of any public institution in New York and New England. UB is one of only two public universities in New York and New England to be admitted into the Association of American Universities, an association of the nation's leading public and private research universities.

Students take their place here among a diverse community of approximately 27,000 students, pursuing their interests from more than 100 undergraduate programs, more than 60 minors, and over 200 graduate programs. They participate in the research of our approximately approximately 1,600 full time and 1,000 part time faculty and over 90 research centers. UB's more than 180,000 living alumni reside in all 50 states and more than 120 foreign countries.

Because of its size and the variety of its programs, UB is a university in the richest sense. Along with graduate and professional education, it also displays remarkable breadth, diversity, and quality in undergraduate programs in the humanities, natural sciences, social sciences, and fine arts, as well as in a variety of undergraduate preprofessional programs. In short, New York State's major public university provides unparalleled opportunities for learning, for career preparation, and for developing a rewarding way of life.

A large university like UB is particularly suited to well-motivated students who are clear about their goals and can take advantage of the vast wealth of educational resources available on campus. Moreover, the demanding, high-quality curriculum at UB is best suited to students whose high school preparation is strong. For such students, well prepared both motivationally and academically, UB can provide an educational experience second to none.

An undergraduate education should be more than training leading to a job; it should be an intellectual challenge, a source of joy, and an adventure. No two students have the same experience at UB, but all who come to UB will find in its classrooms, laboratories, gymnasiums, libraries, computer labs, and faculty offices an unending source of the stimulation they need to learn and grow.



Student Services

Academic Advising

Academic advisors are a valuable resource for assisting students in the attainment of their educational goals and adjustment to the academic rigors of university life. Professional advisors offer a broad spectrum of information and services to all undergraduate students. A major aspect of the advisement process is to assist students in becoming independent, self-confident decision makers who are able to solve problems that arise in the process of pursuing their education. Advisors must be certain that all students, especially at-risk students, are kept abreast of the opportunities for academic assistance and support offered to enhance academic success.

Students meet with advisors as often as they choose to explore educational opportunities available within the university and plan a course of study that is consistent with their abilities, achievements, interests, and expectations. Advisors also help students build individual strategies for academic success by assisting them in determining an appropriate course load; interpreting academic requirements, university procedures, and regulations; and consulting with students who are considering a particular major as a field of study. When appropriate, advisors will refer students to other university offices that provide student services, such as Counseling Services, Health Services, Wellness Education Services, Career Services, Financial Aid, the Student Response Center, and the Learning Center. The ultimate goal of academic advising is to empower students to use the tools and resources available to become active and responsible learners.

For more information, please visit our Web site at http://advising.buffalo.edu.

The Center for Academic Development Services (CADS)

The Center for Academic Development Services (CADS) is a unique support service network designed to provide talented students who demonstrate enormous potential with the advice, guidance, and support they need to help realize their dreams and achieve academic success. The Center provides a variety of academic and social enrichment experiences. These include, but are not limited to, academic advising, personal and social counseling, tutoring, mentoring, workshops, courses and advocacy. Advising and counseling staff are readily available and will be a source of invaluable support to you.

Students who take advantage of the many services offered by CADS represent an elite and prestigious group of learners. CADS students are involved in every aspect of university life. They participate in leadership activities, are members of Deans' Lists, Honor Societies, and are recognized nationally by "Who's Who Among American University and College Students." We are proud of our students, our program, and our purpose and look forward to serving you.

For information or assistance, please contact the Center for Academic Development Services, 208 Norton Hall, Buffalo, NY 14260-1830; telephone (716) 645-3072; fax (716) 645-3075. Please visit our Web site at http://wings.buffalo.edu/eop/cads/cads.php.

Disability Services

The University at Buffalo is committed to equality of opportunity for persons with disabilities to participate in and benefit from all of its programs, services, and activities. To that end, UB makes reasonable accommodations through the coordination and advocacy of Disability Services.

For further information, please visit Disability Services' Web site at http://www.ub-disability.buffalo.edu/.

Student Affairs

Student Affairs provides high-quality services and programs in support of the university mission. Putting "students first," Student Affairs, through value-based development, enrichment, and support, promotes an open, enhanced, and diverse learning environment to help prepare students for opportunities and challenges. Please visit the Student Affairs Web site to learn more about our offices, including Campus Dining & Shops, Disability Services, Judicial Affairs, New Student Programs, Parking & Transportation, Residence Halls & Apartments, Special Events, Student Life, Wellness Team, and University Police.

For more information, please visit our Web site at http://www.student-affairs.buffalo.edu/.

Undergraduate Faculty

UB has a distinguished faculty of approximately 1,600 full-time and 1,000 part-time members. Among them are many scholars and educators who are nationally and internationally recognized in their fields. On the faculty are Nobel Prize winners; a Pulitzer prize recipient; a MacArthur Foundation fellow; recipients of the National Medal of Science and the Bollingen Prize in Poetry; several holders of prestigious Fulbright and Guggenheim awards; many recipients of grants from the National Institutes of Health, the National Science Foundation, the National Endowment for the Arts, the National Endowment for the Humanities, the American Council of Learned Societies, and other agencies that support first-rank scholarship; and an array of nationally published authors and scientists.

Along with these accomplishments, the faculty are at home in the classroom. The State University of New York has recognized more Distinguished Professors, Distinguished Teaching Professors, and recipients of the Chancellor's Award for Excellence in Teaching at UB than at any other institution in the SUNY system.

For listings of departmental faculty, please see the Academic Programs section of the online Undergraduate Catalog at http://undergrad-catalog.buffalo.edu.

University Libraries

The UB Libraries' more than 3.6 million volumes are augmented by extensive digital resources including full-text electronic journals, databases, historical and research electronic collections, as well as media, and world-renowned special collections. Several "cybraries," located in the Libraries, provide access to over 500 public computer workstations and software. The staff of the University at Buffalo Libraries includes specialists in many subject disciplines and in information and computer technologies. We actively embrace service, information access, the promotion of information literacy, and support of the educational and research missions of the university.

For more information, please visit our Web site at http://ublib.buffalo.edu.

Opportunities for UB Students

Acker Scholars

The University at Buffalo Daniel Acker Scholars Program is an individualized program for academically talented students. A component of the University at Buffalo's Cora P. Maloney College, this unique program offers support services and activities that help students with exceptional academic potential maximize their college experience from enrollment to graduation.

Acker Scholars have a long tradition of contributing to student leadership at UB and participating in community service. Since the first class of students enrolled in 1984, participants have gone on to complete medical, dental and law school, MBA programs, and various nationally recognized graduate programs. Our graduates are: accountants, physicians, corporate executives, engineers, lawyers, and teachers—the list goes on. Acker Scholars come to UB as part of a community: they attend orientation together, live together, and learn from one another. This supportive, family-like atmosphere helps students develop friendships, realize their goals, get involved, and excel at UB.

For more information, please visit our Web site at http://cpmc.buffalo.edu/acker.html.

Honoraries and Honor Societies

UB supports several honoraries and honor societies recognizing and promoting excellence and achievement among our students.

For a listing and description of each society, visit http://undergrad-catalog.buffalo.edu/uboverview/honoraries.shtml.

Nationally Competitive Fellowship and Scholarship Advisement

There are a number of prestigious national and international scholarship and fellowship award opportunities which carry substantial undergraduate or graduate level funding. These include programs such as the Rhodes, Marshall, Mitchell, Gates Cambridge, Truman, Udall, Goldwater, National Science Foundation among others.

The University at Buffalo Honors College administers the application process university-wide for major fellowship and scholarship awards. Please note that affiliation with the University Honors College as an Honors Scholar is not required. Most of these awards require a university endorsement before the applications can be forwarded to the final levels of competition.

Advance preparation for these awards is essential and may begin in the student's freshman year. To help students prepare competitive applications, the University Honors College offers individual advising assistance to all UB students in determining the appropriate fellowship or scholarship students should pursue, developing a competitive profile, selecting recommenders, preparing compelling personal statements, interviewing and developing project proposals or proposed programs of study.

Students may also view these fellowships and scholarships online at the University Honors College Web site (http://honors.buffalo.edu) or contact the University Honors College, University at Buffalo, 214 Talbert Hall, Buffalo, NY 14260-1700, (716) 645-3020.

Ronald E. McNair Post-Baccalaureate Achievement Program (TRIO)

The Ronald E. McNair Post-Baccalaureate Achievement Program or McNair Scholars Program has existed at the University at Buffalo for over 15 years. Our purpose is to prepare students for admission into a Doctoral Program (PhD) by providing a simulated graduate school experience. Services include but are not limited to research internships, faculty mentorship, GRE preparation, graduate school visits, professional research presentations, speaker series, weekly workshops/meetings, student committees, leadership opportunities and graduate school funding advisement.

For more information or assistance, please contact the Project Director, Cecil Walters, at McNair Scholars Program, University at Buffalo, 220 Norton Hall, Buffalo, NY 14260; telephone (716) 645-5478; fax (716) 645-5480, http://wings.buffalo.edu/vpaa/mcnair/.

Study Abroad

UB Study Abroad Programs offers students the experience of a lifetime: an academic program in another country that provides an education both within and outside the classroom.

Information about study abroad opportunities is available at http://www.buffalo.edu/studyabroad/.

Undergraduate Research

UB is committed to nurturing and supporting research and creative works across all academic disciplines. Every day our undergraduates and distinguished faculty engage in research projects that ignite the intellect and enliven the learning process. Through the Center for Undergraduate Research and Creative Activity (CURCA) you can be a part of this exciting world of discovery. CURCA offers a variety of services, including:

- Assisting undergraduate students in preparing for and finding challenging research opportunities
- Helping faculty match student assistants to their research projects
- Allowing students and faculty opportunities to present their research findings and display their works to the university community
- Offering funding opportunities for undergraduate students and their faculty mentors in pursuit of new discoveries

For further information regarding CURCA, please visit our Web site at http://curca.buffalo.edu/.

University Honors College

The University Honors College is one of the most comprehensive and academically rich programs of its kind in the country. The Honors College emphasizes experiential learning, providing transforming life experiences inside and outside of the traditional classroom by encouraging study abroad, internships, and community service. The program fosters in-depth scholarship by encouraging multiple degrees in diverse subjects, undergraduate research, graduate work, capstone courses, and an Honors Thesis.

With access to advanced educational opportunities and special recognition and privileges, our Honors Scholars benefit from the best that a large research university can provide and from the personal attention you'd expect to find at an elite small college.

For more information, please visit our Web site at http://honors.buffalo.edu.

University Scholars Program

The University Scholars Program provides educational support to academically talented students. The program is committed to exposing students to a variety of opportunities and resources designed to complement their overall academic experience and help them achieve their educational and career goals.

Please visit the University Scholars Web site at http://universityscholars.buffalo.edu.

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Academic Policies and Procedures

Student Responsibility Statement

The university is committed to the ideal of flexibility and diversity in the educational experience. Certain regulatory procedures are necessary, however, to ensure that the complex needs of a large student body in search of diverse educational goals are met efficiently and smoothly. Students are advised to familiarize themselves with the following details in order to avoid any difficulties along their chosen path to the baccalaureate degree.

By accepting responsibility for their education, students enhance the development of their academic, social, and career goals. As a condition of enrollment, students are responsible for reviewing, understanding, and abiding by the university's regulations, procedures, requirements, and deadlines as described in official publications, including the university's undergraduate catalog, UB Web sites, and official university e-mail communications. In addition, all students are required to positively affirm their knowledge of, and adherence to, UB's Student Conduct Rules, University Standards and Administrative Regulations prior to their inaugural semester at UB. Asserting a lack of knowledge of university regulations will not be accepted as a basis for an exception to these regulations.

Admission

EO/AA Employer and Recruiter

The University at Buffalo is an equal opportunity/affirmative action employer and recruiter. Students are chosen on the basis of ability without regard to race, color, religion, gender, age, national origin, disability, marital or veteran status, or sexual orientation, in accordance with state and federal law.

Freshman Admission

Most successful students at the university have come with a strong level of preparation in basic academic areas. Although the following courses are not requirements for admission, our experience suggests that applicants for regular admission will be adequately prepared for university courses if they have had, at the high school level, four years/units of English (with a substantial writing component), four years/units of social studies, three years/units of science, three years/units of a second language, and at least three years/units of college-preparatory mathematics. A number of students who have not completed such a program will be admitted, but they must realize that additional work in one or more of these areas may be necessary after arrival at the university in order to maximize their chances for success in various academic programs.

Freshman admission is based on consideration of a student's academic record: high school average, rank in class, SAT (critical reading and math) or ACT score, and rigor of the high school academic program. Factors such as recommendations, participation in community service, demonstrated leadership, documented evidence of exceptional creative talent and special circumstances that may have prevented presentation of competitive credentials are also considered.

Freshman applicants are required to submit a Part II supplemental application, which includes an essay, and at least one recommendation from a high school counselor or teacher. SAT and/or ACT results, including writing, are also required and must be sent directly from the testing agency.

Applicants are strongly encouraged to indicate a choice of major on the application form. This information is used for planning purposes only, since application to a particular academic department as a major generally occurs during a student's sophomore year at the university. The Departments of Art and Music, and the Schools of Architecture and Urban Planning, Engineering and Applied Sciences, Management, Nursing, and Public Health and Health Professions, review credentials at the time of initial application to the university and may offer direct admission to their programs. Music requires an audition, and art requires a portfolio in the spring semester of the freshman year.

Applicants seeking entry for a fall term should submit completed applications as early as possible during the preceding fall. The Admissions Committee begins to review completed applications and supportive credentials in December and issues notification of decisions shortly thereafter.

Early Admission

Exceptional applicants who are completing their junior year in high school may be considered for early admission to the freshman class. Students who enroll via this option generally have only one or two remaining high school requirements, which they complete as part of their freshman course load at the university. Information about the admission process and criteria may be obtained from the Office of Admissions.

Early Decision

Early decision is an early-application, early-notification program for students applying for freshman admission to the university. Applicants must submit an application no later than November 1. Accepted students will be notified by December 15 and will be expected to withdraw all applications they may have filed at other colleges and universities. Information about applying and admission criteria may be obtained from the Office of Admissions.

Acker Scholars

The University at Buffalo Daniel Acker Scholars Program is an individualized program for academically talented students. A component of the University at Buffalo's Cora P. Maloney College, this unique program offers support services and activities that help students with exceptional academic potential maximize their college experience from enrollment to graduation.

Acker Scholars have a long tradition of contributing to student leadership at UB and participating in community service. Since the first class of students enrolled in 1984, participants have gone on to complete medical, dental and law school, MBA programs, and various nationally recognized graduate programs across the nation. Our graduates are accountants, corporate executives, engineers, lawyers, teachers—the list goes on—and they stand ready to help more students achieve their educational and career goals.

For more information, please see our Web site at http://cpmc.buffalo.edu/acker.html.

Educational Opportunity Program (EOP)

The Educational Opportunity Program (EOP) offers college access and support to talented students whose educational and economic circumstances have severely limited their college educational opportunities.

The program consists of the CADS Pre-freshman Summer Program, the counseling unit, academic services, the financial aid stipend, and a research/evaluation component.

EOP provides direct services to about 1,000 students; however, its contributions enhance the overall quality of life for the entire UB community in areas that span the academic, personal, and social arenas of student life.

Participants in the University at Buffalo EOP have been identified as talented students with enormous potential who simply need the chance to bring that potential to fruition. The students must meet the same rigorous standards of performance as every other student who graduates from the University at Buffalo. EOP simply affords them the chance to take advantage of the opportunities the University at Buffalo has to offer.

EOP provides students with the advice, guidance, and support to help their potential materialize into academic success and their aspirations become reality. EOP counselors provide students with academic advising;

personal, social, and financial counseling; and a host of advocacy-type supportive services.

Past and present program participants have shown themselves to be a prestigious group of students. They are involved in leadership activities in every facet of the university. They are members of the Dean's List and honor societies, and are recognized by Who's Who Among Students in American Universities and Colleges.

Information about EOP is available by contacting the Director, EOP Program, University at Buffalo, 208 Norton Hall, Buffalo, NY 14260-1800, (716) 645-3072, http://wings.buffalo.edu/eop.

Freshman EOP Admission

The University at Buffalo is committed to providing access to higher education for all capable students. The Educational Opportunity Program (EOP) provides an avenue for admission and means of support for talented students who have not yet reached their academic potential due to barriers in their educational, economic, or personal background. Applicants must be New York State residents who demonstrate a need for financial support. Supportive services, such as counseling and tutoring, and financial assistance are offered to students who qualify for EOP admission.

To be eligible for the program, applicants must meet both the university's EOP academic criteria and the financial guidelines mandated by the State of New York. Further information about these guidelines and about applying for admission may be obtained from the Office of Admissions.

Transfer EOP Admission

Transfer students who were enrolled in an EOP/HEOP, SEEK, College Discovery, or other EOP-type program at their previous colleges are eligible to transfer into the Educational Opportunity Program at UB. Applicants from a CUNY (City University of New York) school will be considered if they were deemed eligible for such a program but were not selected because of the lottery system.

EOP transfer applicants must have a minimum of 12 completed credit hours with a minimum GPA of 2.5 overall. It is expected that 24 credit hours will have been completed prior to enrollment.

Applicants may use the SUNY application found in any New York State high school guidance office. Transfer applicants will also find SUNY applications in the transfer offices of SUNY two-year colleges. In addition, applications are available from the Office of Admissions or via the Internet. Freshman applicants should be sure to submit the completed applications to their high school guidance counselors, who will forward them to the Application Processing Center (APC), State University Plaza, Albany, NY 12246.

Transfer applicants should have their college transcripts sent directly to the UB Office of Admissions and should send the completed application to APC.

University Honors College

The University Honors College is one of the most comprehensive and academically rich programs of its kind in the country. The Honors College emphasizes experiential learning, providing transforming life experiences inside and outside of the traditional classroom by encouraging study abroad, internships, and community service. The program fosters in-depth scholarship by encouraging multiple degrees in diverse subjects, undergraduate research, graduate work, capstone courses, and an Honors Thesis. With access to advanced educational opportunities, and special recognition and privileges, our Honors Scholars benefit from the best that a large research university can provide and from the personal attention you'd expect to find at an elite small college.

Each year, the University at Buffalo invites 325 exceptional incoming freshmen students to participate in the University Honors College. Students admitted into the program benefit from unique academic opportunities and benefits including special seminar courses, early registration, library privileges, priority housing, faculty mentors, an undergraduate research and creative activities fund, scholarship support for Honors College scholars who study abroad, and involvement in the Evening with Faculty programs. Admission to the Honors College is based on high school performance and standardized test scores. To be competitive for consideration, applicants should present an unweighted high school average of 93 and a combined SAT critical reading and math score of 1300 or ACT score of 29.

Honors College

The University Honors College provides two comprehensive, university-wide options for academically talented students: the University Honors College for incoming freshmen students, and the Advanced Honors Program for upper-division current UB and transfer students. Students accepted to each program receive special benefits, allowing them to create educational experiences unique to their individual interests.

With globalization and the shifting economic, technological, and cultural landscape it is likely students will change jobs several times over the course of their career. As a result, they must be creative and nimble to succeed in the international marketplace of ideas. They must be scholars of the first order, be able to work effectively with people of virtually every background, all the while being sensitive to the needs of their community. The University Honors College helps prepare students for the 21st century by:

- Emphasizing experiential learning, providing transforming life experiences both inside and outside the traditional classroom by encouraging study abroad, internships, and community service.
- Fostering in-depth scholarship by encouraging multiple degrees in diverse subjects, undergraduate research, graduate work, capstone courses, and an Honors thesis.
- Requiring a detailed annual review of career plans with our professional advisement staff, recognizing that the majority of students change their majors during their university years, often with unexpected opportunities.
- Conferring a strong Honors experience throughout all four years at UB, enhancing the interaction of students and faculty mentors, and producing a strong network of scholars for the future.

The responsibilities of an Honors Scholar include successfully completing the Honors Colloquium in the Fall semester freshman year and completing two Honors seminars, one each semester of the freshman year. Students should maintain a 3.3 Grade Point Average (GPA) during their first year and at least a 3.5 GPA in each successive year to graduate with an overall GPA of 3.5.

In the following three years, scholars will select and complete six Honors Experiences from the following list:

- Undergraduate research or creative activity
- Independent study
- Internship or practicum
- Study abroad
- Undergraduate supervised teaching
- Graduate coursework
- Departmental Honors coursework
- Departmental Honors thesis or project
- Senior Capstone coursework
- Double degree, a double major, or a major and a minor
- Contract Honors coursework

To help guide students in developing a unique Honors academic program, academic advisement is provided during the freshman, sophomore, and junior years to ensure that they are making the most of their undergraduate education at UB. For special guidance and support, each Honors Scholar is matched with a faculty mentor whose research and teaching interests correspond to the student's academic goals. Priority registration, preferred convenient housing, library privileges, special lecture series, research and creative projects funding, and study abroad scholarships are among the many special privileges afforded to Honors Scholars.

Advanced Honors Program

Each semester, highly qualified current university students are invited to apply for admission to the Advanced Honors Program. Students are eligible to apply once they have completed 60 credit hours and have a minimum overall GPA of 3.5 (including all transfer credit). The program provides an individualized honors opportunity for academically talented students, including those who may not have been eligible for the University Honors College upon admission to the university. In addition to completing an application for admission to the program, students must also write a

personal statement addressing their educational goals and aspirations, and must provide two faculty letters of recommendation. Application deadlines are October 1 for the fall semester and March 1 for the spring semester.

The Advanced Honors Program requires the completion of a senior thesis under the direction of two faculty advisors, the completion of three honors courses, and a breadth requirement (e.g., a second major, minor, overseas study, internship/co-op program, or community service). In return, Advanced Honors Scholars receive early registration privileges, opportunities for funding for research and study abroad experiences, special advisement, and commencement and transcript recognition of their excellence.

Presidential Scholarship Program

The Presidential Scholarship Program offers full scholarships for four years of undergraduate study at UB for a select group of the top entering freshmen students. These scholarships cover the entire cost of an undergraduate education at UB, including tuition, room and board, books, fees, and other school-related expenses. The value of the Presidential Scholarship increases as educational costs rise. Students awarded the Presidential Scholarship automatically receive admission to the University Honors College, enjoying all of the special privileges accorded to Honors Scholars. Presidential Scholarships are awarded on the basis of academic merit.

Students meeting the requirements of a minimum score of 1470 on the math and critical reading sections of the SAT I or 33 on the ACT and a minimum unweighted high school average of 95 must submit the Presidential Scholarship application, which is available from the Honors Program office and must be on file in the University Honors Program office by early-January. In addition, students must file the SUNY application for admission to UB; this must be submitted by December 31 of the application year. Offers are made beginning mid-February.

Performing and Creative Arts Scholarship Program

Provost Scholarships are also available to students with outstanding talent in the Performing and Creative Arts. Students interested in majoring in Theatre (Performance, Technical, Design, Play writing, or Music Theatre), Visual Studies (Art), Dance, Media Study or Music (including Music Performance) are considered. Performing and Creative Arts Scholars are invited to join the University Honors College and receive all the special privileges accorded to Honors Scholars. To be considered, students must have a minimum unweighted high school average of 90 and a minimum combined SAT critical reading and math score of 1230 (or minimum ACT score of 28). If you would like to be considered for this scholarship, you should apply to the university by December 31, as scholarship awards will be based on academic credentials received by this date. An audition or portfolio review, a personal interview and a separate scholarship application are also required. Some departments have specific additional application requirements and deadlines. Provost Scholarships are awarded beginning mid-February. Performing and Creative Arts Scholars are invited to join the Honors College beginning in March of each year. For more information contact the University Honors College office.

Information concerning the University Honors College, and applications for Presidential Honors Scholarships, Performing and Creative Arts Scholarships, and the Advanced Honors Program, are available from the University Honors College, University at Buffalo, 214 Talbert Hall, Buffalo, NY 14260-1700, (716) 645-3020. Additional information can be found on the Honors College Web site, http://honors.buffalo.edu.

University Scholars Program

The University Scholars Program provides an enriched academic environment that assists students with making the most of their undergraduate experiences at the university. All University Scholars enjoy exclusive benefits and opportunities designed to expand their educational horizons and prepare them for success in college and beyond. The program eases the transition from high school to college and offers special educational opportunities that are tailored to each student's unique talents, interests, and goals.

For further information about the University Scholars Program, please contact Student Advising Services at (716) 645-6013 or see our Web site at http://universityscholars.buffalo.edu.

College Study for High School Students

The Advanced College Credit Program provides outstanding high school students with the opportunity to enroll in courses for full credit while completing remaining high school requirements. Applications and further details about admission criteria can be obtained from the Office of Admissions.

Transfer Admission

The University at Buffalo reserves the right to determine its own policies for the admission of transfer students from other institutions, as well as the acceptance and placement of credit. A student who has completed at least 12 credit hours of college-level work after receiving a high school diploma (or its equivalent) will be considered a transfer applicant. If 24 or more credit hours have been completed at the time of application, the basis for consideration will be the previous college academic record; if fewer than 24 credits have been completed, a high school transcript and SAT/ACT scores must also be submitted.

An official transcript from each college attended must be received before a decision can be rendered. An official transcript is sent directly from the registrar's office of the college to the University at Buffalo's Office of Admissions. Transfer students who enroll at UB are required to submit proof of high school graduation. Acceptable proof includes: a final high school transcript confirming graduation or a General Educational Development (GED) score report.

Provisional admission is offered when courses are currently in progress. Final admission offers are made when official transcripts of all completed courses have been evaluated.

In order to receive consideration for transfer admission to the University at Buffalo, student must complete the supplemental Part II application. It is recommended that students present a strong record of college study, earning a cumulative grade point average of at least 2.5 on a 4.0 scale. It should be noted, however, that requirements may vary depending on the academic program. GPAs for transfer course work are computed in accordance with the grading policies in effect at the University at Buffalo.

Admission to the university is granted on a space-available basis. Candidates are urged to submit applications and transcripts early in the semester preceding their intended entry date. Some programs with limited enrollments require additional supplemental application and have specific deadlines. Students may wish to arrange an appointment with the academic department in which they are interested. Department phone numbers are listed in the Academic Programs of Study section.

University Transfer Credit Policy

The University at Buffalo reserves the right to evaluate all credit-bearing courses.

All credit-bearing courses from accredited institutions of higher learning are considered transferable to the University at Buffalo; the grades earned in these courses are used in overall GPA calculations. The term "accredited," as used here, refers to the following regional accreditation organizations:

- MSA/CHE, Middle States Association of Colleges and Schools/ Commission of Higher Education
- NEASC, New England Association of Schools and Colleges
- NCA, North Central Association of Colleges and Schools
- NASC, Northwest Association of Schools and Colleges
- SASC-Comm. on Coll., Southern Association of Schools and Colleges-Commission on Colleges
- WASC-Sr., Western Association of Schools and Colleges-Accrediting Commission for Senior Colleges
- WASC-Jr., Western Association of Schools and Colleges-Accrediting Commission for Community and Junior Colleges

Credit courses from institutions with other than regional accreditation are evaluated for transfer purposes on a case-by-case basis.

Official Transcript Evaluation

Courses transferred from another institution to UB will be transferred with full semester credit value. Conversion of credits from trimester, quarterly, and other calendar systems will be completed based on nationally accepted

practices. For example, trimester hours are generally equal to semester hours and quarterly hours are generally equal to two-thirds semester hours.

Transfer Course Articulation

Transfer course articulation at UB is a formal evaluation by academic faculty comparing the content of courses offered at other campuses to UB courses and requirements. UB transfer course articulation is available to the public on the Web site TAURUS (Transfer Articulation and University Requirements at UB System) at *http://taurus.buffalo.edu*. TAURUS also displays transfer course articulation applied to the requirements for any UB degree as a planning guide. Transferring and continuing students use TAURUS to identify suitable courses in preparation for transfer to UB, for summer study and to complete degree requirements.

Readmission of Former Students

All students in academic good standing who withdraw voluntarily are eligible to return. A Reentry Form must be filed with the Office of Admissions well in advance of the intended reentry date.

Students not in good standing—who have voluntarily withdrawn or were dismissed for poor academic performance or whose GPA is less than 2.0 (overall and at the University at Buffalo)—must file the Reentry Form and a petition for readmission. The Scholastic Standards Committee will review the requests on the basis of data demonstrating that the students are able to progress satisfactorily toward the completion of their degree programs. Information about Second Chance, UB's academic forgiveness policy, can be found in the Grading section of this catalog.

Visiting Student Program

Students enrolled at other institutions may apply to study at UB as visiting students for up to one full year without formal transfer. With approval from their home campus, students receive full credit for approved courses completed at UB. Information about applying and admission criteria may be obtained from the Office of Admissions.

University Degree Requirements

Catalog Rights Statement

Although the information herein has been reviewed by numerous university faculty and staff members, the text may nevertheless contain errors. Calendars, academic and degree programs, policies, and fees are subject to change at any time by official action of the University at Buffalo or the State University of New York. In addition, changes in policies, procedures, and administration may have occurred since the final publication deadline for this catalog and its printed version. Updates are regularly made in the online version, with modifications and their effective dates noted in the Catalog Updates section. In case of discrepancies between the online and printed versions of the catalog, the online version is considered definitive. Students should contact individual undergraduate departments or campus offices for the most recent information.

Upon nomination by the faculty and by vote of the Board of Trustees, degrees are conferred upon students who have met the requirements listed in this catalog.

University Requirements

Students continuously enrolled at UB or on an official Leave of Absence from UB are governed by the university requirements (e.g., general education) stated in the catalog in effect at the time of their initial matriculation in the university. For example, students who enter the university in fall 2008 and are continuously enrolled through graduation must meet the baccalaureate degree requirements as stated in the 2008-2009 catalog.

Major Program Requirements

Students continuously enrolled in a particular major degree program or on an official Leave of Absence from the program are governed by the requirements of that program as stated in the catalog in effect at the time of their initial entrance into the program. For example, students who are accepted into a major during the fall 2008 semester and are continuously enrolled through graduation must meet the requirements for the major as stated in the 2008-2009 catalog.

Either the university or a program may find it necessary to update requirements for students who have been enrolled in the university or in a program for an extended period.

Breaks in Student Enrollment

Students who leave the university or a major degree program for one or more semesters without an official Leave of Absence are governed by the requirements stated in the catalog in effect at the time of their most recent readmission to the university or to the major program.

Class Standing

A student must complete a minimum of 30 credit hours to be classified as a sophomore, 60 credit hours to be classified as a junior, and 90 credit hours to be classified as a senior. Grades of incomplete are not counted as credits completed.

Matriculation Status

To be considered a candidate for a baccalaureate degree, a student must have been formally admitted to the university in accordance with admission standards.

Matriculated and Nonmatriculated Students

A matriculated student is one who has applied and been officially accepted to the university through an undergraduate admission process and is considered to be pursuing a degree.

A nonmatriculated student is one who is enrolled on a semester-by-semester or course-by-course basis and has not been accepted as a regular student pursuing a degree.

Minimum Number of Credit Hours

Candidates for bachelor's degrees must complete a minimum of 120 credit hours, 30 of which must have been completed at the University at Buffalo campus. No more than 18 credits of tutorial coursework (including that of TUT (tutorial) type and course numbers 495-499), 8 credits of athletics activity coursework, and 6 credits of UE 141 Discovery Seminar coursework can count toward the credits required for graduation with a bachelor's degree.

Academic Residency Requirements

A student must complete a minimum of 30 undergraduate credit hours (the equivalent of one full year of study) at the University at Buffalo in order to earn a degree from the university. The minimum residency requirement for the combined undergraduate and graduate degree is 42 credit hours, of which 18 must be undergraduate and 24 must be graduate.

The following forms of credit may not be used to fulfill the residency requirement: transfer work; proficiency exams; Advanced Placement; military training; study abroad; cross-registration; international baccalaureate credit; and experiential learning.

Note: Individual schools and departments might have additional residency requirements as part of their transfer policies.

Minimum Academic Average

Students must have a minimum cumulative GPA of 2.0, both overall and at the University at Buffalo. As specified in this catalog (see *http://undergradcatalog.buffalo.edu/policies/degree/minimum.shtml*), tutorial, athletic activity, and UE 141 courses beyond the maximum allowed will not be included in the computation of the UB or overall average. Attempted coursework at UB and all transfer credit will be included in the computation of the overall average. In computing a student's average for work completed at another accredited institution, GPAs will be computed in accordance with the University at Buffalo's grading policies (e.g., all attempted hours, including "F"s, will be used to determine the GPA).

Students cannot graduate with an Incomplete "I" grade on their record (see "Incomplete Grades" section).

Major Requirements

To qualify for an undergraduate degree, matriculated students must be enrolled in a degree program and satisfactorily complete the requirements of their fields of study, as well as those of the university. This includes all major requirements and general education requirements. See the Academic Programs section for major acceptance criteria and program requirements and the General Education Requirements chart for a description of general education requirements.

Additional special degree options are available as listed below. These degree options require great care in planning early in an academic career in order to meet the full requirements. Advisement is available for such planning; however, it is the student's responsibility to ensure that all requirements of a planned program have been completed.

Double Majors

A double major is the awarding of one degree with two majors (e.g., the student completing a double major of psychology and social sciences interdisciplinary studies earns one BA degree). Students must be accepted into each major and fulfill all requirements of each major in addition to satisfying all university requirements. This may be completed within the usual 120-credit minimum. Double majors must be between departments leading to the same degree. For example, a student may not have a double major between engineering (BS) and psychology (BA). Following conferral of the degree, the student's transcript will note one baccalaureate degree with two majors.

Joint Majors

A student may elect to work toward a joint major by combining the subjects of two departments (e.g., geography and economics, physics and mathematics). A joint major does not require completion of all of the requirements of each major; rather, it is composed of requirements from each major as determined by the student and the directors of undergraduate studies in each department. Joint majors must be between programs leading to the same degree. For example, a student may not have a joint major between engineering (BS) and psychology (BA). Students wishing to pursue a joint major between programs leading to different degrees should consider pursuing a Special Major (see the "Special Major" program listing in this catalog).

Although a few academic departments, such as economics, geography, mathematics, and physics, have firmly established optional joint majors with other departments, students are normally free to choose their own joint majors. The Social Sciences Interdisciplinary Degree Program does not permit a joint major but uses a double major instead.

The director of undergraduate studies of each department concerned will assist in planning a joint major. In arranging the program, the student must obtain approval from the two departments involved. In special cases, a student may arrange a program cutting across several departments, so that the program involves more than one faculty or school.

Minors

A minor is a secondary field of study that is typically composed of six courses. The minor offers students a means to complement the major, explore a subspecialty, and/or broaden career alternatives. Minors are available in many subject areas but may not be taken within the student's majors (see Approved Minors chart). Consult the Academic Programs section for individual minor requirements. Students can receive a bachelor's degree if they are enrolled in a major program and a minor program, but cannot receive a bachelor's degree if they are enrolled in a minor program and not enrolled in a major program.

Double Degrees

The double degree is the concurrent awarding of two different baccalaureate degree types (BA, BS, BFA, MusB). If a student completes two majors within one degree type, s/he will be awarded a double major (one degree with two majors), not two degrees, regardless of how many credits s/he earns.

Students pursuing two majors in two different degree types are expected to have the full range of skills, competencies, and experience as students graduating from each of the programs individually. Thus, students must meet all requirements for each major. In no circumstance may the coursework in the second degree be fewer than 30 credit hours. For a double degree, the following four criteria must be met:

For double degrees, four criteria must be met:

- Degree types must be different (BA, BS, MusB, BFA);
- No more than two 300- and 400-level courses taken as requirements for one major in one degree can also be counted as part of the required courses for the other major in the other degree, including required elective credits.
- A minimum of 30 credits accrued beyond the full requirements of the degree with the larger number of required undergraduate credits or 150 credits total, whichever is greater; and
- All requirements for both programs are fully completed.

Students wishing to pursue two degrees should do careful planning early in their academic career with the guidance of both programs to assure that the plan of study meets the criteria noted here.

Subsequent Degrees

Some students decide to return to their studies after they have received their first undergraduate degree. Once a degree is conferred, the courses and credits from that degree cannot be used in subsequent degrees, and students may not return to add a minor or concentration to the conferred degree. In order to receive a subsequent degree, the student who has previously earned a baccalaureate degree from UB or an accredited U.S. institution must be accepted to UB as a matriculated student and be accepted into the new major. Students pursuing a second bachelor's degree must have the full range of skills, competencies, and experience in the major as students who complete the requirements for the regular degree program. Thus, students must meet all requirements for the major. In no circumstance may the coursework in the second degree program be fewer than 30 credit hours after the conferral of the first degree. The two degrees must be in significantly different fields of study; therefore, 300- and 400-level coursework completed for the first bachelor's degree will not count toward completing the major requirements of the second degree. In the rare circumstance when a single course taken for the first degree program is a required course in the second degree program, a course substitution in the second degree may be approved by petition from the undergraduate program director of the new program.

Combined Degrees

This degree option results in the awarding of a single combined degree that joins specific programs or disciplines from two degree levels (e.g., BA/MA, BS/MBA). Combined degree programs offer UB students the opportunity to pursue their educational objectives at an accelerated pace by compressing the courses normally taken at the end of the undergraduate degree with those customarily taken at the beginning of a graduate degree. These programs are designed for students who have demonstrated exceptional promise.

In certain circumstances, the combined degree will not qualify the student for licensure if licensure is based upon the complete undergraduate curriculum. Students in professional programs should discuss licensure requirements with their advisors if they are considering the combined degree option.

Combined degrees have a two-tier tuition structure. Over the course of a combined degree program, the student will be charged the tuition that corresponds to the appropriate divisional rate. For example, if a student in the combined BA/MBA program in management were required to complete three years of undergraduate coursework and two years of graduate coursework, the student would be classified as an undergraduate and billed at the undergraduate rate for the equivalent of three years. At the conclusion of this period, the student's division would change to graduate, and the student would be classified and billed accordingly.

Students choosing to leave the combined degree program and pursue separate undergraduate and graduate degrees will have their billing altered in the following manner. Students who are in the undergraduate portion of the program when they choose to leave the combined degree program will continue with their undergraduate coursework and be billed accordingly; however, these students will not be permitted to take graduate courses

until they complete their baccalaureate degree and are admitted formally to a graduate program through the normal process. Students pursuing the graduate portion of the combined degree program when they choose to leave the combined degree program will continue to be charged at the graduate level even for those courses taken at the undergraduate level after this point in time.

The minimum residency requirement for a combined degree is 42 credit hours at UB.

For a listing of Combined Degree Programs, see the Degree Program Summary chart on pages 30-31.

UB DARS

DARS (Degree Audit Reporting System) is an advising tool that tracks progress toward graduation by showing how courses taken meet graduation requirements for all approved undergraduate programs. In individualized reports, DARS summarizes all General Education and program requirements, indicating those that have been satisfied; computes the cumulative GPA; totals all credit hours taken; lists repeated courses and those taken S/U; notes Incomplete courses; indicates test scores and credits granted for AP and CLEP examinations; and lists all transfer and UB courses taken.

DARS is useful in the following respects:

- As an advising tool: to determine progress toward completing all degree requirements;
- Applying to a department: DARS reports can be included in the department application process.
- Analysis of transfer credits: to verify that all transfer credits have been recorded and applied to degree requirements.

DARS reports are available for all matriculated undergraduate students in MyUB and can be generated for the current approved major or any other program when considering alternative majors. Students should examine their DARS reports carefully and speak to an advisor if there are questions or discrepancies in the report.

Early Assurance Programs

School of Medicine

Each year, well-qualified undergraduates may receive formal acceptance to the medical school in the second semester of their sophomore year. To qualify, students must possess a minimum approximate overall and science GPA of 3.75 and complete particular science courses. An SAT score of 1400 or above is required. Upon receipt of the baccalaureate degree, the medical phase begins. This is not an accelerated program. The preprofessional health advisor can provide further information.

School of Dental Medicine

Each year, well-qualified undergraduates may receive formal acceptance to UB's School of Dental Medicine after the second semester of their sophomore year. To qualify, students must possess a minimum overall and science GPA of 3.5 and complete specific science courses. Upon receipt of the baccalaureate degree, the dental phase begins. This is not an accelerated program. The preprofessional health advisor can provide further information.

School of Pharmacy

Any student who enters the University at Buffalo directly from high school as an intended-pharmacy major is eligible for Early Assurance consideration. This is not an accelerated program. Please refer to the sheet published for the year in which the student enters for specific details regarding the requirements for Early Assurance. Students are strongly encouraged to meet with the pre-pharmacy advisor and subscribe to the Pre-Pharmacy Listserv. The Pre-Pharmacy Advisor, Early Assurance sheets and Pre-Pharmacy Listserv information are available in 112 Cooke Hall.

General Education Requirements

General education requirements can be found at the General Education Program Web site at *http://gened.buffalo.edu*.

Requirements differ by student status. Please note that there are different requirements for: (1) students who entered as freshmen; (2) students who entered as transfer students; (3) re-entering students who were recently enrolled at UB; (4) re-entering students last enrolled more than five years ago; (5) students enrolled for a second bachelor's degree; (6) students enrolled who have a completed bachelor's degree from a foreign institution; and (7) students with a registered learning disability.

General Education Advising Notes

S/U grading is not an option in any course used to satisfy General Education requirements. Internship, Independent Study, Undergraduate Teaching, Experiential Learning, and other courses not based on classroom experiences may not be used to meet general education requirements.

Any given course may be applied toward only one General Education requirement, unless explicitly noted otherwise.

Only the specified courses or those that articulate to the specified courses listed for each respective General Education requirement may be used to fulfill that particular requirement. No other courses qualify.

SUNY has established *minimum* General Education requirements for campuses across the SUNY system. UB's General Education program meets, and in many cases exceeds, these requirements. Students should understand that meeting SUNY General Education requirements at other campuses does not mean that they have met UB's requirements. Finally, students may be required by UB to participate in periodic assessment activities in order to ensure that the goals and learning outcomes of the General Education program are being achieved. Activities solely for UB/SUNY assessment purposes do not affect a student's grade in the course, but student activities required and graded for the course *may* be used separately for assessment purposes as well.

GENERAL EDUCATION REQUIREMENTS

For All Students Who Enter Fall 2008 and Spring 2009

Writing
Complete ENG 101 and ENG 201, or ENG 102, as placed, unless exempted.

Library Skills
Complete the Library Skills Workbook.

Mathematical Sciences
Complete one course from the following lists.

RECOMMENDED COURSES FOR STUDENTS WHO ARE NOT MEETING A SPECIFIC REQUIREMENT OF A MAJOR

CSE 111 Great Ideas in Computer Science I
CSE 112 Great Ideas in Computer Science II
STA 119 Introduction to Statistics

ADDITIONAL COURSES THAT SATISFY THE MATHEMATICAL SCIENCES REQUIREMENT

CEP 207 or MGQ 301 or PSC 408 or PSY 207 or SOC 294 or SOC 404 or SSC 225 or STA 111 - STA 112*
CSE 113 Introduction to Computer Science I
CSE 114 Introduction to Computer Science II
CSE 115 Introduction to Computer Science for Majors I
CSE 116 Introduction to Computer Science for Majors II
CSE/MTH 191 Introduction to Discrete Mathematics I
CSE/MTH 192 Introduction to Discrete Mathematics II
MTH 115 or ULC 148 Survey of Algebra and Trigonometry
MTH 121 or MTH 131 or MTH 141 or MTH 151 or MTH 153*
MTH 122 or MTH 132 or MTH 142 or MTH 152 or MTH 154*
MTH 181 Conceptual Mathematics I
PHI 315 Symbolic Logic
PHI 415 Logical Theory I
PHI 416 Logical Theory II

Courses grouped together are equivalent courses. Students should not take more than one course from each group.

World Civilizations
Complete UGC 111-UGC 112 World Civilizations I-II. (**See note at the end of this section.)

Natural Sciences
Students must complete a two-course sequence, including at least one semester of laboratory. Allowable two-course sequences are outlined in lists below.

RECOMMENDED COURSE SEQUENCES FOR STUDENTS WHO ARE NOT MEETING A SPECIFIC REQUIREMENT OF A MAJOR

BIO 129 - BIO 130 Perspectives in Human Biology
GEO 101 and GEO 106 Physical Environmental Geography
GLY 101 - GLY 102 Global Environmental Science
NTR 108 - NTR 109/NTR 110 Human Nutrition/Nutrition in Practice
PHY 121 - PHY 122 Descriptive Astronomy

ADDITIONAL COURSE SEQUENCES THAT SATISFY THE NATURAL SCIENCES REQUIREMENT

BIO 200 Evolutionary Biology and BIO 201 Cell Biology
BIO 200 Evolutionary Biology and BIO 309 Ecology
CHE 101 - CHE 102 General Chemistry
CHE 105 - CHE 106 Chemistry: Principles and Applications
CHE 107 - CHE 108 General Chemistry for Engineers
GLY 103 - GLY 104 Evolution of the Earth and Solar System
PHY 101/PHY 151 - PHY 102/PHY 152 College Physics I-II/Lab
PHY 107 - PHY 108/PHY 158 General Physics I-II/Lab
PHY 117 - PHY 118/PHY 158 Honors Physics I-II/Lab

Note: Architecture majors only complete ARC 352 and PHY 101; Nursing and OT majors only complete ANA 113 and PGY 300.

American Pluralism or Cognate (approved equivalent courses)
Complete UGC 211 American Pluralism and the Search for Equality or any one of the following: AAS 261, ARC 211, AHI 390, DMS 213, GEO 231, HIS 161, HIS 162, LIN 200, SOC 211, PD 211. (** See note at the end of this section.)

Note: UGC 111 - UGC 112 World Civilizations I-II should be completed first.

Social and Behavioral Sciences
Complete one 3-credit course offered by APY, CDS, COM, ECO, GEO, LIN, PSC, PSY, SSC, or SOC; or ARC 122, PD 120, PD 212.

Note: Courses used to satisfy any other general education requirement are excluded.

Language Requirement
Complete second-semester course or demonstrate proficiency in a language other than English equivalent to completion of one second-semester course (e.g., SPA 102/FR 102/LAT 102 or SPA 104/FR 104/LAT 104). Students continuing instruction in the same language as studied in high school will ordinarily take one additional semester of language study. Students beginning a new language will ordinarily take two semesters of language study. Students may demonstrate proficiency in a language other than English by:

- Completing a second-semester course at the appropriate level (e.g., SPA 102 or SPA 104); or
- Achieving a minimum score of 600 on a College Board Foreign Language Achievement Test; or
- Achieving a minimum score of 3 or 4 (depending upon the language and the test) on an AP test in a foreign language; or
- Showing a high school diploma from a country whose language of instruction is other than English; or
- Passing a "challenge examination" administered by the Department of Romance Languages and Literatures.

Note: Majors in the following schools and program are not required to complete language study: Architecture; B.F.A. in Art, Dance, Music Theatre, Theatre; Biochemical Pharmacology; Bioinformatics; Biomedical Sciences; Biotechnology; Engineering (except Computer Science); Informatics; Management; Medical Technology; Medicinal Chemistry; Nuclear Medicine Technology; Nursing; Pharmaceutics, Pharmacy; and Public Health and Health Professions.

Note: Some majors and minors require additional semesters of language study.

Humanities
Students completing ENG 101/ENG 201 have met this requirement. Students completing ENG 102 must complete one 3-credit course offered from AAS, AMS, CL, COL, ENG (excluding ENG 101/ENG 201), FR, GER, HIS, HMN, ITA, JDS, PHI, RSP, SPA, WLP, WS, and other languages.

Note: Courses used to satisfy any other general education requirement are excluded.

Arts
Complete one 3-credit course offered by ART, AHI, DMS, MTR, MUS, TH, or THD; ARC 121 is also an option. (** See note at the end of this section.)

Note: Courses used to satisfy any other general education requirement are excluded.

Depth Requirement
Complete any one of the following:

- Third-semester language proficiency (e.g. SPA 151)
- An additional course from the listing of mathematical sciences courses
- UGC 302 or UGC 303 Great Discoveries in Science
- A natural sciences course numbered 200 or higher
- Any one of the following courses: APY 310, APY 328, APY 338, APY 344, APY 345, APY 348, APY 350; ARC 442; CDS 288, CDS 382; GEO 345, GEO 347, GEO 348, GEO 350, GEO 352, GEO 356, GEO 435, GEO 449; PSY 351, PSY 402, PSY 434, PSY 435, PSY 436, PSY 439

Note: Courses used to satisfy any other general education requirement are excluded.

***Note: Students who entered UB with 24 or more transferable credit hours from an institution of higher education other than UB are exempted from the World Civilizations, American Pluralism, and Arts requirements. These credits must have been earned prior to enrollment at UB.*

Academic Honors

Latin Honors

Students earning baccalaureate degrees are eligible to receive Latin honors based on their overall or UB cumulative GPA (whichever is lower) on the following scale:

Average (based on 4.0 = A)
3.20 cum laude
3.50 magna cum laude
3.75 summa cum laude

To qualify for Latin honors, students must present a minimum of 90 credit hours of graded undergraduate coursework with a minimum of 30 credit hours completed at UB. Transfer work is included in determining the final overall grade point average.

Departmental Honors

Each department has the prerogative of awarding the designations "with highest distinction," "with high distinction," and "with distinction" to students who achieve a certain level of academic excellence and creativity. Criteria vary from department to department. Enrollment in a departmental honors program may be a prerequisite. Students should consult with their departmental advisor regarding the awarding of departmental honors.

Graduation

Students must meet the following criteria in order to have degrees conferred:

Application for Degree

Students must file an Application for Degree Form with Student Academic Records and Financial Services prior to the published deadline dates listed below:

June 1 graduation ..... February 1
September 1 graduation ..... July 1
February 1 graduation ..... October 1

Students are encouraged to file their applications well before the deadline dates. Degree forms received after the above deadlines will be processed for the next conferral date; the status of degree application is available on MyUB and your DARS report.

A final evaluation of general education and university degree requirements will be completed by a degree auditor in Academic Processing Services. Each academic department determines if academic major requirements have been met.

Students who find that they are not eligible to graduate on their applied degree conferral date must inform Student Academic Records and Financial Services in writing of their new degree conferral date. Note: Changing the "Expected Graduation Date" on MyUB is for financial aid purposes only. This will not update the Application for Degree.

When a degree is conferred, it is noted on the student's academic record (transcript) and diploma. Diplomas are mailed to the address supplied by the student within six weeks after the conferral date. Students should make certain that the university has their correct mailing address. To check or update student address information, refer to MyUB at *http://myub.buffalo.edu*. Grades will not be changed after degree conferral except when errors in the transcript occur.

Settlement of Obligations

All tuition, fees, late charges, and fines must be paid in order to receive diplomas or transcript services, including information about the student's program completion in any form.

Commencement

Formal commencement exercises are held each May. All students who have graduated the previous September or February, as well as students who have applied for June degree conferral, are eligible to participate in the ceremonies. Information regarding commencement activities is available from the Countdown to Commencement Web site at *http://www.commencement.buffalo.edu/*.

Graduation Rates

The four-year graduation rate of undergraduate students at the University at Buffalo approximates that of other major public research universities. Consistent with national trends, a number of University at Buffalo undergraduate students extend their graduation date to five years.

Registration

Academic Load

The normal load for undergraduate students is 15 credit hours per semester. Students are considered full-time when registered for 12 credit hours or more; part-time when registered for less than 12 credit hours. Students who wish to register for more than 19 credit hours require an override from an academic advisor.

Adding, Dropping, and Resigning Courses

Students may register for courses and make changes to their class schedule at any time between the start of their registration window through the end of the second week of classes. Courses dropped during this period will not appear on the students' transcripts.

Students modifying their course loads through the second week of classes should speak with Student Academic Records and Financial Services regarding financial responsibility and possible changes to financial aid eligibility. For information about withdrawing from courses after the second week of classes, see "Resignation from Coursework at the University."

Students who drop all courses during the second week of classes will not receive grades for such courses but will be responsible for a financial penalty.

Students who choose to resign from all courses after the second week of classes will be responsible for a financial penalty and receive a grade of "R" for each course resigned until the end of the resignation period.

Students can resign from courses using BIRD or via MyUB up until the end of the eleventh week of classes.

Students are not permitted to sit in a class without proper registration. Students who are officially auditing a class cannot have the audit grade option converted to a letter grade option retroactively nor are students permitted to register for a class after the end of the second week of classes.

Administrative Withdrawal from University Coursework

Students wanting to withdraw from the university after the resignation period must consult with their academic advisors for appropriate procedures, justification, and documentation to request an academic withdrawal (grade of "W"). Academic withdrawals are approved only in circumstances where impact to academic performance due to a personal or immediate-family medical event, disability, death, or active military service is documented sufficiently. In a policy approved by the Faculty Senate, requests for academic withdrawal that are based upon extraordinary circumstances are only considered for all the registered courses in a given semester. Requests for academic withdrawal made for selected courses in a given semester cannot be approved. Requests for academic withdrawal can only be approved if submitted within one semester of the event. If a student has already received a semester of academic withdrawals due to an ongoing medical event, he/she will not receive approval for a subsequent semester. However, if a student has received an academic withdrawal because of one medical event and then a different medical event occurs, such circumstances will be considered.

Additional information including specific registration procedures can be found on the Student Academic Records and Financial Services Web site at *http://src.buffalo.edu*.

Leave of Absence

Students who will not be enrolling at the university in an upcoming semester should file a Leave of Absence Form with the university in order to secure their status at the time the leave of absence begins. Students seeking a leave of absence must contact an academic adviser prior to the semester the leave is to begin, especially in cases when students intend to visit another college or university. Forms requesting a leave of absence are available on the Student Academic Records and Financial Services Web site at *http://src.buffalo.edu*.

A leave of absence may be granted for a maximum of two consecutive semesters but may be renewed for up to an additional year. No more than four semesters of leave of absence are allowed during an undergraduate career. Students may return before the end of their leave of absence, but cannot exceed the approved leave of absence period. Students who exceed the leave of absence period are required to re-enter UB via the Office of Admissions re-entry process.

Students must have at least 2.0 UB GPA to be eligible for a leave of absence. Those students who leave UB without having completed at least one semester (student with no UB GPA) are ineligible for a Leave of Absence and will have to file a re-entry form with the Office of Admissions in order to be re-admitted to the university.

Students convicted of felonies while enrolled at UB are not eligible for a leave of absence.

Students attending other colleges or universities during the approved leave of absence period are required to submit official transcripts of academic work from those institutions. Final transcripts must be submitted to the Office of Admissions at the beginning of the returning semester. College credits earned at other institutions during the leave period will be evaluated as transfer credit. These credits may satisfy major and/or university requirements. For assistance in course selection and subsequent articulation with UB coursework, students should contact an advisor and TAURUS, UB's course articulation system.

Students who are leaving the university to complete their last semester at another school and would like to graduate from UB do not need to file a Leave of Absence Form, however, they must file an "Application for Degree" before the appropriate deadline date.

Leaves of absence are not approved retroactively. Students who leave the university without an approved Leave of Absence will need to fill out a Re-entry Form with the Office of Admissions. Upon re-admittance, these students will be obligated to follow new academic policies, degree and university requirements, and re-apply to their academic majors.

Cross-Registration

Cross-registration permits full-time UB students to register at various colleges and universities as part of the Western New York Consortium without formal admission or additional tuition charges. Grades for courses taken through the consortium agreement are automatically forwarded to UB and applied to the student's permanent academic record. Only full-time students registered for at least 12 credit hours at UB are eligible to take an additional course(s) at a participating institution. Procedures for cross-registration can be found on the Student Academic Records and Financial Services Web site at *http://src.buffalo.edu*.

Registration in Graduate Courses for Undergraduate Credit

All undergraduate students who wish to take graduate courses for undergraduate credit should contact the academic department directly for approval procedures.

Permission to take graduate courses for undergraduate credit must be obtained by the end of the drop/add period of the respective semester or summer session. After the course is graded, the credit level will be changed from graduate to undergraduate.

Eligibility Criteria:

- Junior or senior standing and acceptance into an academic major or approved special major;
- A minimum GPA of 3.0 overall, including transfer credit and completion of prerequisites required for the graduate course; and
- Written recommendation from the course instructor that clearly states the academic necessity and rationale for taking the course, and the endorsement of the department chair.

Note: Undergraduates who register in graduate courses without having obtained prior permission cannot receive undergraduate credit for such courses.

Registration in Graduate Courses for Graduate Credit

Undergraduate students are eligible to take graduate courses for graduate credit (with permission from the academic department) if they meet the following criteria: junior or senior standing; acceptance into a major program; and a minimum GPA of 3.0.

Undergraduate students may take no more than two graduate courses (not to exceed a total of 8 credit hours during their undergraduate career).

These courses may not be applied to the minimum of 120 credit hours required for the bachelor's degree; however, they may later be applied toward a post baccalaureate degree program at UB. This 8-credit-hour limit does not apply to students currently enrolled in an SED-registered combined degree program.

Course Cancellation Notice

The University at Buffalo reserves the right to cancel any course or section in which the number of students enrolled is deemed insufficient or for which an instructor cannot be secured. All tuition and fees paid for such a course will be refunded. The right to set maximum limits on the number of students allowed to enroll in any particular course or section is also reserved.

Foreign Language Placement

Correct placement in foreign language courses is an important consideration for UB students and for teachers of foreign languages.

Students who have successfully completed three years or more of language study in high school (or the equivalent) or have passed a Regents comprehensive exam should not take a beginner-level course in that language (normally numbered 101 or 191).

Intensive review courses numbered 104 in Spanish, French and German are intended for students who wish to relearn the basics rather than move immediately into an intermediate-level language course, numbered 151/152 or 193/194. Courses with the 104 designation satisfy the General Education language requirement. Students capable of entering intermediate or higher level classes straight from high school should be encouraged to do so, and to consider this training as an important step toward study abroad and internationalization of their studies.

For other languages, students who have passed a Regents exam may begin their language study at UB with a second-semester course (numbered 102 or 192) but should consult with advisors and instructors to determine proper placement. Please note: Students may not receive credit for either 101/191 or 102/192 courses if they receive credit for a 104 course in the same language.

Students fluent in a language other than English or whose primary/secondary education was conducted in a language other than English should not take first- or second-year courses in that language.

If questions remain, students are urged to confer with their academic advisors.

Course Expectations

Academic Integrity

Preamble

Academic integrity is a fundamental university value. Through the honest completion of academic work, students sustain the integrity of the university while facilitating the university's imperative for the transmission of knowledge and culture based upon the generation of new and innovative ideas.

When an instance of suspected or alleged academic dishonesty by a student arises, it shall be resolved according to the following procedures. These procedures assume that many questions of academic dishonesty will be resolved through consultative resolution between the student and the instructor.

It is recommended that the instructor and student each consult with the department chair, school or college dean, or the Office of the Vice Provost of Undergraduate Education if there are any questions regarding these procedures.

Examples of Academic Dishonesty

Academic dishonesty includes, but is not limited to, the following:

- Previously submitted work. Submitting academically required material that has been previously submitted—in whole or in substantial

part—in another course, without prior and expressed consent of the instructor.

- Plagiarism. Copying or receiving material from any source and submitting that material as one's own, without acknowledging and citing the particular debts to the source (quotations, paraphrases, basic ideas), or in any other manner representing the work of another as one's own.
- Cheating. Soliciting and/or receiving information from, or providing information to, another student or any other unauthorized source (including electronic sources such as cellular phones and PDAs), with the intent to deceive while completing an examination or individual assignment.
- Falsification of academic materials. Fabricating laboratory materials, notes, reports, or any forms of computer data; forging an instructor's name or initials; resubmitting an examination or assignment for reevaluation which has been altered without the instructor's authorization; or submitting a report, paper, materials, computer data, or examination (or any considerable part thereof) prepared by any person other than the student responsible for the assignment.
- Misrepresentation of documents. Forgery, alteration, or misuse of any University or Official document, record, or instrument of identification.
- Confidential academic materials. Procurement, distribution or acceptance of examinations or laboratory results without prior and expressed consent of the instructor.
- Selling academic assignments. No person shall sell or offer for sale to any person enrolled at the University at Buffalo any academic assignment, or any inappropriate assistance in the preparation, research, or writing of any assignment, which the seller knows, or has reason to believe, is intended for submission in fulfillment of any course or academic program requirement.
- Purchasing academic assignments. No person shall purchase an academic assignment intended for submission in fulfillment of any course or academic program requirement.

Consultative Resolution

Step 1

If an instructor has reason to believe that a student may have committed an act of academic dishonesty, the instructor shall notify the student suspected of academic dishonesty by e-mail to the student's UB IT address with receipt requested, by certified mail return receipt requested, or by written notice delivered in person with a copy countersigned by the student and retained by the instructor within 10 academic days[1] of discovery of the alleged incident.

Once the alleged incident has occurred, the student may not resign from the course without permission of the instructor.

The instructor shall meet and consult with the student within 10 academic days[1] of the date of notification. If the student fails to attend the consultative meeting, the instructor has the authority to reach a decision and to impose a sanction (if appropriate) without the student consultation.

At consultation, the instructor shall inform the student of the allegations relating to the specific infringement, and the student shall be given a copy of the Academic Integrity Policy and Procedures.

At the request of either or both parties, the consultation may be recorded. A departmental note-taker (a staff or faculty member, but not a teaching assistant) may record consultation proceedings. The student must agree to the presence of the note-taker, and the student may also have a note-taker in attendance.

Step 2

If, after consultation with the student, the instructor believes the student did not commit an act of academic dishonesty, no sanctions may be imposed. The instructor will orally inform the student of that finding and, if the student so requests, will provide the student with a written statement confirming that finding. Procedures end.

If, after consultation with the student, the instructor believes the student did commit an act of academic dishonesty, the instructor has the authority to impose one or more of the following sanctions:

1. **Warning.** Written notice to the student that he/she has violated a university academic integrity standard and that the repetition of the wrongful conduct may be cause for more severe sanctions.
2. **Revision of Work.** Requiring the student to replace or revise the work in which dishonesty occurred. (The instructor may choose to assign a grade of "I" [Incomplete] pending replacement or revision of the work.)
3. **Reduction in Grade.** With respect to the particular assignment/exam or final grade in the course.
4. **Failure in the Course.** To be indicated on the transcript by a grade of "F" without comment.
5. **Such other reasonable and appropriate sanction(s)** as may be determined by the instructor (or committee at later levels of review) with the exception of those subsequently described under #6.
6. **Recommendation of any of the following University sanctions** (these require approval at the department, college/school, and Vice Provost levels).
    a. **Failure in the Course with Citation of Academic Dishonesty:** To be indicated by an "F" on the transcript with the notation that the grade of "F" was assigned for reason of academic dishonesty. Only the Vice Provost of Undergraduate Education or his or her designee may impose this sanction.
    b. **Suspension from the University:** For a definite term upon stated conditions. Only the University President or his/her designee may suspend a student from the University.
    c. **Expulsion from the University:** With comment on the transcript. Only the University President or his/her designee may expel a student from the University.

Step 3

The instructor shall provide the student with a copy of the decision, sanction(s) imposed, and the student's right to appeal that decision. The instructor's decision letter shall be sent to the student (via certified, return receipt mail), the department chair, and the Vice Provost of Undergraduate Education within 10 academic days[1] of the date of the consultation meeting. This statement of decision shall be included in the student's confidential file maintained in the Office of the Vice Provost of Undergraduate Education. The student shall have access to this file.

University Sanctions. If the sanctions imposed at the instructor level include recommendation of University sanctions (as listed in Step 2.6), departmental level procedures are required, and shall be initiated within 10 academic days1 of the department chair's receipt of the statement of decision.

Right to Appeal. The student may appeal the instructor's findings. The student's request for an appeal, including specification of the grounds for appeal, must be submitted in writing to the instructor and to the department chair no later than 10 academic days[1] after the instructor has notified the student of his or her decision.

Departmental Level Procedures

Step 1

The instructor and student have no more than 10 academic days[1] following the filing of the request for the initiation of departmental proceedings to deliver evidentiary materials to the department chair. The instructor and student shall each provide the department chair with a written statement of evidence supporting his or her position, any relevant documentation, and the names of potential witnesses.

If the department chair is the faculty member who has brought the academic dishonesty charge against the student, or if a department is unable to assemble a committee because of a limited number of faculty or students, direct consideration at the college or school level may be requested.

Pending resolution, the instructor shall temporarily assign a grade of "I" (Incomplete). This "I" grade can only be adjusted by resolution of the case.

Step 2

Upon review of relevant materials (including all evidence and statements communicated during consultation), if the department chair does not deem it necessary to consider further the circumstances of the case, the department chair will notify the student (via certified, return receipt mail), the instructor, the cognizant academic dean, and the Vice Provost of Undergraduate Education of his or her decision within 20 academic days[1] of receipt of the student's appeal or instructor's recommendation. If the sanctions imposed at this stage include recommendation of university sanctions (as listed in Consultative Resolution Step 2.6), decanal level procedures are required (see "Decanal Level Procedures").

Alternatively, if the department chair deems it necessary to consider further the circumstances of the case, he or she shall convene the Departmental Adjudication Committee within 20 academic days[1] of the date the department office received the request for initiation of departmental proceedings.

The department office shall convey all evidentiary materials to the Departmental Adjudication Committee, the student, and the instructor at the time the notice of the hearing is delivered. The student and the instructor shall be given at least 72 hours notice of the hearing.

At hearing(s), the Departmental Adjudication Committee shall provide sufficient opportunity for both principals to present their positions and shall allow each principal the right to question the presentation(s), written or verbal, of those who contribute information to the committee.

The hearing(s) shall be conducted in a fair and expeditious manner, but shall not be subject to the rules governing a legal proceeding. Each principal shall have the right to be present (under unusual circumstances, if either party is considered to pose a physical threat to the other or to the committee, the chair of the committee may request that either the student or instructor participate by phone) and to have one advisor present at all hearings.

The technical and formal rules of evidence applicable in a court of law are not controlling, and the committee may hear all relevant and reliable evidence that will contribute to an informed result. The Departmental Adjudication Committee shall only consider evidence presented at hearing(s). Discussion of a student's formerly alleged or documented academic misconduct shall not be admissible as evidence to determine whether the student is responsible for breaching the university's academic integrity code in the current case, although such history may be introduced and considered during the sanctioning phase. Hearings shall be confidential.

The Departmental Adjudication Committee shall provide the department chair with a written statement of recommendations and reasons for recommendations within 10 academic days[1] after the final meeting of the committee. Recommendations may include:

1. **Findings Overturned.** Finding that no academic dishonesty took place and that no sanctions should be imposed.
2. **Findings Sustained.** Finding that academic dishonesty occurred, and the committee is in agreement with the sanction(s) previously imposed or recommended.
3. **Finding of Different Sanction.** Finding that academic dishonesty occurred, but that the sanction(s) previously imposed or recommended are inappropriate and that greater or lesser sanction(s) should be imposed.

Step 3

The department chair considers the committee's findings and recommendations and renders a final decision. The department chair's decision and the student's right to appeal that decision shall be submitted in writing from the department chair to the student (via certified, return receipt mail), the instructor, the cognizant academic dean, and the Vice Provost of Undergraduate Education within 10 academic days[1] from receiving the Departmental Adjudication Committee's statement of recommendations.

The department chair shall forward the record of the matter consisting of all written communications, all written evidence, an audiotape or other record of the hearing, and its statement of recommendations to the Vice Provost of Undergraduate Education, where a confidential file will be maintained. The student shall have access to this file.

University Sanctions. If the sanction(s) imposed at the departmental level include recommendation of university sanctions (as listed in Consultative Resolution Step 2.6), decanal level procedures are required, and shall be initiated within 10 academic days1 of the dean's receipt of the statement of decision.

Right to Appeal. The student or the instructor may appeal the department chair's findings. The request for an appeal, including specification of the grounds for appeal, must be submitted in writing to the department chair and to the cognizant academic dean no later than 10 academic days1 after the department chair has notified the student of his or her decision.

Decanal Level Procedures

Step 1

The instructor and student have no more than 10 academic days1 following the filing of the request for the initiation of decanal level proceedings to deliver evidentiary materials to the cognizant academic dean. The instructor and student shall each provide the academic dean with a written statement of evidence supporting his or her position, any relevant documentation, and the names of potential witnesses.

Pending resolution, the temporarily assigned grade of "I" (Incomplete) will continue in place. This "I" grade can only be adjusted by final resolution of the pending case.

Step 2

Upon review of relevant materials (including all evidence and statements communicated during consultation), if the academic dean does not deem it necessary to consider further the circumstances of the case, the academic dean will notify the student (via certified, return receipt mail), the instructor, the department chair, and the Vice Provost of Undergraduate Education of his or her decision within 20 academic days[1] of receipt of the student's appeal or instructor's recommendation. If the sanctions imposed at this stage include recommendation of university sanctions (as listed in Consultative Resolution Step 2.6), a hearing at the decanal level is required, and procedures below shall be initiated within 20 academic days[1] of the academic dean's receipt of the department chair's statement of decision.

Alternatively, if the academic dean deems it necessary to consider further the circumstances of the case, he or she shall convene the Decanal Adjudication Committee within 20 academic days[1] of the date which the academic dean received the request for initiation of decanal level proceedings.

The academic dean's office shall convey all evidentiary materials to the Decanal Adjudication Committee, the student, and the instructor at the time the notice of the hearing is delivered. The student and the instructor shall be given at least 72 hours notice of the hearing.

At hearing(s), the Decanal Adjudication Committee shall provide sufficient opportunity for both principals to present their positions and shall allow each principal the right to question the presentation(s), written or verbal, of those who contribute information to the committee.

The hearing(s) shall be conducted in a fair and expeditious manner, but shall not be subject to the rules governing a legal proceeding. Each principal shall have the right to be present (under unusual circumstances, if either party is considered to pose a physical threat to the other or to the committee, the chair of the committee may request that either the student or instructor participate by phone) and to have one advisor present at all hearings.

The technical and formal rules of evidence applicable in a court of law are not controlling, and the committee may hear all relevant and reliable evidence that will contribute to an informed result. The Decanal Adjudication Committee shall only consider evidence presented at hearing(s). Discussion of a student's formerly alleged or documented academic misconduct shall not be admissible as evidence to determine whether the student is responsible for breaching the university's academic integrity code in the current case, although such history may be introduced and considered during the sanctioning phase. Hearings shall be confidential.

The Decanal Adjudication Committee shall provide the academic dean with a written statement of recommendations and reasons for recommen-

dations within 10 academic days[1] after the final meeting of the committee. Recommendations may include:

1. **Findings Overturned.** Finding that no academic dishonesty took place and that no sanctions should be imposed.
2. **Findings Sustained.** Finding that academic dishonesty occurred, and the committee is in agreement with the sanction(s) previously imposed or recommended.
3. **Finding of Different Sanction.** Finding that academic dishonesty occurred, but that the sanction(s) previously imposed or recommended are inappropriate and that greater or lesser sanction(s) should be imposed.

Step 3

The academic dean considers the committee's findings and recommendations and renders a final decision. The academic dean's decision and the student's right to appeal that decision shall be submitted in writing from the academic dean to the student (via certified, return receipt mail), the instructor, the department chair, and the Vice Provost of Undergraduate Education within 10 academic days[1] from receiving the Decanal Adjudication Committee's statement of recommendations.

The academic dean shall forward the record of the matter consisting of all written communications, all written evidence, an audiotape or other record of the hearing, and its statement of recommendations to the Vice Provost of Undergraduate Education, where a confidential file will be maintained. The student shall have access to this file.

University Sanctions. If the sanction(s) imposed at the decanal level include recommendation of university sanctions (as listed in Consultative Resolution Step 2.6), Vice Provostal level procedures are required, and shall be initiated within 10 academic days1 of the Vice Provost of Undergraduate Education's receipt of the statement of decision.

Right to Appeal. The student or the instructor may appeal the academic dean's findings, but only based on claims of limitations on, or violations of, applicable due process. Any such appeal request must describe the specific due process violation(s) claimed and must be submitted in writing to the academic dean and to the Vice Provost of Undergraduate Education no later than 10 academic days1 after the academic dean has notified the student of his or her decision.

Vice Provost Level Procedures

Step 1

The instructor and student have no more than 10 academic days[1] following the filing of the request for the initiation of Vice Provostal level proceedings to deliver evidentiary materials to the Vice Provost of Undergraduate Education. The instructor and student shall each provide the Vice Provost with a written statement of evidence supporting his or her position, any relevant documentation, and the names of potential witnesses.

Pending resolution, the temporarily assigned grade of "I" (Incomplete) will continue in place. This "I" grade can only be adjusted by final resolution of the pending case.

Step 2

Upon review of relevant materials (including all evidence and statements communicated during consultation), if the Vice Provost of Undergraduate Education does not deem it necessary to consider further the circumstances of the case, the Vice Provost will notify the student (via certified, return receipt mail), the instructor, the department chair, and the cognizant academic dean of his or her decision within 20 academic days[1] of receipt of the student's appeal or instructor's recommendation. If the sanctions imposed at this stage include recommendation of university sanctions (as listed in Consultative Resolution Step 2.6), the Vice Provost of Undergraduate Education will pursue appropriate steps to implement or seek implementation of such sanction(s).

Alternatively, if the Vice Provost of Undergraduate Education deems it necessary to consider further the circumstances of the case, he or she shall convene the Vice Provostal Adjudication Committee within 20 academic days[1] of the date on which the Vice Provost received the request for initiation of Vice Provostal level proceedings.

The Vice Provost shall convey all evidentiary materials to the Vice Provostal Adjudication Committee, the student, and the instructor at the time the notice of the hearing is delivered. The student and the instructor shall be given at least 72 hours notice of the hearing.

At hearing(s), the Vice Provostal Adjudication Committee shall provide sufficient opportunity for both principals to present their positions and shall allow each principal the right to question the presentation(s), written or verbal, of those who contribute information to the committee.

The hearing(s) shall be conducted in a fair and expeditious manner, but shall not be subject to the rules governing a legal proceeding. Each principal shall have the right to be present (under unusual circumstances, if either party is considered to pose a physical threat to the other or to the committee, the chair of the committee may request that either the student or instructor participate by phone) and to have one advisor present at all hearings.

The technical and formal rules of evidence applicable in a court of law are not controlling, and the committee may hear all relevant and reliable evidence that will contribute to an informed result. The Vice Provostal Adjudication Committee shall only consider evidence presented at hearing(s). Discussion of a student's formerly alleged or documented academic misconduct shall not be admissible as evidence to determine whether the student is responsible for breaching the university's academic integrity code in the current case, although such history may be introduced and considered during the sanctioning phase. Hearings shall be confidential.

The Vice Provostal Adjudication Committee shall provide the Vice Provost of Undergraduate Education with a written statement of recommendations and reasons for recommendations within 10 academic days[1] after the final meeting of the committee. Recommendations may include:

1. **Findings Overturned.** Finding that no academic dishonesty took place and that no sanctions should be imposed.
2. **Findings Sustained.** Finding that academic dishonesty occurred, and the committee is in agreement with the sanction(s) previously imposed or recommended.
3. **Finding of Different Sanction.** Finding that academic dishonesty occurred, but that the sanction(s) previously imposed or recommended are inappropriate and that greater or lesser sanction(s) should be imposed.

Step 3

The Vice Provost of Undergraduate Education considers the committee's findings and recommendations and renders a final decision. The Vice Provost's decision shall be submitted in writing to the student (via certified, return receipt mail), the instructor, the department chair, and the cognizant academic dean within 10 academic days[1] from receiving the Vice Provostal Adjudication Committee's statement of recommendations.

The Vice Provost shall file the record of the matter consisting of all written communications, all written evidence, an audiotape or other record of the hearing, and statements of recommendations to the Vice Provost of Undergraduate Education in the confidential file located in and maintained by the Office of the Vice Provost. The student shall have access to this file.

University Sanctions. If the sanction(s) imposed at the Vice Provostal level include implementation or recommended implementation of university sanctions (as listed in Consultative Resolution Step 2.6), implementation or recommended implementation of those sanctions shall be initiated within 10 academic days1 following the Vice Provost's decision in the matter.

No Right to Further Appeal. The decision of the Vice Provost of Undergraduate Education is final, and no further appeal is available.

Note: [1]Academic days are defined as weekdays when classes are in session, not including the summer sessions.

Class Attendance

Since the university desires to promote student responsibility, there is no general rule concerning student class attendance; however, every class instructor shall provide to students a course syllabus during the first week of class that specifies attendance policies and dates and times for classes, exams and all other required activities. Classes are to meet at the time and at the location listed in the official university course schedule, unless changed with the consent of the entire class. Instructors may take account of unexcused absences in determining course grades. Also, participation in various university activities (i.e. Athletics) may require mandatory class attendance.

Students may be justifiably absent from classes due to religious observances, illness documented by a physician or other appropriate health care professional, conflicts with university-sanctioned activities documented by an appropriate university administrator, public emergencies, and documented personal or family emergencies. The student is responsible for notifying the instructor in writing with as much advance notice as possible. Instructors may determine a reasonable amount of coursework that should be completed in order to makeup the student's absence. Students are responsible for the prompt completion of any alternative assignments.

In the event that a student absence situation cannot be resolved between the student and the class instructor, or either party is aggrieved by the process, appeal shall proceed sequentially to the department chair, unit dean, and finally the Vice Provost of Undergraduate Education.

For information regarding Procedures for Military Call-Up During the Semester, please refer to the Student Academic Records and Financial Services Center Web site at *http://src.buffalo.edu*.

Attendance on Religious Holy Days

On those religious holy days when members of a faith observe the expectation of their place of worship that they be absent from school or work, individual students will be excused from class without penalty if expressly requested. If such a requested absence results in a student's inability to fulfill the academic requirement of a course scheduled on that particular day, the instructor should provide an opportunity for the student to make up the requirement without penalty.

If classes, examinations, study, or work requirements are held on Friday after 4:00 p.m., or anytime on Saturday, similar or make up classes, examinations, study, or work requirements shall be made available on other days whenever it is possible and practicable to do so. Students shall not be charged any fees or experience any adverse or prejudicial effects due to absence from coursework due to religious observance.

In the event that a student absence situation cannot be resolved between the student and the class instructor, or either party is aggrieved by the process, appeal shall proceed sequentially to the department chair, unit dean, and finally the Vice Provost of Undergraduate Education.

Reading Days

The university calendar formally indicates the last day of classes. Faculty may not schedule classes after the last official day of classes.

University sanctioned Reading Days are incorporated into the university calendar in an effort to provide our students with additional examination preparation time before the commencement of final examination week.

Faculty who wish to conduct study sessions on Reading Days may do so if, and only if, these study sessions are offered on a voluntary basis, no attendance is taken, and no new information is introduced.

Final examinations shall be offered as officially scheduled, and not during university-sanctioned Reading Days.

Obstruction or Disruption in the Classroom

Consequences for Students Engaged in Disruptive Classroom Behavior

The university recognizes that faculty members are responsible for effective management of the classroom environment to promote conditions that will enhance student learning. Accordingly, instructors should set reasonable rules for classroom behavior and must articulate these rules, in writing, in materials provided to the students at the start of the semester. Fortunately, student obstructions or disruptions in UB classrooms are rare and seldom lead to disciplinary actions. The term "classroom disruption" means behavior that a reasonable person would view as substantially or repeatedly interfering with the conduct of a class. Examples could include persistently speaking without being recognized, continuing with conversations distracting the class or, in extreme cases, resorting to physical threats or personal insults.

Lawful, civil expression of disagreement with the instructor or other students is not in itself "disruptive behavior" and is not proscribed under these or any other regulations. However, when student conduct interferes with or prevents the conduct of classes or other university functions or when the safety of members of the campus community is endangered by threats of disruption, violence, or violent acts, the administration has approved the following course of actions:

- If a student is disruptive, he/she should be asked to stop and warned that continuing such disruptive behavior can result in academic or disciplinary action. Many students may be unaware that their behavior is disruptive; therefore, a private conversation with the student is often effective and preferable as an initial step.
- Should the disruptive behavior continue, the faculty member is authorized to ask the student to leave the classroom or site.
- A student may be dismissed from the course for the remainder of the semester, subject to Student Conduct Regulations and due process proceedings, as appropriate.
- If a student refuses to leave the area after being instructed to do so, the student should be informed that this refusal is a separate violation subject to additional penalties.
- If, in the instructor's best judgment, the behavior creates a safety risk or makes it impossible to continue class or function, the instructor should contact Public Safety to assist in removal of the student and/or may dismiss class for that day.

Behavioral Expectations in the Classroom

To prevent and respond to distracting behavior, faculty should clarify standards for the conduct of class, either in the syllabus, or by referencing the expectations cited in the Student Conduct Regulations. Classroom "etiquette" expectations should include:

- Attending classes and paying attention. Students should not ask an instructor in class to go over material they missed by skipping a class or not concentrating.
- Not coming to class late or leaving early. If a student has to enter a class late, he or she should do so quietly and should not disrupt the class by walking between the class and the instructor. Students should not leave class unless it is an absolute necessity.
- Not talking with other classmates while the instructor or another student is speaking. If a student has a question or comment, he or she should raise a hand, rather than starting a conversation about it with a neighbor.
- Showing respect and concern for others by not monopolizing class discussion. Students must allow others time to give their input and ask questions. Students should not stray from the topic of class discussion.
- Not eating and drinking during class time.
- Turning off electronic devices including cell phones, pagers, and beeper watches.
- Avoiding audible and visible signs of restlessness. These are both rude and disruptive to the rest of the class.
- Focusing on class material during class time. Sleeping, talking to others, doing work for another class, reading the newspaper, checking e-mail, and exploring the Internet are unacceptable and can be disruptive.
- Not packing bookbags or backpacks to leave until the instructor has dismissed class.

Course Syllabi

The course syllabus serves as a contract between the student and professor regarding course expectations and policies. The course syllabus should clearly communicate what the instructor expects of students and what students can expect from the instructor.

A course syllabus must be finalized and distributed to the class during the first week of classes.

All course syllabi should include, but are not limited to, the following components:

- **Course Description.** Statement of general course goals and the academic topics and content covered in the course.
- **Learning Outcomes.** Specific student-focused statements that specify what the student should be able to do at the completion of the course.
- **Course Requirements.** The number of papers, tests, and any other requirements, such as homework, attendance, class participation, laboratory assignments, and clinical performance, that will count toward the final grade. Deadlines for assignments should also be specified.
- **Academic Content.** What the student will be held accountable for, including required readings, lectures, films, field trips, etc.
- **Grading Policy.** How results from various requirements will be combined into a final grade: relative weightings, make-up policy for tests, etc. Grading Policies should also include:
  - Specification of the level of work must be completed in order to obtain specific letter grades (A-F) or a passing grade if the course is graded on a Pass/Fail basis; and
  - Reference to the university undergraduate Incomplete Policy (within this catalog) and any additional instructor requirements and comments regarding the use of Incomplete grades.
- **Office Hours.** Specification of when and where the instructor is available for consultation each week.
- **Academic Integrity.** Reference to the University Undergraduate Academic Integrity policy (within this catalog) and any additional instructor requirements and comments regarding academic dishonesty.
- **Disability Services.** Information about the university's Disability Services Office and the requirement to register with that office in order to receive accommodation for physical and learning disabilities.

During the semester, instructors are expected to conform to their course syllabi, except as unanticipated circumstances require deviation. In such situations, instructors should inform all students and provide an opportunity for discussion with students prior to making a final decision regarding changes in the course syllabus.

In addition, instructors are expected to recognize the following policies as appropriate in class situations:

- Criteria for the grading of papers should be made explicit before the paper is due; and the formats for examinations should be made explicit prior to their administration.
- Grading components, i.e., the activities whose assessments determine the course grade and the proportion of the grade determined by each, shall be specified in course syllabi. If these components are amended while the course is in progress, all students in the course shall be notified of the changes in writing or by electronic mail with sufficient time to adapt to and fulfill the changed requirements. Grades shall not be changed due to completion of additional grade components or assignments specified after the close of the session in which the course is offered.
- All corrected papers and examinations should be available for review by students. If a student believes that an error in grading has been made, he or she should be able to consult with the instructor and receive an explanation.
- Classes are to meet at the time and in the location listed in the official UB course schedule, unless changed with the consent of the entire class.

Special Course Opportunities

The University at Buffalo recognizes the importance of opportunities for students to integrate the material that they have learned during their time at UB and to participate in faculty research and other practical experiences. A distinctive aspect of undergraduate education at UB is the opportunity for students to work closely with faculty who are actively engaged in research and scholarship. Significant opportunities for participation in UB's local and regional public service mission are available through fieldwork, practica, internships, and related learning activities. As such, the following course numbers are reserved for special opportunities.

Many of these opportunities are considered to be tutorial coursework, conducted individually with a faculty member. The integrity of the degrees granted by UB requires that a substantial portion of the 120 credits of coursework required for these degrees be completed in lecture, seminar, and/or laboratory courses which have been reviewed and approved by appropriate faculty committees; therefore, no more than 18 credits of tutorial coursework can count toward the credits required for graduation with a bachelor's degree.

494 Senior Capstone Courses

These courses provide opportunities for students to integrate knowledge from lower-level courses. Frequently they are taught in seminar format; students work closely with faculty members and other students in their department to apply classroom knowledge to practical, real-world situations. Topics may vary, and usually focus on faculty and student interests.

495 Undergraduate Supervised Teaching

The university recognizes the value of using Undergraduate Teaching Assistants (UTAs), both as a learning experience for those who are teaching and in bringing their unique perspectives and approaches to the classroom. However, it is important that the following guidelines be followed to ensure quality teaching and learning experiences.

In order to serve as an Undergraduate Teaching Assistant, students must meet the following minimum requirements:

- Must have at least junior status (at least 60 credit hours completed);
- Must have an overall GPA of 3.0 or higher; and
- Must have received a grade of A- or better in the course in which they are to assist or in a course taken elsewhere that is equivalent.

UTA responsibilities:

- UTAs shall not regularly conduct scheduled class meetings, lectures or seminars. If the UTA is expected to make a presentation in a lab or recitation, the material shall be prepared or reviewed by the instructor.
- UTAs shall not assign final grades. If the UTA is expected to grade quizzes or exams, an explicit, annotated key shall be provided by the instructor, who will also supervise the UTA's grading. In all other matters where the UTA exercises judgment, that work shall be closely supervised by the instructor on a weekly basis.

Each course must be approved for UTA use prior to UTAs being appointed.

496 Internships

A number of departments offer hands-on experience in the field as part of their course offerings or degree requirements. Many of these experiences are described in the Academic Programs section of this catalog. Participation in these experiences is governed by policies placed by the offering department.

497 Departmental Honors

Each department has the prerogative of awarding the designations "with highest distinction," "with high distinction," and "with distinction" to students who achieve a certain level of academic excellence and creativity. Criteria vary from department to department. Enrollment in a departmental honors program may be a prerequisite. Students should consult with their departmental advisor regarding the awarding of departmental honors.

Departmental Honors programs must include a minimum GPA requirement and a senior thesis or project. Students completing the thesis or project component of the program should register for that department's 497 course.

498 Undergraduate Research

Students collaborate with faculty mentors on an ongoing faculty research or creative activity project, or conduct independent research under the guidance of a faculty member. This experience provides students with an inquiry-based learning opportunity and engages them as active learners in a research or creative activity setting. Either the student's own project or the faculty member's project to which the student is contributing should utilize the methods for creating new knowledge that are recognized in the field and

should result in a unique contribution to the field of knowledge. For more information about Undergraduate Research at UB, see the Center for Undergraduate Research and Creative Activity Web site (*http://curca.buffalo.edu*).

499 Independent Study

Students have the option of individualized student work under the guidance of a faculty member. Independent Study courses are intended to pursue topics that are not currently offered through regular coursework at UB. In some cases, independent study may be the focal point in the design of an individual program. In others, it may merely add desired depth or breadth to a student's formal degree program. To enroll in independent study, students must identify a member of the faculty or appropriate professional staff member willing to sponsor their work and gain approval of the appropriate department.

Grading

Explanation of Grades

The current grading system provides the following options.

Grade	Grade Points	Interpretation
A	4.0	High Distinction
A-	3.67	High Distinction
B+	3.33	Superior
B	3.0	Superior
B-	2.67	Superior
C+	2.33	Average
C	2.0	Average
C-	1.67	Average
D+	1.33	Minimum Passing Grade
D	1.0	Minimum Passing Grade
F	0.0	Failure
<F>	0.0	Failure for Reason of Academic Dishonesty
(grade)H	Grade points for the grade indicated prior to the H	Honors
I/default grade	None	Incomplete*
J	None	Reporting error (temporary grade)
N	None	No Credit-Official Audit (arranged at time of registration)
P	None	Pass
R	None	Resigned Officially
S	None	Satisfactory
U	None	Unsatisfactory
W	None	Administrative Withdrawal
***	None	No Credit/No Points
@	Not Applicable	Course Repeated for Average
#grade	None	Fresh Start or Second Chance Program-Credit Hours Not Counted

** See Incomplete Grades section on this page for explanation.*

Satisfactory/Unsatisfactory Grading

Students may opt to have a course graded as S/U in lieu of the traditional letter grade by completing the Request for Undergraduate S/U Form by the end of the second week of classes for the semester.

Students cannot select S/U grading for any course that is required for their major(s), or is a prerequisite for their major(s), or general education requirements.

No more than 25 percent of a student's UB credit can be graded S/U.

Instructors are not aware if students have selected the S/U option when they submit the earned letter grade. Academic Processing Services will convert the letter grade to S/U for those students who have opted for S/U grading at the end of the semester. Students may recover the letter grade earned in a course graded S/U if: (a) that course is required for their major(s), or is a prerequisite for their major(s) to which they have changed; or (b) they can document that a graduate or professional school to which they have applied demands the letter grade earned. (Once recovered, the grade can not be reverted back to S/U grading).

The letter grades equivalent to "U" (unsatisfactory) are "D+," "D," and "F." Students who have opted for S/U grading and earn a "D+" or "D" may petition their advisor to recover the letter grade if they wish to use the course toward degree requirements.

For S/U Grading Procedures, see the Academic Records and Financial Services Web site at http://src.buffalo.edu/pdf/s-u-grade.pdf.

Pass/Fail Grading

Pass/Fail is an instructor-designated option for courses that do not lend themselves to traditional letter grades. The grade of "F" (failure) will be included in the GPA.

Incomplete Grades

A grade of incomplete ("I") indicates that additional course work is required to fulfill the requirements of a given course. Students may only be given an "I" grade if they have a passing average in coursework that has been completed and have well-defined parameters to complete the course requirements that could result in a grade better than the default grade. An "I" grade may not be assigned to a student who did not attend the course.

Prior to the end of the semester, students must initiate the request for an "I" grade and receive the instructor's approval. Assignment of an "I" grade is at the discretion of the instructor.

The instructor must specify a default letter grade at the time the "I" grade is submitted. A default grade is the letter grade the student will receive if no additional coursework is completed and/or a grade change form is not filed by the instructor. "I" grades must be completed within twelve months. Individual instructors may set shorter time limits for removing an incomplete than the twelve-month time limit. Upon assigning an "I" grade, the instructor shall provide the student specification, in writing or by electronic mail, of the requirements to be fulfilled, and shall file a copy with the appropriate departmental office.

Students must not re-register for courses for which they have received an 'I" grade.

Applicable dates regarding the twelve-month provision:

Courses taken in (semester):	Will default in 12 months on:
Fall	December 31
Spring	May 31
Summer	August 31

The "I" must be changed to a grade before the degree conferral date if the student plans to graduate in that semester. At any time prior to the default date, students may elect to change the "I" grade to the default grade using the Grade Retrieval Form, available at http://src.buffalo.edu/forms/additionalstudentforms.shtml.

A default grade can be "A-," "B+," "B," "B-," "C+," "C," "C-," "D+," "D," or "F." (If a student selected an S/U grading option, it will replace the default letter grade when the grade defaults.)

"J" Grades

A "J" grade indicates a reporting error. Generally, reporting errors are corrected prior to the start of the next semester, however, a "J" may occasionally remain on the student's record. The student should immediately contact the instructor and/or department to correct the error; without correction, "J" grades automatically default to "F" grades at the end of the following semester.

"N" Audit

Students may audit a class only by permission of the instructor by utilizing the Audit Form for Undergraduates (available at: http://src.buffalo.edu/forms/additionalstudentforms.shtml). At the time of approval, instructors must communicate any conditions or requirements. Completed forms must be submitted to Academic Processing Services by the end of the second week of classes. Academic Processing Services will automatically record the audit grade on the transcript.

Instructors may terminate a student's audit status by forwarding a letter to Academic Processing Services and communicating to the student the grounds for termination. If a student's audit status is terminated by the

instructor, the "N" will be changed to "R" and the student will be notified of the change. Students may not repeat for credit courses in which they have received an "N" grade.

Changes of Grade

A grade other than "I" or "J" may be changed only to correct an error in the calculation or entry of the grade or as a result of re-evaluation of an end-of-session assignment or exam. Grade changes are made at the discretion of the instructor.

Instructors can change a grade by utilizing a Universal Change of Grade Form signed by the instructor, the department chair, and the appropriate Dean. Reasons for the change of grade must be fully explained and justified. Grade changes for courses taught by faculty who are no longer associated with UB, and are no longer available, may be submitted by officers of the units offering the courses in accordance with this policy, and must be fully explained and justified.

Grade changes must be made within twelve months of the end of the term in which the course was offered, i.e., the subsequent December 31 for Fall term courses, May 31 for Spring term courses, and August 31 for Summer term courses.

For "I" and "J" grades, which have been changed to a final grade, any change to the final grade must be made by the following May 31 if the final grade was entered in the Fall term, and by the following December 31 if the final grade was entered in the Spring or Summer term. Once a grade of "I" has defaulted to its accompanying permanent grade, however, the permanent grade may not be changed.

Grades shall not be changed more than one term subsequent to degree conferral, i.e., not later than the following December 31 for Spring or Summer conferral, and not later than the following May 31 for Fall conferral.

Definitions of Grading Terms

Grade Point Average (GPA)

The GPA is the ratio of the number of grade points earned to the number of graded credits. The GPA at UB is the ratio of the number of grade points earned at UB to the number of graded credits at UB. Only letter grades of "A," "A-," "B+," "B," "B-," "C+," "C," "C-," "D+," "D," and "F" are utilized in determining GPA. GPA is also referred to as QPA (quality point average).

Overall GPA

The overall GPA is the ratio of the number of grade points earned at all institutions (UB and transfer) to the number of graded credits at all institutions. The student's DARS report includes the overall average. DARS reports can be accessed via MyUB at *http://myub.buffalo.edu.*

Grade Points Earned

The number of grade points earned is the sum of the products of the credit hours associated with courses taken and the numerical equivalents of the grades earned for those courses.

Graded Credits

Graded credits are the total number of credits for which the student has earned a letter grade.

Dean's List

Full-time undergraduate students who demonstrate academic excellence by earning a grade point average (GPA) of at least 3.6 while completing a minimum of 15 credit hours, of which 12 are graded credits, are named to the Dean's List at the end of each semester. Letters of notification are sent to qualifying students in January for the previous fall semester; June for the previous spring semester; and a Dean's List notation will appear on the student's transcript.

Repeat Policy

A student may repeat a given course only once for the purposes of improving his or her grade point average. When a course is repeated, the credits earned count once for purposes of satisfying degree requirements and for purposes of calculating the student's GPA. When a course is repeated, the grade that is counted in calculating the GPA is the grade earned the second time, even if that grade is lower than the grade earned the first time. All courses taken and all grades earned will appear on the student's UB transcript. When a course has been repeated, the first grade appears on the UB transcript with a symbol and note indicating that it has been replaced by the later grade in the computation of the UB GPA.

Courses in which a student earns a passing grade during a registration beyond the second time may be applied toward General Education requirements. However, each academic department has the authority to decide whether or not courses may be repeated to meet program requirements. Prior to registering for a course for the second time or more, students must check with their major or minor department to determine if this is permissible.

The repeat policy does not apply, except by appeal, to courses that may have different content from semester to semester (e.g., Special Topics courses) and that are designed to be taken more than once for additional credits each time. The repeatable status of courses so designated is indicated in the course descriptions in the online version of this catalog. A later grade in such a course may replace an earlier grade only if the content of the two courses is essentially the same.

Students may not repeat courses in which they have a grade of Incomplete. However, after the "I" is changed to a grade the course may be repeated.

S/U grading is not an option for courses that are repeated.

Repeat Policy as It Applies to Transfer Work

Students may repeat at UB courses previously taken elsewhere. Credit is only awarded for the second taking of the course; therefore, the previously awarded transfer credit will be voided.

Students may repeat courses taken at UB at other institutions. If the student passed the UB course and repeats this course at another institution, no transfer credit will be awarded. The student's UB credit and UB GPA will not be affected. The benefits are only to demonstrate subject proficiency.

If the student failed the UB course and repeats this course at another institution, transfer credit will be awarded. The student's UB GPA, however, will not be affected.

Please note: For the Repeat Policy to take effect, transfer courses must first be articulated with UB courses. (Consult with a UB academic advisor and the course articulation listed at TAURUS for proper course selection.)

The Effect of the Repeat Policy on Prior Academic Standing

The repeat policy does not entitle any student to a retroactive degree, Latin honors, Dean's List placement, or other awards or recognition that would have been forthcoming had the student's GPA been computed under the new algorithm on a previous occasion. The historical record of students on probation or who have been dismissed academically in a past semester will not be changed as a result of the repeat policy.

The Effect of the Repeat Policy on Financial Aid

In order to maintain full-time status for financial aid purposes, students repeating a course should carry it in addition to 12 credit hours (full-time enrollment) for the semester in question.

Second Chance Policy

Students who have been readmitted to the University at Buffalo after having academic difficulty during previous attendance at UB may be eligible for forgiveness of previous grades. If approved:

1. All credits and grades earned prior to the student's break in attendance at UB will not be calculated into the student's cumulative UB credits and GPA;
2. All previously completed UB coursework cannot count towards degree requirements, major acceptance criteria, or course prerequisites; and
3. Although not included in the cumulative GPA calculation, grades will remain on the transcript.

Students must meet the following eligibility criteria:

1. Students must not have attended the University at Buffalo for at least two and a half academic years (five consecutive fall and spring semesters); and

2. Students must demonstrate maturity and ability to succeed academically, usually through activities during their time away from UB. Examples include, but are not limited to: successful study at another higher education institution, voluntary service, full-time work in a field related to the student's major, and honorable military service.

Applications must be submitted to the Scholastic Standards Committee prior to graduation. All Scholastic Standards Committee approvals are final and cannot be reversed. If denied, students may apply again after 12 months. Students may apply no more than three times. The Second Chance Policy can be applied to a student record only once during the student's academic career at UB, and cannot be applied if UB's previous academic forgiveness policy (Fresh Start) has already been applied.

Application of the Second Chance Policy may affect academic standing and financial aid. Reentering students should discuss their options with an academic advisor and a financial aid advisor. Applications must be reviewed and signed by an academic advisor.

The Second Chance Policy does not apply to transfer coursework.

Access to Grade Information

Students may obtain their grades for a specific semester, or a complete record of their grades, by calling the university's voice-response system, BIRD, at (716) 645-7800, or by accessing MyUB at *http://myub.buffalo.edu*.

Transcripts

Students may have official transcripts of their UB academic work sent at their request as indicated on the Transcript Request Form, which is available on MyUB (see *http://myub.buffalo.edu*) and the SARFS Web site (see *http://src.buffalo.edu/*). Forms may be faxed, mailed or dropped off at the Student Response Center at 232 Capen Hall. Official transcripts will not be released for students who have university financial obligations, including Bursar (B), Institutional Loan (G), Traffic (T), or Financial Obligation (N) checkstops/holds.

Mid-Semester Review

Students who are new to UB are often unaware of the academic norms of their new environment and their standing with respect to those norms. To help these students to acclimate successfully, instructors of first-semester students are asked to provide mid-semester evaluations using indicator codes for students' coursework. Indicator codes are Satisfactory (S), Unsatisfactory (U), or progress not yet available (I). Mid-semester progress reports received from faculty are transmitted to students and to students' advisors. Students are encouraged to promptly follow up with their instructors and advisors where performance is less than satisfactory.

Academic Standards Review

To maintain academic standards and determine eligibility for continued enrollment, financial aid, and participation in university activities, the University at Buffalo regularly reviews the academic records of all undergraduate students. This review addresses the quality of the student's studies as measured by the student's course grades.

Academic Good Standing

A student is in academic good standing if the student's cumulative UB grade point average (GPA) is 2.0 or greater and one of the student's most recent two consecutive semester GPAs at UB is 2.0 or greater.

A student in academic good standing is eligible for all university activities.

Academic Warning

Many students go through an adjustment period when beginning their baccalaureate studies at the university. Therefore, any student—freshman or transfer—whose first-semester GPA is less than 2.0 will be on academic warning in his/her second semester of study at the university.

Although a student on academic warning will be considered in good standing for purposes of participation in university activities, he/she may be subject to an advisement checkstop—a mandatory discussion with an academic advisor to help build an effective academic strategy before the student may complete any further registration activity.

Academic Probation

A student is on academic probation and not in academic good standing if his/her cumulative UB GPA is 2.0 or greater but his/her most recent two consecutive semester GPAs are less than 2.0.

A student is on academic probation and not in academic good standing if his/her cumulative UB GPA is less than 2.0 after two or more semesters of study at UB.

A student who is already on academic probation who continues to have less than a 2.0 UB GPA for another consecutive semester will be considered to be on continued academic probation.

A student who is already on continued academic probation and persists in having a cumulative UB GPA of less than 2.0 for the next consecutive semester and a quality point deficit of 20 points or less (after the completion of that semester) will be considered to be on continued academic probation.

A student who is already on continued academic probation and persists in having a cumulative UB GPA of less than 2.0 for the next consecutive semester and a quality point deficit of greater than 20 points (after the completion of that semester), but the most recent semester UB GPA is 2.0 or greater will be considered to be on continued academic probation.

Students may request, through their academic advisor, to have their UB summer session grades evaluated for purposes of reconsideration of their academic probationary status.

Students on academic probation are not eligible to participate in university activities. In addition, students on academic probation may be subject to an advisement checkstop—a mandatory discussion with an academic advisor to help build an effective academic strategy before the student may complete any further registration activity.

Academic Dismissal

A student enrolled at UB for two or more semesters who has a cumulative UB GPA less than 0.5 will be dismissed from the university regardless of his/her most recent semester GPA.

A student on continued academic probation who, at the completion of the next semester has a cumulative UB GPA less than 2.0, a grade point deficit greater than 20 points, and a GPA for the most recent semester less than 2.0 will be dismissed from the university.

Students are reviewed for academic dismissal at the end of each academic year, but any student—freshman or transfer—who begins study at UB in the spring semester may also be reviewed at the end of the following fall semester.

Each dismissed student will receive official notification via U.S. mail and his/her UB email account, and all future academic-year registrations will be removed and/or blocked. The student will not be allowed to reapply to UB and register for a period of at least one year.

A dismissed student may not register as a non-matriculated student in the fall or spring semester. A dismissed student may attend UB summer sessions.

A dismissed student may appeal the dismissal in writing to the Vice Provost of Undergraduate Education during a period of time specified in the dismissal letter.

Alternative Methods for Earning University Credit

After enrollment at UB, students may be awarded credit toward their university degree through methods other than UB course work. Examples are proficiency examinations and military training. All alternative credit types accepted by UB are described below. In some instances, this credit may shorten the time required to complete a degree, however this credit is not calculated for purposes of admission to UB and is apart from any transferred credit awarded during the admission process for courses completed at other institutions.

Credit awarded for transfer coursework earned after enrollment at UB is evaluated according to UB's transfer credit policy. Requests for evaluation of other alternative credit types accepted by UB should be made as follows. To request a credit award, students must present official documentation of their scores. Documentation should be sent to: Office of Admis-

sions, University at Buffalo, 12 Capen Hall, Buffalo, NY 14260-1660. All university-level exams, passed with the minimum score required by UB or better, are awarded elective credit with a "P" or pass grade. (Pass grades do not affect UB GPAs.) Exams and scores may also apply toward specific degree requirements if they have been articulated—that is, matched—to a specific UB course or requirement. UB articulation for frequently requested alternative credit exam types is available on the TAURUS Web site home page (see the Alternative/Exam Credit web page *http://tas.buffalo.edu/altexam/index.php*).

Credit will not be awarded for any exam or course content for which a student has previously received credit or if a student has previously completed advanced study beyond the level to be covered by the exam. If an exam or its articulated content is repeated, credit will only be awarded for the second taking. Evaluation of credit earned by alternative methods is based on articulated equivalencies in effect at the time the credit is requested. General guidelines for alternative credit types accepted by the university are described below.

Advanced Placement (AP)

An official score report from the College Board showing a minimum score of 3 on any AP examination will guarantee the student elective credit toward a UB degree and, in some cases, credit toward major and general education requirements as listed on the alternative exam credit—advance placement exam (AP) chart. Students should designate UB (SUNY Center Buffalo/School Code 2925) at the time they take an exam or if they later request that AP scores be sent to UB.

College Credit Recommendation Services

Credit may be awarded for certain non-collegiate training programs usually offered in agencies, professional associations, and public and private corporations. Students should contact the sponsor of the training program to determine whether the American Council on Education (ACE) has evaluated it for credit. The credit awarded for each program is based on ACE guidelines.

College-Level Examination Program (CLEP)

Students who submit official score reports showing they have earned the minimum required score on a CLEP exam, as determined by UB and listed on the alternative exam credit—college-level examination program (CLEP) chart, will be awarded elective or articulated credit toward their degree based on approved articulation. Prior to taking a CLEP examination, students currently enrolled at UB are advised to contact their advisor to determine whether credit can be awarded.

Defense Activity for Nontraditional Education Support (DANTES)

Students who submit official score reports showing they have earned the minimum required score, as determined by UB, on DANTES exams considered by UB to be university-level, will be awarded elective or articulated credit toward their degree. Approved articulation of DANTES exams is listed on the alternative exam credit—DANTES subject standardized exam chart.

Excelsior College

Excelsior (Regents) College offers college proficiency examinations that can be considered for elective or articulated college credit if they have been recognized and evaluated for credit by ACE.

General Certificate of Education (GCE)

A-level examinations, submitted as official score reports showing grades of "E" or better and at the Advanced Level or Advanced Subsidiary Level, will guarantee students elective credit for use toward their UB degrees, and in some cases toward major and General Education requirements. GCE exam articulation is available on the alternative exam credit—general certificate of education advanced level exam (GCE) chart. No credit is awarded for English language exams taken in a non-native English-speaking country or taken by a student whose native language is not English.

International Baccalaureate (IB)

Students who have completed an IB diploma with a score of 30 or higher will be awarded 30 credits toward their degree and, in some cases, toward their major and general education requirements. They should contact the office of Student Advising Services at (716) 645-6013 for more information.

Students who completed an IB diploma with a score of 29 or less and students who did not complete a diploma are guaranteed credit only for higher-level exams with scores of "5" or better. This credit will apply toward their degree and, in some cases, toward major and general education requirements. IB higher-level exam articulation is available on the alternative exam credit—international baccalaureate exam (IB) chart.

No credit is awarded for IB English language exams taken in a non-native English-speaking country or by a student whose native language is not English. A maximum of 30 credits may be awarded for an IB diploma or IB exams.

Military Credit

Elective credit for use toward a UB degree is assigned for basic training and for certain approved educational experiences in the armed forces.

Transfer Coursework

Once enrolled at the university, students intending to take coursework at another institution should first consult with an academic advisor. Most degree-level courses from accredited institutions will transfer with credit to the university. However, a faculty-approved articulation decision is needed to identify transferred courses that will apply toward major requirements. Prior approval must be obtained from an advisor to use transferred courses toward general education requirements. Course articulation for more than 2,000 colleges and universities is available on the university's transfer course articulation Web site, TAURUS at *http://taurus.buffalo.edu*.

To transfer credit to the university, students should request official transcripts from their previous institutions, including grades for all courses, be sent to the Office of Admissions, University at Buffalo, 12 Capen Hall, Buffalo, NY 14260-1660.

UB College Credit Examinations

Students who are enrolled (matriculated) at UB may earn credit for an examination administered by a UB department. These exams are comparable to final examinations. Departments determine whether to administer such examinations. Students applying for these exams must have an overall minimum GPA of 2.0 and cannot be graduating seniors. UB College Examination credit will not be awarded for exams that duplicate the content of a college course for which a student has already received credit. UB College Examination credit will not be awarded for exams if a student has completed more advanced study beyond the level to be covered by the exam. Students who wish to determine their eligibility for these examinations may obtain applications from the Student Response Center and then talk to their advisor and the academic department about eligibility for and availability of the exam. A fee is charged.

Study Abroad Programs

UB Study Abroad Programs offers students the experience of a lifetime: an academic program in another country that provides an education both within and outside the classroom. More than 10% of all UB undergraduate students participate in study abroad programs annually. All students are encouraged to explore the more than 400 study abroad programs in over 50 countries are available to UB students through State University of New York campuses. More information about study abroad opportunities is available at *http://www.buffalo.edu/studyabroad*.

Registration for UB and SUNY Study Abroad Programs

All University at Buffalo students studying abroad through UB or any SUNY school, as well as non-SUNY students participating in a University at Buffalo Study Abroad or Exchange Program, are registered by the UB Study Abroad Programs office for the academic credit hours to be earned during their studies abroad.

To be registered for a UB or SUNY study abroad program, a Study Abroad Registration Form provided by the UB study abroad office must be completed and submitted to Study Abroad Programs, University at Buffalo, 210 Talbert Hall, Buffalo, New York 14260-1604. Upon receipt of this form, the study abroad office will register the student in Overseas Programs (OPR) courses. Students should not preregister for any courses themselves. Fall, spring, or academic-year participants are nominally registered for 16 credit hours. This keeps these students in full-time status for billing and financial aid purposes, although the classes they actually complete abroad may represent more or less than 16 credit hours. When the actual credit hours taken and grades earned are received for the study abroad program, the number of credit hours will be corrected to reflect the number actually completed by the study abroad participant. Summer study abroad students will be registered for the number of hours they indicate on the Study Abroad Registration Form.

Registration for Non-SUNY Study Abroad Programs

University at Buffalo students electing to participate in non-SUNY study abroad programs are required to register through the UB Study Abroad Programs office. Students will be registered for a 0-credit hour Overseas Programs (OPR) course for the semester(s) of their participation. Students who will be abroad during the fall and/or spring semesters will also be registered for a leave of absence if they meet all leave of absence criteria. Registration for non-SUNY study abroad programs should be done as far in advance as possible once a student has decided to participate in the program. Study Abroad Programs keeps these students informed of events of importance to them while abroad, including U.S. government travel advisories for U.S. citizens, updates on events of relevance here at UB, and other pertinent information.

Students participating in a non-SUNY study abroad program should seek academic advisement prior to the semester the program is to begin. Students should also verify with the Office of Admissions prior to departure that the University at Buffalo will accept transfer credit from the institution/organization awarding the transcript for their intended study abroad program.

Upon conclusion of the overseas program, students are required to submit official transcripts from those institutions of academic work completed during the leave period. Such transcripts must be submitted to the Office of Admissions no later than the last day of the sixth week of the returning semester.

Overseas Course Approvals

Credits earned through any approved study abroad program may be applied toward general university graduation requirements and may fulfill specific degree requirements if the student obtains approval from his/her academic advisor (preferably prior to departure). Departments retain the final authority to decide what courses they will or will not apply toward a major or minor. It is often helpful to obtain course descriptions to take to the department for their review when requesting approval. Course descriptions are usually available from the sponsoring campus.

Study Abroad Grades and Credits on the UB Transcript

Since study abroad grades must be transmitted from the foreign institution to the sponsoring SUNY school, then to the student's home campus (if different from the sponsoring campus), and then translated into the SUNY system of grading and credit hours, these grades may take additional time to reach a student's transcript than grades for courses taken at the home campus. For this reason, if within six months following a study abroad program a student plans to graduate, apply to another school or graduate program, apply for grants or scholarships, or do anything else that requires him/her to document grades for the semester(s) he/she spent abroad, we strongly suggest that the student arrange to obtain a transcript of studies from the foreign institution before returning home, deliver this transcript to the sponsoring SUNY institution that sponsors the program, and ask that institution to expedite the processing of the transcript supplement. The UB Study Abroad Programs office will do everything possible to ensure rapid and efficient transmittal of the grades to the student's permanent record but cannot guarantee the time of their arrival.

UB Sponsored Programs

Course names, credit hours, and letter grades are recorded directly on students' official UB transcripts. These grades will be averaged into the GPAs.

SUNY Sponsored Programs

Students' official UB transcripts will indicate their participation in a SUNY-sponsored program abroad by listing the total credit hours earned and a pass/fail grade. A transcript supplement with course names, credit hours, and letter grades is added to the students' records. Grades are not averaged into the GPAs except for Latin Honors determination upon graduation.

SUNY Community College Sponsored Program

Participation in a two-year community college-sponsored program requires registration for 0 (zero) credit hours at the University at Buffalo, as well as registration at the sponsoring campus, and a leave of absence from UB. Credits earned abroad are shown as transfer credits on the students' official UB transcripts. An official transcript should be sent to UB's Office of Admissions upon conclusion of the program.

Non-SUNY Sponsored Programs

Participation in a non-SUNY-sponsored program requires students' registration for 0 (zero) credit hours at the University at Buffalo, as well as registration at the sponsoring campus. A leave of absence from UB is also required for students studying abroad on non-SUNY programs during fall and/or spring semesters. Prior to departure, students must ensure that UB's Office of Admissions will accept credit from the institution issuing the transcript. Credits earned abroad are shown as transfer credits on the official UB transcript. An official transcript should be sent to UB's Office of Admissions upon conclusion of the program.

Please Note: Although passing grades from participation in an Other-SUNY-sponsored program (a program sponsored by a SUNY unit other than UB) will not affect the UB grade point average (GPA) that appears on transcripts, these grades are calculated into the overall GPA by the degree auditors when the student applies for a degree for degree-granting and Latin Honors purposes only.

Credits from participation in any study abroad program cannot be used to fulfill the residency requirement at UB. To earn a degree from the University at Buffalo, a student must complete a minimum of 30 credit hours, the equivalent of one full year of study, at the university.

Student Finances

Cost of Attending UB

Below is an annual budget based on fall and spring semester attendance: Housing and board allowances, books and supplies, personal expenses, and transportation figures are estimates that vary for each student. The University at Buffalo reserves the right to modify or change the contents in the student budget without notice. In general, students should anticipate

that charges for budget expenses will rise approximately three percent each academic year.

Annual Undergraduate Student Cost of Attendance (based on estimated cost of University Housing)

In-State Tuition and Fees	$6,278
Out-of-State Tuition and Fees	$12,538
Housing Allowance	$6,048
Board Allowance	$3,358
Books and Supplies	$947
Personal Expenses	$820
Transportation	$607

Financial Aid

The University at Buffalo is a public institution whose mission is to provide affordable, high-quality education to all, regardless of economic background. The primary responsibility for meeting the cost of a college education rests with the student and the student's family. Financial aid programs are intended to supplement the family's contribution. Student Academic Records and Financial Services is dedicated to assisting students and parents in finding sources of funding to meet educational expenses.

Financial Aid Process

The process of awarding financial aid begins with a thorough analysis of the student's and/or student's family's financial situation, including income, assets, and number of family members in college. Financial need is defined as the difference between education cost and the expected family contribution (EFC).

The federal government, based on financial information provided on the Free Application for Federal Student Aid (FAFSA) form, determines the EFC. FAFSA on the Web (see *http://src.buffalo.edu/glossary/fafsa.shtml*) is a free, fast, secure, and easy way to complete the FAFSA.

Residents of New York State completing the FAFSA on the Web may use all of the information provided on the FAFSA to complete the Express TAP Application (ETA). Once the FAFSA on the Web application is completed and a submission confirmation is received, students should select the link provided for TAP on the Web. This is a special feature available only to New York State residents.

Once the expected family contribution and any unmet financial need are determined, staff members in Student Academic Records and Financial Services will use all resources available to determine an appropriate award package. There are three basic components of financial aid that comprise a student's individual award package: grants and scholarships (do not need to be repaid); jobs (on-campus federal work-study positions); and loans (must be repaid).

Students with specific questions or concerns should call (716) 645-2450, visit the Student Academic Records and Financial Services Web site (see *http://src.buffalo.edu*), or make an appointment to speak with a Financial Aid Advisor. Student Academic Records and Financial Services is committed to providing top-quality service to students.

To be considered eligible for financial aid, students must:

- Be in Good Academic Standing. (see *http://src.buffalo.edu/glossary/satisfactoryacademicprogress.shtml*)
- Be a US citizen or eligible non-citizen. (see *http://www.usimmigrationsupport.org/citizenship.html*)
- Be registered for selective service (males only). (see *http://www.sss.gov/regist.htm*)
- Be matriculated (officially enrolled in a degree program).
- Be registered for at least six credits (only Pell is prorated for less than 6 credits).
- Not be in default on a previous edcational loan.
- Have a high school diploma or General Education Development (GED) certificate.

Important facts to remember when applying for aid:

- Students must be registered for at least 12 credit hours to be considered full time. Students who are registered for less than 12 credit hours may impact their financial aid eligibility.
- Over-awards can occur because students are awarded other funds from outside agencies after they have accepted their award package. The over-award situation may cause aid packages to be reduced. If students receive additional funds not specified in their award letter, they should notify Student Academic Records and Financial Services in writing.
- Students who receive Title IV Aid (FDSL Loans, Perkins Loans, Pell, or SEOG Grants) and officially resign from the university should request and refer to a copy of the Policy Statement for the Adjustment of Financial Aid Due to Discontinuance of Study. Copies are available on the Student Academic Records and Financial Services Web site at *http://src.buffalo.edu.*
- Students who do not officially resign are considered in attendance for that semester and are responsible for all academic and financial liabilities.

Federal Financial Aid Requirements

Eligibility for Federal Financial Aid

Financial aid is contingent upon continued satisfactory academic progress. Each spring, a review of financial aid eligibility is conducted. Students are notified of their eligibility status via e-mail and may appeal these decisions.

Criteria—Performance and Progress

An undergraduate student is eligible for federal financial aid if the student is (1) in academic good standing as measured by the cumulative and semester GPA, and (2) is progressing toward the baccalaureate degree as measured by completed credit hours per semester according to the university's Federal Satisfactory Academic Progress standards. Students must complete their first bachelor's degree within 150 percent of the normal number of credits required to complete a bachelor's degree, not exceeding 180 credit hours.

Academic Performance

A student in good academic standing, or who is on academic probation, is eligible to receive federal financial aid if s/he meets the minimum GPA. Federal regulations require a student to have a GPA consistent with the university's graduation requirement. A student—either full-time or part-time—who fails to achieve the minimum cumulative GPA of 2.0 in all courses is placed on financial aid academic probation after the second semester of study. A student placed on academic probation is expected to raise his/her cumulative GPA to a minimum of 2.0 within a reasonable amount of time. If a student fails to raise his/her cumulative GPA to 2.0 or above, the student will be dismissed. Dismissed students are ineligible to receive federal financial aid. If a student is dismissed and re-admitted on probation, the student should consult with a financial aid advisor to determine eligibility for federal financial aid.

Academic Progress—Full-time Students

A full-time undergraduate student must demonstrate progress by accumulating academic credits at a rate that indicates graduation in a timely manner. A full-time student who is not progressing toward graduation at the defined rate will not receive federal aid regardless of his/her GPA. The federal aid progress criteria for a full-time student at the university are comparable to the credits-earned criteria for New York State aid, but extend to a five-year period of time as noted below.

Academic Progress—Part-time Students

Academic progress for part-time students who receive federal aid is defined as completion of credits earned according to the part-time chart. Cumulative completed credits are not a measure of progress for a part-time student. Semester credits earned are the sole measure of progress.

Financial Aid Eligibility

Part-Time Satisfactory Academic Progress Chart for Federal Financial Aid

CREDIT HOURS REGISTERED	CREDIT HOURS EARNED
11.9 - 6.0	50% must be completed
5.9 - 3.0	3 credit hours must be completed

Time Limits for Federal Aid Eligibility

Students must complete their first baccalaureate degree within 150 percent of the normal time required to complete a bachelor's degree, not to exceed 180 credit hours.

Full-Time Satisfactory Academic Progess Chart for Federal Financial Aid

SEMESTER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Credits Earned	0	3	9	21	33	45	60	75	90	105	120	135	150	165	180

State Aid (TAP) Requirements

To be eligible to receive a New York State Tuition Assistance Program (TAP) award, students must be full-time, matriculating New York State residents making satisfactory academic progress and not in violation of Program Pursuit (see below).

Once junior status is reached (normally the fifth semester of study or 60 credit hours or more earned), students must have a declared major on file. After receiving four TAP payments, students must have a minimum combined GPA of 2.0.

Repeated Courses

Repeated courses in which the student had already received a passing grade cannot be included to meet full-time study requirements for state-sponsored financial aid (TAP). Repeated courses may be counted toward full-time study requirements if a student repeats a failed course, if a student repeats the course for additional credit, or when a student has received a grade that is passing at the institution but is unacceptable in a particular curriculum.

Academic Progress Regulations, Including Program Pursuit

One standard has been established for each level of study (undergraduate, graduate, etc.) throughout the State University of New York: Program Pursuit. The Program Pursuit guidelines require completion of a prescribed percentage of coursework each semester for students receiving state financial assistance.

The chart in the previous column describes the Program Pursuit criteria to receive state financial assistance. The criteria may be subject to change based on the passage of a new state budget.

Waivers of Criteria for Satisfactory Academic Progress for New York State Financial Aid

If a student is ineligible to receive state financial aid, there is a provision for a one-time waiver of program pursuit satisfactory academic progress requirements. The waiver is to be used only in exceptional cases (e.g., illness, death in the family) in accordance with the TAP Waiver Policy Guidelines and Procedures as stated on the waiver application.

A waiver may not be granted because an Incomplete ("I") grade is received. If an Incomplete is included in the number of hours required to be completed during the previous semester (see chart), the student will not be eligible to receive the state award for the subsequent semester. The Incomplete grade must be changed to a letter grade by the end of the subsequent semester or the state award is lost for the semester in question.

Financial Aid and Study Abroad

Students participating in a study abroad program may be eligible to receive financial aid and should file a Free Application for Federal Student Aid (FAFSA) form. To be eligible, students must also be enrolled for a minimum of 6 credits and be matriculated in a degree program in which all credits earned on the study abroad program will be applied to degree requirements.

Students participating in a UB (or a four-year SUNY school) sponsored program, can apply the financial aid package (excluding work-study) to the costs of the study abroad program. For students participating in a program sponsored by an out-of-state school, there may be portions of the financial aid that cannot be applied to the out-of-state programs.

Student Records

Student Information

Student records are confidential and are released only to appropriate faculty and administrative offices. UB can release student records to any other college, prospective emplyer, or agency only with the written permission of the student. Student addresses or telephone numbers are released by the university unless the student has requested the non-release of directory information by submitting a Request for Directory and Information Release/Non-Release Form (see *http://src.buffalo.edu/forms/additionalstudentforms.shtml*).

STANDARD OF SATISFACTORY ACADEMIC PROGRESS FOR DETERMINING ELIGIBILITY FOR NEW YORK STATE STUDENT AID

Baccalaureate Degree Programs (Semester Calendar)

Before Being Certified for this Payment	**1st**	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**	**8th**	**9th**	**10th**
A student must have earned at least this many credits	0	3	9	21	33	45	60	75	90*	105*
With at least this GPA	0.0	1.10	1.20	1.30	2.0	2.0	2.0	2.0	2.0*	2.0*
And must receive a grade for this number of credit hours	0	6	6	9	9	12	12	12	12	12

** Noncredit remedial instruction can be counted toward a full-time academic load as set forth in 145-2.1 of the Commissioner's Regulations. The number of credit hours in this chart refers to work completed toward the degree.*

** The credit hours indicated above assume the student is enrolled in full-time academic study, a minimum of 12 credit hours per semester.*

***Only students in an approved EOP program are eligible for State Student Aid in their ninth and tenth semesters. Non-EOP students are only eligible for eight semesters of state aid.*

Telephone and Directory Information

Unless otherwise notified in writing, the university may release the following directory information upon request: student's name, current address, telephone number, e-mail address, major field of study, dates of attendance, and degrees and awards received; and the university will publish the student's name, major field of study, and e-mail address on its Internet-accessible directory.

Students who wish to block the release of directory information must notify Student Academic Records and Financial Services in person or in writing. (Students may print the form found at the Student Academic Records and Financial Services Web site at *http://src.buffalo.edu*.) Students should consider the consequences of blocking the release of directory information very carefully since, once blocked, all future requests for contact information from UB persons (on nonessential matters) and from non-institutional persons and organizations (such as scholarship organizations or prospective employers) will be denied.

Students should be aware that even if they decide to prevent release of their directory information, information will be shared within the university for educational and administrative purposes.

FERPA

For a complete statement of student rights under the Family Educational Rights and Privacy Act (FERPA), see Article 8 (Administrative Regulations) of the UB's Rules and Regulations.

The preceding information constitutes official public notice of the university's compliance with the Family Educational Rights and Privacy Act. Any student having questions about this should contact the Office of Student Affairs and Services, 542 Capen Hall, (716) 645-2982.

Student Conduct

Computing Policies

At UB, information technology is used to enhance teaching, support learning, enrich extracurricular experiences, and enable students to conduct business with the university online. To ensure that UB students are able to take advantage of innovative ways of learning, it is strongly recommended that students have a computer for their personal use in their living space. The university facilitates student computer purchases by offering volume-discount purchase programs, loan programs, financial aid, work-study, and other programs. To learn more about UB information technology resources and services, visit: *http://ubit.buffalo.edu.*

Computer and Network Acceptable Use Policies

Computing and acceptable use policies establish general rules for the use of computing and information resources. All students are expected to comply with these policies found at the IT Policies Web site: *http://www.itpolicies.buffalo.edu*. Penalties for non-compliance include loss of access to your UB IT account and to UB online resources.

Copyright Infringement and Illegal Downloading Policies

The distribution of copyrighted material from your computer, including music, games, and videos, for which you do not have the copyright owner's permission is a violation of federal law (DMCA) and university policy. Copyright owners frequently hire agents to scan university networks for copyrighted materials that are available to others from computer systems on the network. UB receives many notices from these organizations alleging copyright infringement. If you download and/or distribute unauthorized copies of copyrighted music recordings and movies, you are breaking the law and may be held legally liable for thousands of dollars in damages.

Please read UB's policy on illegal downloading and file sharing at http://www.itpolicies.buffalo.edu/dmca/.

Official University Communications and Required Use of UB E-mail Accounts

Many official university communications to students are sent to their permanent addresses or university e-mail addresses. Students are responsible for ensuring that their permanent addresses and e-mail addresses are kept up to date in the university's student information systems and that they regularly read their e-mail sent to their university *@buffalo.edu* e-mail account. New students must visit *http://mailcluster.acsu.buffalo.edu/newuser* to activate their UB e-mail account. Messages sent to inactive mailboxes are discarded.

Policies Governing Nondiscrimination

The following university policy statements are reissued in accordance with the requirements of various federal and state laws and regulations.

General Policy

No person, in whatever relationship with the State University of New York at Buffalo, shall be subject to discrimination on the basis of age, creed, color, handicap, national origin, race, religion, gender, sexual orientation, or marital or veteran status.

Sexual Harassment

Sexual harassment of employees and students, as defined below, is contrary to university policy and is a violation of federal and state laws and regulations.

Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when: (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or academic advancement; (2) submission to or rejection of such conduct by an individual is used as the basis for employment or academic decisions affecting such individual; (3) such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance, or creating an intimidating, hostile, or offensive environment.

No university employee of either gender shall impose a requirement of sexual cooperation as a condition of employment or academic advancement, or in any way contribute to or support unwelcome physical or verbal sexual behavior.

Any member of the university community who requires additional information or who wishes to make a complaint or receive a copy of the university procedures to be followed for complaints arising from matters related to the policies outlined above should contact the Office of Equity, Diversity, and Affirmative Action Administration, 406 Capen Hall, (716) 645-2266.

Academic Grievance Policy and Procedures for Undergraduate Students

It is an objective of the University at Buffalo to encourage the prompt consultative resolution of grievances of undergraduate students as they arise, and to provide orderly procedures for the formal consideration and resolution of complaints that cannot be resolved through consultation.

This set of procedures is designed to provide a well-defined, yet appropriately flexible structure that recognizes and reflects the issues unique to undergraduate education as well as academic areas common to all faculty-student or administrator-student relationships.

The following procedures provide a sequence of steps for the orderly and expeditious resolution of grievances initiated by undergraduate students. While recognizing and affirming the established principle that academic judgments and determinations are to be reached solely by academic professionals, it is the university's intention to secure, to the maximum extent feasible, equitable treatment of every party to a dispute. To that end, those who oversee the grievance process are charged to pay heed not only to issues of procedural integrity, but also to considerations of substantive fairness.

Grievance Definitions and Limits

Definition. A grievance shall include, but is not restricted to, a complaint by an undergraduate student:

- that he or she has been subjected to a violation, misinterpretation, or inequitable application of any of the regulations of the university, college or school, or department; or
- that he or she has been treated unfairly or inequitably by reason of any act or condition that is contrary to established policy or practice

governing or affecting undergraduate students at the University at Buffalo.

Time Limit. A grievance must be filed within one calendar year from the date of the alleged offense. The cognizant department chair, college or school dean, or the Vice Provost of Undergraduate Education may extend this time limit upon demonstration of good cause.

Consultative Resolution

Virtually all disputes originate in the department or comparable administrative unit and should, if feasible, be resolved through consultation between the disputants. The parties should meet and exert a good faith effort to resolve the dispute amicably.

At the request of either or both parties, the consultation may be recorded by a departmental note-taker (a staff or faculty member, but not a student). If a departmental note-taker is present during the consultation, the student may have an additional note-taker of his/her choosing also in attendance. Neither note-taker may actively participate in the consultation between the parties to the grievance other than to request repetition or clarification of statements made by either party during the consultation session.

It may be useful for the student to seek first the assistance of a student advocate (available through the Office of Judicial Affairs), his or her advisor, department chair, or director of undergraduate studies acting as a mediator to aid in evenhandedly resolving the dispute.

Formal Resolution

I. Departmental Level Review

Step 1

The student who believes that the grievance is severe or has been unable to obtain an acceptable consultative resolution should submit in writing to the cognizant department chair a description of his or her complaint, including any evidentiary or supporting materials, and a request for a hearing. (If the department chair is a party against whom the grievance is brought, either as a teaching faculty member or as chair, or where the chair can demonstrate that it will best serve the interests of the parties, direct petition to the school or college level may be pursued.)

Step 2

The cognizant department chair shall give the Department Grievance Committee and each principal a copy of the written grievance, including any evidentiary or supporting materials, and a copy of the Academic Grievance Policy and Procedures for undergraduate students.

Upon initial review of the materials and statements presented by the grievant, if the Department Grievance Committee finds the grievance does not have reasonable supporting grounds, the Committee shall conclude the grievance is without merit. In this initial review the Committee may also consider materials or statements submitted by the teaching faculty member(s) against whom the grievance is lodged. If the grievance is found without merit, the Committee shall report this denial to the cognizant department chair. The Committee shall complete this initial review within 15 academic days[1] of its receipt of the grievance. The cognizant department chair shall then submit a Statement of Decision to the principals (via certified, return receipt mail), the cognizant college or school dean, and the Vice Provost of Undergraduate Education within 10 academic days[1] of receipt of the Committee decision.

If the Departmental Grievance Committee finds the statement of grievance has reasonable supporting grounds, the Committee shall proceed with hearings as provided below.

Step 3

The Departmental Grievance Committee shall convene hearing(s) as necessary to allow both principals the opportunity to present their positions and shall allow each principal the right to question the presentation(s), written and verbal, of each principal and of others who contribute information to the Committee.

The hearing shall convene within 20 academic days[1] of the department's receipt of the written grievance. The cognizant department will notify principals at least 72 hours prior to the hearing.

The hearing(s) shall be conducted in a fair and expeditious manner, but shall not be subject to the rules governing a legal proceeding. Each principal shall have the right to be present (under unusual circumstances, if either party is considered to pose a physical threat to the other or to the committee, the chair of the committee may request that either the student or instructor participate by phone) and to have one advisor present at all hearings. Hearing(s) shall be conducted in confidence.

Step 4

The Departmental Grievance Committee shall submit its recommendation(s) in writing, including findings and reasons for the recommendations, to the cognizant department chair within 10 academic days[1] of the final meeting of the committee.

Step 5

The cognizant department chair shall consider the committee's findings and recommendations and render a final decision. This statement of decision and an indication of the student's right to appeal the department chair's decision (including time limit) shall be submitted, in writing, from the department chair to the principals (via certified, return receipt mail), the cognizant college or school dean, and the Vice Provost of Undergraduate Education within 10 academic days[1] from receiving the Department Grievance Committee's written recommendations.

Files shall be maintained in the offices of the cognizant dean and the Office of the Vice Provost of Undergraduate Education.

II. School or College Level Appeal

Step 1

If either principal wishes to appeal the departmental ruling, a written statement of the appeal, including any additional evidentiary or supporting materials, shall be filed within 10 academic days[1] of receipt of the department chair's statement of decision. The appeal shall be filed with the cognizant college or school dean. (If the dean is a party against whom the grievance is brought, either as a teaching faculty member or as dean, or where the dean can demonstrate that it will best serve the interests of the parties, a direct petition to the Vice Provostal level may be pursued.)

Step 2

Upon review of relevant materials, including all materials and statements presented during prior hearings, and materials and statements subsequently presented, if the cognizant college or school dean does not find that the statement of appeal provides reasonable grounds to appeal nor raises doubt concerning the adequacy of prior review, the dean may issue a formal decision regarding the appeal. In such a case, the dean shall submit a statement of decision to the principals (via certified, return receipt mail), the department chair, and the Vice Provost of Undergraduate Education within 20 academic days[1] of receipt of the appeal.

Alternatively, if the dean deems it necessary or appropriate to consider further the circumstances of the appeal, he or she shall convene a Decanal Grievance Committee within 20 academic days[1] of receipt of the appeal. The Decanal Grievance Committee shall include two faculty members and two undergraduate students. In those college/schools comprised of multiple academic departments, the Decanal Grievance Committee shall not include representatives from the department(s) involved in the grievance.

Step 3

The cognizant dean shall give the Decanal Grievance Committee and each principal a copy of the Academic Grievance Policy and Procedures for undergraduate students, the original written grievance, the written appeal to the school or college level, any supplemental materials and statements, and all documentation and recommendations from the departmental proceedings.

Step 4
The Decanal Grievance Committee shall convene hearing(s) necessary to allow both principals the opportunity to present their positions and shall allow each principal the right to question the presentation(s), written or verbal, of the principals as well as others who contribute information to the committee. The principals must be given at least a 72-hour prior notice of the hearing.

The hearing(s) shall be conducted in a fair and expeditious manner, but shall not be subject to the rules governing a legal proceeding. Each principal shall have the right to be present (under unusual circumstances, if either party is considered to pose a physical threat to the other or to the committee, the chair of the committee may request that either the student or instructor participate by phone) and to have one advisor present at all hearings. Hearing(s) shall be conducted in confidence.

Step 5
The Decanal Grievance Committee shall submit its recommendation(s) in writing, including findings and reasons for the recommendations, to the cognizant college or school dean within 10 academic days[1] of the final meeting of the committee.

Step 6
The cognizant dean shall consider the committee's findings and recommendations and render a final decision. This statement of decision and a statement of the student's right to appeal the dean's decision (including time limit) shall be submitted in writing from the dean to the principals (via certified, return receipt mail), the department chair, and the Vice Provost of Undergraduate Education within 10 academic days[1] from receiving the Decanal Grievance Committee's written recommendations.

Files shall be maintained in the offices of the cognizant dean and the Office of the Vice Provost of Undergraduate Education.

III. Vice Provost Level Appeal

On rare occasions, when all established procedures within a college or school have been exhausted, it may be appropriate for the Vice Provost of Undergraduate Education to consider a final university appeal. In general, the Vice Provost of Undergraduate Education will consider only those appeals that document violations of applicable due process in prior proceedings or which establish sound cause to believe that prior proceedings have resulted in a decision contrary to law, the Polices of the SUNY Board of Trustees, or policies of the University at Buffalo. In general, the Vice Provost of Undergraduate Education will not consider appeals that merely challenge the appropriateness of a judgment reached following a full and fair review of a matter by the department and the dean of the college or school.

Step 1
If either principal wishes to appeal the decision(s) of the college or school dean, the written statement of appeal, including any additional evidentiary or supporting materials, shall be filed within 10 academic days[1] of receipt of the statement of decision. The appeal shall be filed with the Vice Provost of Undergraduate Education.

Step 2
Upon review of relevant materials, including all materials and statements presented during prior hearings, and any materials and statements subsequently presented, if the Vice Provost of Undergraduate Education does not find that the statement of appeal provides reasonable grounds to appeal nor raises doubt concerning the adequacy of prior review, the Vice Provost of Undergraduate Education may issue a formal decision regarding the appeal. In such a case, the Vice Provost of Undergraduate Education will submit a statement of decision to the principals (via certified, return receipt mail), the department chair, and cognizant dean within 20 academic days[1] of receipt of the appeal.

Alternatively, if the Vice Provost of Undergraduate Education deems it necessary or appropriate to consider further the circumstances of the appeal, he or she shall convene a Vice Provostal Grievance Committee within 20 academic days[1] of receipt of the appeal.

Step 3
The Vice Provost of Undergraduate Education shall give the Vice Provostal Grievance Committee and each principal a copy of the Academic Grievance Policy and Procedures, the original written grievance, the written appeals to both the school/college and the Vice Provostal levels, any supplemental materials and statements, and all documentation and recommendations from the departmental and decanal proceedings. The Vice Provost of Undergraduate Education will notify principals at least 72 hours prior to the hearing.

Step 4
The Vice Provostal Grievance Committee shall convene hearing(s) as necessary to allow both principals the opportunity to present their positions and shall allow each principal the right to question the presentation(s), written or verbal, of the principals as well as others who contribute information to the committee.

The hearing(s) shall be conducted in a fair and expeditious manner, but shall not be subject to the rules governing a legal proceeding. Each principal shall have the right to be present (under unusual circumstances, if either party is considered to pose a physical threat to the other or to the committee, the chair of the committee may request that either the student or instructor participate by phone) and to have one advisor present at all hearings. Hearing(s) shall be conducted in confidence.

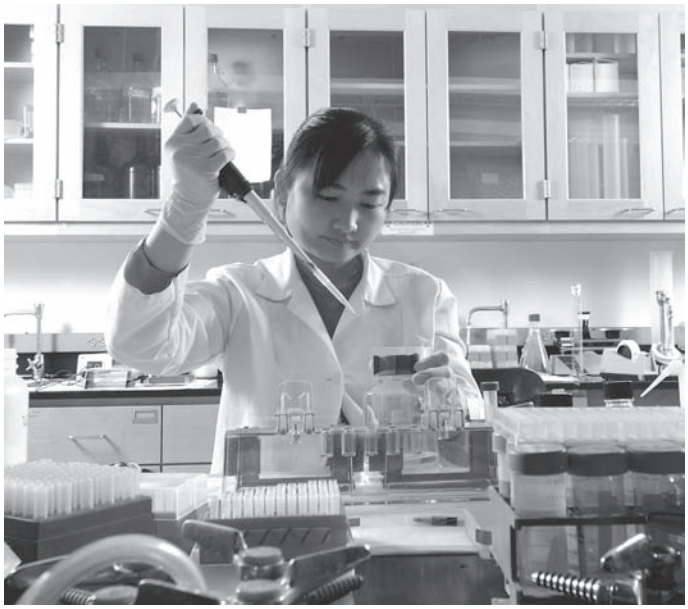
Step 5
The Vice Provostal Grievance Committee shall submit its letter of recommendations, including findings and reasons for recommendations, to the Vice Provost of Undergraduate Education within 10 academic days[1] after the final meeting of the committee.

Step 6
The Vice Provost of Undergraduate Education shall consider the committee's findings and recommendations and render a final university decision/determination. The Vice Provost's statement of decision shall be submitted in writing to the principals (via certified, return receipt mail), the department chair, and the cognizant academic dean within 10 academic days[1] from receiving the Vice Provostal Grievance Committee's written recommendations.

The determination/decision of the Vice Provost of Undergraduate Education constitutes the final step in the university review process and may not be further appealed.

Files shall be maintained in the office of the cognizant dean and the Office of the Vice Provost of Undergraduate Education.

Notes: [1] Academic days are defined as weekdays when classes are in session, not including the summer sessions.



Academic Programs of Study

ACCREDITATIONS

The University at Buffalo is accredited by the following associations:

- Middle States Commission on Higher Education, 3624 Market Street, Philadelphia, PA, 19104-2680, (215) 662-5605
- New York State Board of Regents

The university is a member of the following associations:

- American Council on Education
- Association of American Colleges and Universities
- Association of American Universities
- Association of Colleges and Universities of the State of New York
- National Association of State Universities and Land-Grant Colleges

In addition, the following schools and departments are accredited by the indicated associations:

ARCHITECTURE AND PLANNING

MArch (Architecture) – National Architectural Accrediting Board
MUP (Urban Planning) – Planning Accreditation Board

ARTS AND SCIENCES

BA (Art History, Media Study, Studio Art), BFA (Fine Arts), MA (Art, Humanities), MFA (Fine Arts, Media Study) – National Association of Schools of Art and Design

MA, PhD (Communicative Disorders and Sciences), AuD (Audiology) – American Speech-Language-Hearing Association

PhD (Clinical Psychology) – American Psychological Association

Psychology Internship – American Psychological Association

DENTAL MEDICINE

DDS (Dental Education), Advanced Certificate (Endodontics, Fixed Prosthodontics, Maxillofacial Prosthodontics, Oral and Maxillofacial Surgery, Oral and Maxillofacial Pathology, Orthodontics, Periodontics, Removable Prosthodontics) – Commission on Dental Accreditation, Dental and Auxiliary Educational Programs

GRADUATE SCHOOL OF EDUCATION

MLS (Library Studies) – American Library Association

MSC (Rehabilitation Counseling) – Council on Rehabilitative Education

PhD (Counseling/School Psychology) – American Psychological Association

ENGINEERING AND APPLIED SCIENCES

BS (Aerospace, Chemical, Civil, Computer, Electrical, Environmental, Industrial, Mechanical) – Accreditation Board for Engineering and Technology

LAW

JD (Law) – American Bar Association

MANAGEMENT

BS, BS/MBA, MBA, PhD (Business Administration) – American Assembly of Collegiate Schools of Business

MEDICINE AND BIOMEDICAL SCIENCES

BS, MS (Medical Technology) – National Accrediting Agency for Clinical Laboratory Sciences

BS (Nuclear Medicine Technology) – Joint Review Committee on Educational Programs in Nuclear Medicine Technology

MD (Medicine) – Liaison Committee on Medical Education

NURSING

BS, MS (Nursing) – Commission on Collegiate Nursing Education

MS (Nurse Anesthesia) – American Association of Nurse Anesthetists

PHARMACY AND PHARMACEUTICAL SCIENCES

PharmD (Pharmacy) – American Council of Pharmaceutical Education

PUBLIC HEALTH AND HEALTH PROFESSIONS

BS/MS (Occupational Science/Occupational Therapy) – Accreditation Council for Occupational Therapy Education of the American Occupational Therapy Association

DPT (Physical Therapy) – American Physical Therapy Association

SOCIAL WORK

MSW (Social Work) – Council on Social Work Education

DEGREE PROGRAM SUMMARY

Architecture and Planning
Architecture – BS
Environmental Design – BA

Arts and Sciences
African American Studies – BA
American Studies – BA
Anthropology – BA
Art History – BA
Asian Studies – BA
Bioinformatics and Computational Biology – BS
Biological Sciences – BA, BS, BA/MS
Biological Sciences/Dentistry – BS/DDS
Chemistry – BA, BS
Classics – BA
Communication – BA
Computational Physics – BS
  Computational Physics/Physics – BS/MS
Dance – BA, BFA
Economics – BA, BA/MA, BA/MS
  Economics/Business Administration – BA/MBA
English – BA
Film Studies – BA
Fine Art – BFA
French – BA
Geography – BA, BA/MA
Geological Sciences – BA, BS, BA/MA
German – BA
Global Gender Studies – BA
History – BA
Informatics – BS
Italian – BA
Linguistics – BA
Mathematical Physics – BS
Mathematics – BA, BS, BA/MA
Mathematics – Economics – BA
Media Study – BA

(Continued on next page)

Medicinal Chemistry – BS, BS/MS
Music – BA
Music Performance – MusB
Music Theatre – BFA
Philosophy – BA
Physics – BA, BS
Political Science – BA
Psychology – BA, BS
Social Sciences Interdisciplinary – BA, BS
  Social Sciences (Health & Human Services concentration)/
  Social Work Combined – BA/MSW
Sociology – BA
Spanish – BA
Special Major – BA, BS
Speech and Hearing Science – BA
Studio Art – BA
Theatre – BA, BFA

Engineering and Applied Sciences
Aerospace Engineering – BS
  Aerospace Engineering/Business Administration – BS/MBA
Chemical Engineering – BS
  Chemical Engineering/Business Administration – BS/MBA
Civil Engineering – BS
  Civil Engineering/Business Administration – BS/MBA
Computer Engineering – BS
Computer Science – BA, BS, BS/MS
Electrical Engineering – BS
  Electrical Engineering/Business Administration – BS/MBA
Engineering Physics – BS
Environmental Engineering – BS
Industrial Engineering – BS
  Industrial Engineering/Business Administration – BS/MBA
Mechanical Engineering – BS
Mechanical Engineering/Business Administration – BS/MBA

Management
Business Administration – BS, BS/MBA

Medicine and Biomedical Sciences
Biochemistry – BS
Biomedical Sciences – BS
Biophysics – BS
Biotechnology – BS
Medical Technology – BS
Nuclear Medicine Technology – BS
Pharmacology and Toxicology – BS, BS/MS

Nursing
Nursing – BS

Pharmacy and Pharmaceutical Sciences
Pharmaceutical Sciences – BS, BS/MS
Pharmacy – PharmD

Public Health and Health Professions
Exercise Science – BS
Exercise Science/Nutrition – BS/MS
Occupational Science/Occupational Therapy – BS/MS
Physical Therapy – DPT

APPROVED MINORS

African American Studies
American Studies
Ancient Greek Language and Literature
Ancient History
Ancient Latin Language and Literature
Anthropology
Architecture
Art History
Asian Studies
Biological Sciences
Chemistry
Chinese
Classical Civilization
Classical Languages and Literatures
Comparative Literature
Computer Science
Earth Systems Science
Economics
Education
English
Environmental Design
Environmental Studies
French
General Geography
Geographic Information Systems and Cartography
Geography of International Business and World Trade
Geological Sciences
German
Global Gender Studies
Health and Wellness
History
Italian
Japanese
Korean
Latina/Latino Studies
Linguistics
Logic
Mathematics
Media Study
Medicinal Chemistry
Mediterranean Archeology
Music
Music Performance
Pharmaceutical Sciences
Pharmacology and Toxicology
Philosophy
Philosophy of the Arts
Philosophy of Law
Philosophy of Professional Ethics
Philosophy of Science
Physics
Polish Studies
Political Science
Sociology
Spanish
Speech and Hearing Science
Studio Art
Theatre
Urban and Regional Analysis

Aerospace Engineering

Department of Mechanical and Aerospace Engineering

School of Engineering and Applied Sciences

309 Furnas Hall
North Campus
Buffalo, NY 14260-4400
Phone: (716) 645-2593, ext. 2200
Fax: (716) 645-2883
Web site: www.mae.buffalo.edu/

Andres Soom
Chair

John L. Crassidis
Director of Undergraduate Studies

For a listing of Aerospace Engineering faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The four-year undergraduate program leading to the BS degree in aerospace engineering prepares students for careers in aerospace and related technologies. This includes the traditional aeronautics and astronautics applications (e.g., subsonic and supersonic aircraft, satellites, space shuttle, space station), as well as aerospace-related component development (design of structures, devices, and instruments) and vehicle and propulsion system design.

Because of the rapid pace of development and the extreme diversity of the aerospace field, the undergraduate aerospace engineering program stresses knowledge of the profession's fundamentals—the foundation for lifelong learning. While many students enter industry directly after completing the BS program, a significant number elect to pursue graduate work in engineering or other fields.

The objectives are to prepare graduates for a career or advanced studies in aerospace engineering, applying the concepts and principles of mathematics, science and engineering; provide graduates with the technical skills needed for a career or advanced studies in aerospace engineering; and provide graduates with the professional skills and societal awareness necessary for the practice of aerospace engineering. During the first and second years, students will be provided with broad knowledge in applied mathematics, physics, and the engineering sciences during the first and second years. During the third and fourth years, students build upon this foundation by learning the specialized topics of aerodynamics, propulsion, structures, vehicle design, and stability and control.

Degrees Offered

- **Undergraduate:** BS
- **Combined:** BS/MBA
- **Graduate:** MS, PhD

Advisement

Students are normally assigned a faculty mentor when they enter their freshman year. All engineering students are also encouraged to take advantage of advisement offered by the SEAS Office of Undergraduate Education in 410 Bonner Hall. Entering freshmen are offered a wide range of special advisement opportunities and academic help sessions by the Office of Undergraduate Education.

Transfer Policy

Transfer students must first apply to the university and meet the university transfer admission requirements. See School of Engineering and Applied Sciences for Transfer Policy.

AEROSPACE ENGINEERING—BS

Acceptance Criteria

See the School of Engineering and Applied Sciences for Acceptance Information. Students may apply for admission to Aerospace Engineering when they enter the University as freshmen, as transfer students, or later in their academic careers. To remain in Aerospace Engineering and to be permitted to take upper-level (300/400 level) Aerospace Engineering Courses, students must satisfy the following requirements:

1. Successful completion of the following five courses with at least a 2.2 GPA: MTH 141, MTH 142, PHY 107, MAE 204, EAS 207. If a course is repeated, the grade that is counted is the grade earned the second time, even if this grade is lower than the grade earned the first time.
2. Minimum overall and UB GPA of 2.0 to be considered in academic good standing with the University.

Advising Notes

Students must meet minimum GPA requirements in engineering as specified by the Dean of Engineering to graduate from the program. See the Academic Requirements section of the School of Engineering and Applied Sciences for Acceptance Requirements.

Required Courses

CHE 107 General Chemistry for Engineers
EAS 140 Engineering Solutions
EAS 207 Statics
EAS 208 Dynamics
EAS 209 Mechanics of Solids
EAS 230 Higher Level Language
EE 200 EE Concepts/Nonmajors
MAE 177 Introduction to Engineering Drawing and CAD
MAE 204 Thermodynamics
MAE 277 Introduction to Mechanical and Aerospace Engineering Practice
MAE 334 Introduction to Instrumentation and Computers
MAE 335 Fluid Mechanics
MAE 336 Heat Transfer
MAE 338 Fluid and Heat Transfer Laboratory
MAE 340 Systems Analysis
MAE 376 Numerical Methods
MAE 377 Product Design in a CAD Environment
MAE 381 Engineering Materials
MAE 385 Engineering Materials Laboratory
MAE 415 Analysis of Structures
MAE 416 Aerospace Structures
MAE 422 Gas Dynamics
MAE 423 Introduction to Propulsion
MAE 424 Aerodynamics
MAE 425 Spacecraft Dynamics and Control
MAE 434 Aircraft Design
MAE 436 Flight Dynamics
MAE 451 Design Process and Methods
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 107 General Physics I
PHY 108/PHY 158 General Physics II/Lab
One technical elective
One science elective

Summary

Total credit hours required for the major.....114

See Baccalaureate Degree Requirements for general education and remaining university requirements.

(Continued on next page)

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 107, EAS 140, MTH 141
Spring—EAS 230, MAE 177, MTH 142, PHY 107

SECOND YEAR
Fall—EAS 207, MAE 204, MAE 277, MTH 241, PHY 108/PHY 158
Spring—EAS 208, EAS 209, EE 200, MTH 306, one science elective

THIRD YEAR
Fall—MAE 334, MAE 335, MAE 376, MAE 377, MAE 381
Spring—MAE 336, MAE 340, MAE 385, MAE 422

FOURTH YEAR
Fall—MAE 338, MAE 415, MAE 423, MAE 424, MAE 436, MAE 451
Spring—MAE 416, MAE 434, MAE 425, one technical elective

Electives and Course Groupings

Technical Electives

- Engineering, mathematics, or science courses at the 300/400 level that are not required courses. Any course that substantially duplicates the material presented in another course that is being counted toward the degree cannot be used to satisfy the TE requirement.

Science elective

- CHE 108 with lab
- PHY 207 with lab

AEROSPACE ENGINEERING/BUSINESS ADMINISTRATION—BS/MBA

Acceptance Criteria

Good standing as an aerospace engineering undergraduate and acceptance as a graduate student by the School of Management.

Advising Notes

Students apply directly to the School of Management during their junior year to be admitted to the MBA Program. The MBA courses shown below are representative of those currently required but may change prior to a student's acceptance into the MBA Program. Students should confirm MBA program requirements with the School of Management upon their application and acceptance to that program.

Required Courses

CHE 107 General Chemistry for Engineers
EAS 140 Engineering Solutions
EAS 207 Statics
EAS 208 Dynamics
EAS 209 Mechanics of Solids
EAS 230 Higher-Level Language
CIE 308 Engineering Statistics
EE 200 EE Concepts/Nonmajors
MAE 177 Introduction to Engineering Drawing and CAD
MAE 204 Thermodynamics
MAE 277 Introduction to Mechanical and Aerospace Engineering Practice
MAE 334 Introduction to Instrumentation and Computers
MAE 335 Fluid Mechanics
MAE 336 Heat Transfer
MAE 338 Fluid and Heat Transfer Laboratory
MAE 340 Systems Analysis
MAE 376 Applied Math for Mechanical and Aerospace Engineers
MAE 377 Product Design in a CAD Environment
MAE 381 Engineering Materials
MAE 385 Engineering Materials Laboratory
MAE 415 Analysis of Structures
MAE 416 Aerospace Structures
MAE 422 Gas Dynamics
MAE 423 Introduction to Propulsion
MAE 424 Aerodynamics
MAE 425 Spacecraft Dynamics and Control
MAE 434 Aircraft Design
MAE 436 Flight Dynamics
MAE 451 Design Process and Methods
MGA 604 Financial Analysis and Reporting
MGB 601 Behavioral and Organizational Concepts for Management
MGT 601 Ethics and Corporate Finance
MGF 631 Financial Management
MGM 625 Marketing Management
MGO 630 Operations and Service Management
MGO 641 Strategic Management
MGA 609 Management Accounting
MGG 635 Business Communications
MGE 601 Economics for Managers
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 107 General Physics I
PHY 108/PHY 158 General Physics II/Lab
One science elective
Six MBA electives
One MBA practicum

Summary
Total required credit hours for the undergraduate portion.....111
Total required credit hours for the BS/MBA 162

See Baccalaureate Degree Requirements for general education and remaining university requirements

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 107, EAS 140, MTH 141
Spring—MAE 177, MTH 142, PHY 107

SECOND YEAR
Fall—EAS 207, MAE 204, MAE 277, MTH 241, PHY 108/PHY 158
Spring—EAS 208, EAS 209, EE 200, MTH 306, one science elective

THIRD YEAR
Fall—MAE 334, MAE 335, CIE 308, MAE 377, MAE 381
Spring—MAE 336, MAE 340, MAE 385, MAE 422, MAE 376

FOURTH YEAR
Fall—MAE 338, MAE 423, MAE 424, MAE 436, MGA 604, MGB 601, MGT 601, MGF 631
Spring—MGF 631, MGM 625, MGO 630, MGO 641, MGA 609, MGG 635

FIFTH YEAR
Fall—MAE 415, MAE 451, MGE 601, three MBA electives, one MBA practicum
Spring—MAE 416, MAE 434, MAE 425, three MBA electives

Contact the School of Management for elective options.

Refer to the School of Management's MBA Handbook for requirements for MBA candidates.

Upon completion, you will be awarded a BS diploma and an MBA diploma, with a transcript notation that these degrees were awarded as part of a combined degree program.

African American Studies

Department of African American Studies

College of Arts and Sciences

732 Clemens Hall
North Campus
Buffalo, NY 14260-4680
Phone: (716) 645-2082/2083
Fax: (716) 645-5976
Web site: www.africanamericanstudies.buffalo.edu/

Keith Griffler
Chair

For a listing of African American Studies faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

African American Studies is an interdisciplinary field that explores the history as well as the political, economic, social and cultural life of people of African descent. The department's major and minor ground students in a curriculum that is global in scope, covers a broad spectrum of topics in the arts, humanities, and social sciences, and provides a comprehensive liberal arts education.

Degrees Offered

- **Undergraduate:** BA
- **Graduate:** MA, PhD American Studies

Degree Options

The department encourages students to complete either a joint or double major or a double degree.

- Joint Major—Students complete 67 percent of the requirements of both departments.
- Double Major—Students complete all requirements of both departments.
- Double Degree—Students complete 30 credit hours above the bachelor-level requirements.

Advisement

Students who have advanced placement credit in African American Studies may substitute those courses for comparable AAS courses.

Transfer Policy

Students who wish to transfer to the University at Buffalo and pursue a major in African American Studies must first be accepted by the university's admissions office before applying to the department. Students are referred by Student Advising Services to this department so that all transfer credits can be evaluated and applied. The UB Department of African American Studies attempts to keep current with the curricular offerings of a number of feeder institutions. Because these offerings are subject to change, however, transfer students are advised to bring course descriptions and syllabi to the director of undergraduate studies.

AFRICAN AMERICAN STUDIES—BA

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.0 in the prerequisite course.

Prerequisite Courses
AAS 100 Introduction to African American Studies

Required Courses
AAS 280 Survey of African Studies
AAS 358 African Diaspora
AAS 355 Race, Class and Society

Core Interdisciplinary Requirement (majors choose 1):
AAS 314 Black Philosophy
AAS 395 Black Gender Studies

Core Special Topics Requirement (majors choose 1):
AAS 417 Black Aesthetics
AAS 425 Liberation Struggles

Seminar Requirements
AAS 320 Research Methods in African American Studies
AAS 498 Senior Seminar

Required electives
Four AAS courses (12 credit hours), no more than 3 credit hours of Independent Study, and no more than 3 credit hours from outside AAS without permission of the Director of Undergraduate Studies. No more than 9 out of the 12 credits can be at the 100 and 200 level.

Summary
Total required credit hours for the major.....36

See Baccalaureate Degree Requirements for general education and remaining university requirements.

AFRICAN AMERICAN STUDIES—MINOR

Acceptance Criteria
Minimum GPA of 2.0 overall.
Completion of one of the following: AAS 100, AAS 260, AAS 261, AAS 270, or AAS 280.

Required Courses
Two of the following courses:
AAS 100 Introduction to African American Studies
AAS 260 Major Issues in African American Studies
AAS 261 Survey of the African American Experience
AAS 270 Major Issues in Caribbean Studies
AAS 280 Survey of African Studies
Four 200/300/400-level AAS courses

Total required credit hours for the minor 18

AFRICAN AMERICAN STUDIES/EDUCATION—MINOR

Acceptance Criteria
Minimum GPA of 3.0 overall. Before attempting this minor, students must have completed all requirements for an African American studies major and any other courses stipulated by the Teacher Education Institute. An application for the minor should be filed with the student's advisor. Additionally, an application for admission to the teacher certification program must be filed with the Teacher Education Institute, 375 Baldy Hall, North Campus.

American Studies

Department of American Studies

College of Arts and Sciences

1010 Clemens Hall
North Campus
Buffalo, NY 14260-4630
Phone: (716) 645-2546
Fax: (716) 645-5977
Web site: cas.buffalo.edu/centers/cfta

Donald Grinde
Chair

For a listing of American Studies faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

A major or minor in American studies offers the opportunity to take an interdisciplinary and cross-cultural approach to the understanding of the Americas. Faculty and students pursue ideas and carry out research projects that cross the boundaries separating nations, languages, media, and academic departments. They consider multiple representations of the Americas, using official documents, literature, oral traditions and histories, and the visual and performing arts. They explore the past and future place of indigenous cultures and societies, the utopian imagination, the social significance of technologies, the relationship between nature and culture, and the administration of justice.

We seek students who wish to pursue a coherent program centering on the vigorous multidisciplinary study of the Americas. We also want students who may already have some ideas about the projects they would like to pursue or the problems they would like to address. We also welcome foreign students who seek to deepen their understanding of the cultural, historical, and natural complexity of the United States, or the Americas more generally.

Degree Options

Through our affiliated faculty, the Department of American Studies offers the American studies major and joint major. We collaborate with the Department of African American Studies, the Asian Studies program, the Cuban and Caribbean studies program, the Indigenous Studies program, the Latino/Latina Studies program, and the Departments of Global Gender Studies, History, English, Romance Languages and Literatures, and Visual Studies, etc., all of which share our commitment to an interdisciplinary approach.

Indigenous Studies (not a baccalaureate degree program). The Department of American Studies has a large Indigenous Studies component that provides a unique cosmological vision and an irreplaceable source of knowledge about social relationships and the natural environment. For more information about the Indigenous Studies program, consult with Indigenous Studies faculty members Donald Grinde or Theresa McCarthy.

AMERICAN STUDIES—BA

Acceptance Criteria

Minimum 2.0 GPA overall.
Minimum 2.5 GPA in AMS 107 Introduction to American Studies and two prerequisite courses.

Advising Notes

See the director of undergraduate studies or the undergraduate advisor for advisement and suggestions on course selection.

Prerequisite Courses

Select two of the following:
AMS 162 New World Imaginations
APY 106 Introduction to Cultural Anthropology
APY 108 Introduction to Archaeology
DMS 107 Film History I
DMS 108 Film History II
DMS 109 Introduction to Film Interpretation
HIS 161 United States History I
HIS 162 United States History II
PSC 101 Introduction to American Politics
SOC 201 Structure of American Society
WS 101 Introduction to Women's Studies
WS 213 Women in Contemporary Society

Required Courses

Eight additional courses, including AMS 364 Seminar for Majors, and seven chosen from the six lists that follow below (additional courses may be designated by the director of undergraduate studies). At least four of the seven must be at the 300/400 level. Further, the seven must be distributed among at least four of the six groups.

Summary

Total required credit hours for the major.....33

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—AMS 107 or AMS 162; 100- or 200-level prerequisite course from the list given above
Spring—100- or 200-level prerequisite course from the list given above

SECOND YEAR
Fall—100 level or 200 level AMS or other listed course
Spring—Two 100 level or 200 level AMS or other listed courses

THIRD YEAR
Fall—300 level or 400 level AMS or other listed course
Spring—AMS 364*

FOURTH YEAR
Fall—300 level or 400 level AMS or other listed course
Spring—Two 300 level or 400 level AMS or other listed courses

**This course might instead be taken in the fourth year.*

Electives and Course Groupings

INDIGENOUS STUDIES
AHI 334 Native American Art: Socioeconomic Renewal or Ruin
AHI 342 Photo and the Colonial Gaze
AMS 100 Indian Image on Film
AMS 179 Introduction to Native American History
AMS 197 Seneca Language
AMS 198 Language of the Seneca I
AMS 231 Survey of Native American History
AMS 232 Survey of Native American History
AMS 272 Native American Literature
AMS 281 Native Americans and the Colonist
AMS 301 Introduction to Indigenous Women
AMS 425 Native American Legal Situation
APY 183 Peoples and Cultures of Latin America
APY 250 Ancient Maya
APY 302 Art and Cities of Central America
APY 331 Archaeology of New World
APY 333 North American Archaeology
APY 449 Mayan Civilization: Past and Present
APY 480 Collapse of Civilization
DMS 405 Ethnographic Film
ENG 343 Native American Literature
ENG 382 Books of the Ancient Maya
ENG 447 Mythology of the Americas
LIN 275 Languages and Cultures of Native North America
WS 219 Women of Color and the American Experience

(Continued on next page)

LATIN AMERICAN STUDIES

APY 183 Peoples and Cultures of Latin America
ENG 277 Introduction to U.S. Latino Literature
HIS 111 Latin America: Culture and History
HIS 322 Latin America: Culture and History
PHI 385 Latin American Thought
POR 402 Brazilian Civilization
PSC 329 U.S.-Latin American Relations
PSC 372 Latin American Politics
SPA 304 Early Spanish American Literature
SPA 311 Survey of Spanish American Literature
SPA 320 Contemporary Spanish-American Literature
SPA 328 Spanish American Culture and Civilization
SPA 330 Spanish American Themes
SPA 350 Spanish American Short Story
SPA 411 Spanish American Novel
SPA 415 Spanish American Poetry
SPA 416 Spanish American Theatre
SPA 418 Spanish American Literature: Main Currents
SPA 449 Latin Americans and Latinos in Film
SPA 450 Latina/o Literature in U.S.
WS 247 Women in Latin America

Note: SPA 411 and SPA 416 have SPA 210 or SPA 310 as prerequisites.

AFRICAN AMERICAN STUDIES

AAS 118 Introduction to African-American Studies
AAS 184 Classic Black Prose
AAS 253 Blacks in Films I
AAS 254 Blacks in Films II
AAS 290 Creating Black Art
AAS 361 Slavery and the Underground Railroad
AAS 392 The Black Church
AAS 414 Health Problems in the Black Community
CPM 250 USA Islam and Muslims
CPM 298 Religion in the Inner City
CPM 310 Black Writers
CPM 382 Law and Urban Problems
ENG 275 Black Literature
ENG 365 Black Literature
ENG 366 Studies in Black American Literature
LLS 200 Black Roots in Spanish American Literature
SOC 321 Race and Ethnic Relations
WS 219 Women of Color and the American Experience
WS 387 Black Female in Literature
WS 401 Black Women Writers

CARIBBEAN STUDIES

AAS 270 Major Issues/Caribbean Studies
AAS 377 Caribbean Literature
AMS 128 Afro-Latin Musical Praxis
HIS 414 Cuban Revolution
LLS 200 Black Roots in Spanish American Literature
LLS 204 Introduction to Puerto Rican Culture
LLS 208 20th-Century Puerto Rican Literature
LLS 301 Ethnicity and the Puerto Rican Experience
LLS 303 Mainland Puerto Rican Experience
LLS 305 Contemporary Afro-Caribbean Religion
LLS 307 History of Ideas in Puerto Rico
LLS 308 Black Presence in Latin America
LLS 401 Seminar in Puerto Rican Studies
LLS 402 Puerto Rican Literature
LLS 404 Havana: City and Culture

UNITED STATES AND CANADIAN STUDIES

AHI 365 Victorian America
AHI 387 American Art
AHI 390 American Architecture
AHI 391 American Architecture
AMS 111 Contemporary Popular Music
AMS 113 American Lives and Environments
AMS 114 American Lives and Environments
AMS 162 New World Imaginations
AMS 167 Cross-Cultural Topics
AMS 168 Cross-Cultural Topics
AMS 209 Musics of the World
AMS 210 Musics of the World
AMS 439 Contemporary American Fiction
AMS 440 Contemporary American Fiction
AMS 457 Problems in American Urban History
AMS 488 Violence and Nonviolence
AMS 489 Violence and Nonviolence
AS 110 The Asian American Experience
AS 117 Asians in American History and Culture
AS 270 Asian American Women Writers
AS 348 Asian Americans and Visual Media
ENG 241 Major American Writers
ENG 242 Major American Writers
ENG 332 Early American Literature
ENG 333 American Literature, 1828-1865
ENG 334 American Literature, 1865-1914
ENG 335 19th-Century American Novel
ENG 336 Modern American Novel
ENG 339 American Poetry
ENG 342 Studies in American Literature
GEO 231 U.S. Contemporary Problems
HIS 361 American Intellectual History
HIS 362 American Intellectual History
HIS 422 Topics in American Intellectual/Cultural History
HIS 452 Topics in Colonial America
JDS 255 Jewish Folklore
JDS 401 Aspects of American Jewish History
MUS 265 Rock Music
MUS 300 Music Pluralism Since 1900
MUS 313 American Music
PHI 359 American Philosophy
PSC 225 Equality and Justice in U.S.
PSC 319 Media in American Politics
PSC 384 American Political Thought
PSC 385 American Political Thought
SOC 334 Introduction to Mass Cultural Studies
SOC 348 Urban Sociology
WS 212 The American Jewish Woman
WS 283 American Women Writers
WS 353 Women and the Law
WS 376 Gender and Hollywood Films

AMERICAN ENVIRONMENTS

AMS 113 American Lives and Environments
AMS 114 American Lives and Environments
AMS 161 Natural World Perspectives
AMS 285 Natural World vs. Legal World
AMS 343 Human Ecology
APY 276 Introduction to Ethnomedicine
ARC 121 Introduction to Architecture
ARC 241 Introduction to Building Technology
ARC 328 Historic Preservation
ARC 465 Urban Planning and Design I
ARC 470 Climate and Architecture
ARC 476 Landscape Design
BIO 102 Plants and their Uses
BIO 200 Evolutionary Biology
BIO 309 Ecology
BIO 310 Ecology Methods
GEO 355 Landscape Ecology
GEO 356 Environmental Change
PD 301 Perspectives on Land Use and Development
PD 302 Technology and Public Policy
SSC 118 Introduction to Environmental Studies
SSC 238 Ethics of Survival
SSC 315 Field Ecology

(Continued on next page)

SSC 317 Environmental Politics
SSC 470 Ethnobotanical Surveys

Note: BIO 309 and BIO 310 have BIO 200 as a prerequisite. PD 301 and PD 302 have PD 120 or PD 212 as a prerequisite.

Note: A maximum of two courses may be applied both to the major and to the general education requirement.

AMERICAN STUDIES—MINOR

Acceptance Criteria
Minimum GPA of 2.0 overall.

Advising Notes
Submit minor application to the Center for the Americas.

Required Courses
At least six AMS or other courses among those listed for the major (see above), including at least three at the 300-400 level. Further, the six courses must be distributed among at least three of the six groups in the major list.

Anatomy*

Department of Pathology and Anatomical Sciences

School of Medicine and Biomedical Sciences

206 Farber Hall
South Campus
Buffalo, NY 14214-3000
Phone: (716) 829-3183
Fax: (716) 829-2086
Web site: www.smbs.buffalo.edu/acb/
E-mail: jtgood@buffalo.edu

Reid R. Heffner, M.D.
Chair, Pathology and Anatomical Sciences

Frank Mendel
Director, Division of Anatomy and Cell Biology

**Not a baccalaureate degree program.*

For a listing of Anatomy course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

Anthropology

Department of Anthropology

College of Arts and Sciences

380 Millard Fillmore Academic Center
Ellicott Complex
North Campus
Buffalo, NY 14261-0026
Phone: (716) 645-2414
Fax: (716) 645-3808
Web site: wings.buffalo.edu/anthropology

Donald Pollock
Chair

Phillips Stevens
Director of Undergraduate Studies

For a listing of Anthropology faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Anthropology combines the biological, historical, and social sciences in a unique study of humankind. It is the only discipline that examines and attempts to understand humankind as a whole. The undergraduate program includes the subfields of archaeology, cultural anthropology, and physical anthropology. Students should specialize in one of these subdisciplines.

Degrees Offered

- **Undergraduate:** BA
- **Graduate:** MA, PhD

Advisement

To be admitted as a major, students must complete an application to the major, in person. Upon admission to the department, students are assigned an advisor based upon their interests and plans. They devise a plan of study in consultation with the advisor and continue to discuss the development of their major by meeting with their advisor at least once per semester. Likewise, students pursuing minors meet with their advisors at least once per semester to discuss their progress. Students may choose to concentrate in one of the subdisciplines or construct a major that reflects a unifying theme or perspective that crosses subdisciplinary boundaries.

It is the students' responsibility to plan their programs carefully with their advisors and to understand applicable expectations and deadlines, and to meet with their advisors at least once each semester to be sure their programs are on track. Last-minute requests for variances, waivers, or extensions may not be granted. Advisors may also suggest additional coursework in computer science, geology, geography, linguistics, or another department.

Transfer Policy

Students wishing to transfer into the University at Buffalo must be accepted by the university prior to acceptance by the Department of Anthropology. Criteria for acceptance into the department are the same for transfer students as for UB students.

Evaluation of courses taken at another school for departmental major credit is done by the department. Usually the Student Advising Services advisor, who sees transfer students initially, refers students to the department. Students should bring course descriptions, syllabi, and any other available information that will help the department evaluate anthropology courses for which students are requesting major credit.

ANTHROPOLOGY—BA

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum grade of C- in one of the following prerequisite courses:
APY 106, APY 107, APY 108.

Advising Note
Minimum grade of C- must be earned on all courses taken for major credit.

Prerequisite Courses
One of the following three courses:
APY 106 Introduction to Cultural Anthropology

(Continued on next page)

APY 107 Introduction to Physical Anthropology
APY 108 Introduction to Archaeology

Required Courses
APY 106 Introduction to Cultural Anthropology (if not taken as the prerequisite)
APY 107 Introduction to Physical Anthropology (if not taken as the prerequisite)
APY 108 Introduction to Archaeology (if not taken as the prerequisite)
APY 410 Senior Seminar
Practicum
Statistics course (choose from list below)
Eight electives (choose from list below), including two area studies courses and two problem/theoretical courses

Summary
Total required credit hours for the major.....39

See Baccalaureate Degree Requirements for general education and remaining university requirements

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—APY 106, APY 107
Spring—APY 108

SECOND YEAR
Fall—One area studies elective course
Spring—One problem/theoretical elective course, one APY elective

THIRD YEAR
Fall—One problem/theoretical elective course, one of the following statistics courses: CEP 207, PSY 207, SOC 294, SSC 225, STA 119
Spring—Practicum, one area studies elective course

FOURTH YEAR
Fall—APY 410, one APY elective
Spring—One APY elective

Electives and Course Groupings
Eight anthropology electives (24 cr) selected through advisement are required, including:

1. Two area studies courses (3 cr each), which include (but are not limited to): APY 239, APY 250*, APY 265, APY 325, APY 330, APY 331, APY 332, APY 333, APY 343, APY 353, APY 361, APY 362, APY 363, APY 364, APY 366, APY 367, APY 369, APY 371, APY 373, APY 382, APY 383, APY 394, APY 402, APY 432, APY 433, APY 437, APY 449, APY 476, APY 482, APY 484
2. Two problem-oriented or theoretical courses (3 cr each), which include (but are not limited to): APY 104, APY 105, APY 120, APY 203, APY 205, APY 209, APY 210, APY 215, APY 217, APY 218, APY 226, APY 245, APY 246, APY 248, APY 253, APY 261*, APY 262, APY 275, APY 276, APY 280*, APY 283, APY 303, APY 310, APY 311, APY 312, APY 315, APY 320, APY 323, APY 324, APY 328, APY 329, APY 335, APY 338, APY 344, APY 345/APY 346, APY 348, APY 350, APY 368, APY 372, APY 374, APY 377, APY 380, APY 384, APY 393, APY 396, APY 401, APY 402, APY 403, APY 404, APY 405, APY 406, APY 408, APY 409, APY 411, APY 412, APY 416, APY 417, APY 427, APY 429, APY 434, APY 435, APY 439, APY 440, APY 441, APY 442, APY 443, APY 447, APY 448, APY 474, APY 475, APY 495, APY 498, APY 499

**Repeatable course: Topics in Anthropology (variable topics).*

Anthropology Emphasis Area for Premedical or Predental Students
May be used in preparation for application to those professional schools. Premedical/predental students are encouraged to specialize in the field most interesting to them and in which they can achieve the best academic results. Anthropology majors in the premedical/predental emphasis area must satisfy all regular departmental requirements.

ANTHROPOLOGY—MINOR

Required Courses
Students devise plans of study in consultation with their advisors, with a focus in:

GENERAL ANTHROPOLOGY
Minimum of seven courses: APY 106, APY 107, APY 108, and four electives at the 200 level or above, including one area studies course at the 200 level or above

ARCHAEOLOGY
Minimum of six courses: APY 105, APY 108, and four electives, including one area studies course at the 200 level or above

PHYSICAL ANTHROPOLOGY
Minimum of six courses: APY 105, APY 107, and four electives, including one area studies course at the 200 level or above

CULTURAL ANTHROPOLOGY
Minimum of six courses: APY 105, APY 106, and four electives, including one area studies course at the 200 level or above

MEDICAL ANTHROPOLOGY
Minimum of seven courses: APY 106, APY 107, APY 275, and four electives, including one area studies course at the 200 level or above and three chosen from a list of recommended premedical/predental concentration courses

Architecture

Department of Architecture

School of Architecture and Planning

112 Hayes Hall
South Campus
Buffalo, NY 14214-3087
Phone: (716) 829-3483
Fax: (716) 829-3256
Web site: www.ap.buffalo.edu/architecture/

Mehrdad Hadighi
Chair

R. J. Multari
Director of Advisement

Debi Smith
Assistant to the Chair

Susan McDonald
Admissions Secretary

For a listing of Architecture faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Department of Architecture offers the only accredited professional master of architecture (MArch) degree in the State University of New York system, along with an undergraduate preprofessional bachelor of science in architecture (BS Arch), as well as an undergraduate minor. Founded in 1969, the department offers introductory courses for nonmajors, as well as undergraduate preprofessional, graduate professional, and advanced postprofessional training in the field of architecture. Additional degree programs include a dual master of architecture plus master of urban planning (MArch + MUP), a dual master of architecture plus master of business administration (MArch + MBA), a dual master of architecture plus master of fine arts in media arts production (MArch + MFA), and a research-based advanced postprofessional master of architecture (MArchII).

Architecture is the study of designing and building structures, and architects are professionals with specialized knowledge about the design of built and natural environments. These projects can be as small as an entrance way and as large as an entire college campus—and everything in between. Architects transform concepts and then develop images, plans, and designs of buildings, communities, and landscapes for construction.

The educational mission of the Department of Architecture is fourfold:

1. To educate and train individuals in the art and science of architecture in preparation for creative leadership within the profession and the discipline of architecture;
2. To encourage a critical understanding of the historical, societal, material, and cultural forces that inform the built environment;
3. To prepare students to explore emerging ideas and technologies that can and will have profound effects on the built environment; and,
4. To provide a comprehensive education through exposure to related disciplines throughout the university and to encourage rigorous interaction across disciplinary boundaries.

Incoming students should prepare themselves in the areas of freehand drawing, manual drafting, figure drawing, sculpting, studio art, technical drawing, and 2-D and 3-D design. Graphic techniques, model making, ceramics production, metal working, as well as many other visual skills are taught in the bachelor of science in architecture program, but students who have some earlier preparation may find it easier to succeed in design studio coursework. In addition, the Association of Collegiate Schools of Architecture recommends introductory courses in urban studies, art, and world history for those interested in architecture.

Architects must be able to graphically communicate their ideas visually to their clients; therefore, design and drawing ability is helpful for such communication. More important is a visual orientation and the ability to conceptualize and understand spatial relationships. Good communication skills, the ability to work independently or as part of a team, and creativity are important qualities for anyone interested in becoming an architect.

Many of the building technology courses and design studios required in the Department of Architecture depend upon prior knowledge of physics and calculus, and physics and calculus are prerequisites for the structures/construction courses in architecture. Students may fulfill these prerequisites with successful completion of Advanced Placement high school calculus and Advanced Placement high school physics, or successful completion of introductory college calculus and introductory college physics.

Basic computing skills, including familiarity with personal computers, word processing, online library research, and desktop publishing are prerequisites to beginning the sophomore year. Students who are unable to demonstrate the necessary competence may be required to seek remedial help before continuing in the undergraduate program. It is the responsibility of all architecture students to have access to a computer.

Degrees Offered

- **Undergraduate:** BS, Minor
- **Graduate:** MArch
- **Combined Graduate:** MArch+MUP, MArch+MBA, MArch+MFA

Degree Options

Bachelor of Science in Architecture

The bachelor of science in architecture is a preprofessional baccalaureate degree designed to instill concepts and skills upon which professional architecture studies at the graduate level are based. It allows students to complete all prerequisites for eligibility to enter a two-year accredited professional master of architecture (MArch) degree program. In 1994, the department expanded the undergraduate program into a four-year, preprofessional undergraduate degree. This format provides candidates for the preprofessional bachelor of science in architecture with a liberal exposure to the applied arts, humanities, social sciences, technologies, and aesthetic expression. The goal is to convey architecture as a field of study and a way of viewing the world. A minimum of 128 semester credit hours is required for the preprofessional bachelor of science in architecture.

The four-year, preprofessional bachelor of science in architecture, without the accredited first professional master of architecture degree, is not accredited by NAAB. The preprofessional bachelor of science in architecture, as recognized by NAAB, NCARB, and the New York State Education Department, is useful for those who desire a foundation in the field of architecture as preparation for either continued education in an accredited professional master of architecture (MArch) degree program or employment options in architecture-related professions. For additional information on the National Architectural Accrediting Board (NAAB), visit http://www.naab.org/. For further information on the National Council of Architectural Registration Boards (NCARB), visit http://www.ncarb.org/.

Most states require that an individual intending to become an architect hold an accredited professional degree. There are three types of professional degrees that are accredited by the National Architectural Accrediting Board (NAAB): the bachelor of architecture (BArch), which typically requires five years of undergraduate academic study; the master of architecture (MArch), which requires a minimum of three years of academic study following an unrelated baccalaureate degree—or—two years following a related preprofessional baccalaureate architecture degree; and, the doctor of architecture (DArch). These professional degrees are structured to educate those who aspire to registration/licensure as architects. The University at Buffalo is the only campus in the State University of New York system to offer the accredited professional master of architecture (MArch) degree.

Minor in Architecture

The minor in architecture, a non-studio based track offered by the Department of Architecture, provides students with a liberal exposure to the humanities, technology, social sciences, and aesthetic expression through the lenses of the built and the natural environments. The study of architecture offers an indispensable background for students in most fields of study in that it develops skills in critical thinking and making as well as furnishing tools for interpreting and understanding the ways in which we inhabit and shape the material world. In addition, the minor in architecture may enhance and provide additional knowledge for students interested in pursuing a 3+ year accredited professional master of architecture (MArch) degree upon completion of their baccalaureate studies. The minor in architecture is typically completed within five to six semesters.

Architectural Licensing and Registration

To become a registered architect, an individual is required to sit for a state-licensing architecture exam. The current licensure policy in the State of New York is based, in combination, on the accumulation of credits earned from:

a. Academic education; and,
b. Professional/intern development experience.

Licensing evaluations are conducted in New York by the State Education Department's Office of the Professions. Licensing information related to architecture is also available on the New York State Education Department's Web site at http://www.op.nysed.gov/arch.htm

All States and the District of Columbia require individuals to be licensed (registered) before they may call themselves architects and contract to provide architectural services. During this time between graduation and becoming licensed, architecture school graduates generally work in the profession as an intern architect under supervision of a licensed architect who takes legal responsibility for all work. Licensing requirements include a professional degree in architecture, a period of practical training or internship, and a passing score on all divisions of the Architect Registration Examination (ARE).

All State architectural registration boards require a professional training period before candidates may sit for the state-licensing architecture exam and become licensed. Most States have adopted the training standards established by the Intern Development Program, a branch of the American Institute of Architects (AIA) and the National Council of Architectural Registration Boards (NCARB). These standards stipulate broad and diversified training under the supervision of a licensed architect over a three- to five-year period. New graduates usually begin as intern architects in architectural firms, where they assist in preparing architectural documents or drawings. Intern architects may research building codes and materials or write specifications for building materials, installation criteria, the quality of finishes, and other, related details. For information on the professional intern

architecture requirements, visit the National Council of Architectural registration Boards Web site at www.ncarb.org/ or the American Institute of Architects Web site at www.aia.org/. After completing the on-the-job training period, intern architects are eligible to sit for the state-licensing architecture exam. The examination tests candidates' knowledge, skills, and ability to provide the various services required in the design and construction of structures. Licensing examinations are offered in New York by the State Education Department's Office of the Professions.

At present, a candidate can sit for the New York State licensing exam with:

1. The accredited first professional degree in architecture (UB's master of architecture) and a minimum of three years of professional intern development experience; or,
2. A preprofessional architecture degree (UB's bachelor of science in architecture) and a minimum of five years of professional intern development experience.

The New York State architect license, in combination with the preprofessional bachelor of science in architecture, will not transfer to most other states. Without the accredited first professional master of architecture degree, an individual may not be permitted to sit for the licensure exam or practice in other states. In addition, the National Council of Architectural Registration Boards (NCARB) requires an accredited professional master of architecture degree for membership certification and license reciprocity. A growing number of architects voluntarily seek certification by NCARB, which can facilitate an individual's licensing to practice in additional states. According to 2007 US Department of Labor data, approximately one-third of all licensed architects had NCARB certification. Architects find it increasingly necessary for NCARB certification to gain license reciprocity in order to compete for the best jobs and projects in other States. Certification is awarded after independent verification of the candidate's educational transcripts, employment record, and professional references. NCARB certification is the primary requirement for reciprocity of licensing among State Boards that are NCARB members. Nationally, the preferred method for licensure is to complete an accredited professional master of architecture degree program. For licensing information related to architecture, visit the New York State Education Department Web site at www.op.nysed.gov/arch.htm. For information on the National Council of Architectural Registration Boards (NCARB), visit www.ncarb.org/. For membership information on the American Institute of Architects (AIA), visit www.aia.org/. After becoming licensed and gaining experience, architects take on increasingly responsible duties, eventually managing entire projects. In large firms, architects may advance to supervisory or managerial positions. Some architects become partners in established firms, while others set up their own practices. Graduates with degrees in architecture also enter related fields such as graphic, interior, or industrial design; urban planning and design; real estate development; engineering technology; and construction management.

Advisement

All students in the UB School of Architecture and Planning are assigned faculty advisors and mentors upon admission to the School. In addition, UB's School of Architecture and Planning Advisement is available for assistance. Students are encouraged to consult regularly with their advisors and mentors in matters pertaining to academic options, course selection, postbaccalaureate studies, and career opportunities. Students meet with advisors and mentors as often as they choose to explore educational opportunities available within the School of Architecture and Planning and the University at Buffalo, and to plan a course of study that is consistent with their abilities, achievements, interests, and expectations. The ultimate goal of advisement is to empower students to use the tools and resources available to become active and responsible learners. Visit http://wings.buffalo.edu/ap/ for additional information on undergraduate advisement.

Acceptance Information

Admissions Statement

The School of Architecture and Planning has an admission policy that actively encourages applicants from protected groups and does not discriminate on the basis of race, color, religion, gender, sexual orientation, national origin, disability, or veteran status. Admission is competitive; and applicants are reviewed according to the admission criteria. Acceptance of students in the preprofessional, professional, and postprofessional programs is determined on the basis of the applicants' qualifications and experience. However, since the school's size is limited, the programs may exercise discretionary powers of selection. Courses and programs offered by the School of Architecture and Planning may include an instructional technology fee. Contact School of Architecture and Planning Advisement or visit http://wings.buffalo.edu/ap/ for additional information on undergraduate admission and advisement.

Bachelor of Science in Architecture

Freshmen Admission. For students with no previous postsecondary education experience, the Department of Architecture uses the same requirements for departmental admission at the freshman level as the university uses; that is, high school average, completed high school courses, rank in high school class, and standardized exam scores (SAT/ACT). Portfolios are not required for initial freshmen application; however, portfolios and academic letters of recommendation may be requested at a later time as part of the undergraduate admissions review process. First-time freshman applicants are notified of the departmental decision at the same time that they are notified of the university's admission decision, with competitive admission on a space available basis. Minimum SAT, ACT, and TOEFL scores are required for studio enrollment. The preprofessional bachelor of science in architecture is a fall-only admission program. Contact School of Architecture and Planning Advisement for additional admission and advisement information.

Transfer Admission. Transfer students must first apply to the University at Buffalo by February 15 and meet its transfer admission requirements. Department of Architecture transfer admission application forms and portfolio requirement information (if appropriate) are mailed or downloaded once the undergraduate transfer admission application is received by the University at Buffalo. Transfer students should consult directly with the Department of Architecture to determine architecture application deadlines, academic admission criteria, and recommended preparatory courses. Applications from undergraduate transfer students received after February 28 will be reviewed on a space-only available basis until May 31 as guided by the School of Architecture and Planning's admission statement. No additional transfer application material will be reviewed after May 31. A minimum GPA of 2.5 in architecture and architecture-related courses and a minimum overall GPA of 2.5 is required for admission consideration, with competitive admission on a space available basis. Minimum TOEFL scores are required for studio enrollment. The preprofessional bachelor of science in architecture is a fall-only admission program. Contact School of Architecture and Planning Advisement for additional admission and advisement information.

Intended and declared Architecture majors are granted provisional admission as School of Architecture and Planning general studies majors.

Minor in Architecture

Students choosing a minor in architecture must have a minimum GPA of 2.0 and must have completed two of the lower-division (100/200-level) courses with a minimum GPA of 2.5. Upon admission to the minor in architecture, students are assigned faculty mentors based upon their interests. These faculty mentors help students develop specific plans of study. Students are required to discuss development of their minor through conferences with their faculty mentors at least once per semester. Contact School of Architecture and Planning Advisement for additional admission and advisement information.

Academic Requirements

Students are reviewed on their progress in the undergraduate preprofessional bachelor of science in architecture by the Department of Architecture on an annual basis. This review determines the student's eligibility to continue onto the next level in the undergradu-

ate preprofessional architecture program. A minimum cumulative GPA of 2.5 in required architecture curricular courses is compulsory for academic degree requirements. In addition to all minimum GPA levels, all undergraduate students are expected to make satisfactory progress in design studios. All students must earn no less than a C- in design studio, and any student who receives a grade lower than C- must repeat the studio before taking the next studio. Grades lower than C- in any design studio will not count toward the preprofessional bachelor of science in architecture degree requirements. Supplemental department academic policies can be located online at http://www.ap.buffalo.edu/architecture/admissions/general.asp.

Statement on Continuous Studio Enrollment

Students admitted to the preprofessional bachelor of science in architecture (B.S. Arch.) must complete the appropriate design studio (ARC 101-ARC 102, ARC 201-ARC 202, ARC 301-ARC 302, ARC 403-ARC 404, ARC 406) each semester to maintain continuous enrollment in the academic program, unless a student is approved for a studio leave of absence by the Department of Architecture and by School of Architecture and Planning Advisement. Studio leaves of absence are often approved for students with medical, legal, military, or other extenuating circumstances as reviewed by UB's School of Architecture and Planning Advisement. Design studios are open to admitted architecture majors only.

A student who resigns design studio with an "R" (resign) grade without prior approval for a studio leave of absence will be disqualified from the preprofessional bachelor of science in architechture. Disqualification shall mean that the student is prohibited from taking additional design studios offered by the Department of Architecture. Disqualification will not occur if a student is on an approved studio leave of absence for medical, legal, military, or other extenuating circumstances.

A student who has been disqualified may apply for re-entry through the Undergraduate Transfer and Re-Entry Application Form available online at http://wings.buffalo.edu/ap/. The student ought to supply evidence of experience and academic coursework during the break in studio enrollment that will better prepare the student for additional design studio studies. Contact School of Architecture and Planning Advisement for additional admission and advisement information.

School of Architecture and Planning Advisement also reviews undergraduate student requests for exceptions to registration: late registration, administrative registration, adding or withdrawing from courses after the University at Buffalo's prescribed deadlines (available online at http://src.buffalo.edu/calendars/), and exceeding the University at Buffalo's 19-credit hour limit.

Transfer Policy

Courses completed at other colleges and universities are not automatically accepted by the Department of Architecture as fulfilling departmental requirements. While select architecture courses taken elsewhere may be accepted, determination is made by an evaluation of the student's transcripts, course content, contact hours, and grades earned. A minimum course grade of B- (2.67 on a 4.0 scale) is required for articulation to courses offered by the School of Architecture and Planning. Student transcript evaluations are conducted by the School of Architecture and Planning's Office of Undergraduate Advisement. Placement in the undergraduate preprofessional architecture program is made by the department following this evaluation, in tandem with portfolio review, when applicable. Visit http://wings.buffalo.edu/ap/transferpolicy.html for additional information on transfer policies and procedures. A minimum GPA of 2.5 in architecture and architecture-related courses and a minimum overall GPA of 2.5 is required for admission consideration, with competitive admission on a space available basis.

ARCHITECTURE—BS

Acceptance Criteria

Minimum GPA of 2.5 overall.
Minimum GPA of 2.5 in architecture and architecture-related courses.
Competitive admission on a space available basis.

Advising Notes

A minimum GPA of 2.5 in architecture and architecture-related courses and a minimum overall GPA of 2.5 is required for admission consideration, with competitive admission on a space available basis.

Transfer students must first apply to the University at Buffalo by February 15 and meet its transfer admission requirements. Transfer students must then complete a departmental application (available by contacting the Department of Architecture or UB's School of Architecture and Planning Advisement) upon submission of the university's transfer admission application. Transfer admission applications received after February 28 will be reviewed on a space-only available basis until May 31, as guided by the School of Architecture and Planning's admission statement. No additional supplemental transfer application material will be reviewed after May 31.

Architecture design studios (ARC 101-ARC 102, ARC 201-ARC 202, ARC 301-ARC 302, ARC 403-ARC 404, ARC 406) are majors-only design studios. Concurrent enrollment in multiple design studios is prohibited.

Students are reviewed on their progress within the preprofessional bachelor of science in architecture by the Department of Architecture on an annual basis. This review determines the student's eligibility to continue onto the next level in the undergraduate preprofessional program. A minimum GPA of 2.5 in major courses is required for satisfactory academic progress.

A minimum of 42 ARC-prefixed credit hours must be completed at the University at Buffalo to satisfy the Department of Architecture's bachelor of science in architecture academic residency requirement. A minimum of 128 semester credit hours and minimum GPA of 2.5 in major courses is required to graduate with the preprofessional bachelor of science in architecture. Grades of lower than C- in any design studio will not count toward degree requirements.

Intended pre-architecture and admitted architecture majors and minors should go directly to the Department of Architecture, Hayes Hall, for advisement.

Required Courses

ARC 101 Design Studio I
ARC 102 Design Studio II
ARC 121 Introduction to Architecture
ARC 122 Environment, Behavior, and Design
ARC 201 Design Studio III
ARC 202 Design Studio IV
ARC 231 Architecture History I: Ancient - 1450
ARC 234 Architecture History II: 1450 - Present
ARC 241 Introduction to Building Technology
ARC 301 Design Studio V
ARC 302 Design Studio VI
ARC 352 Structures I
ARC 362 Performance Programming
ARC 403 Design Studio VII
ARC 404 Design Studio VIII
ARC 411 Introduction to CAAD
ARC 442 Construction Technology
ARC 453 Structures II
ARC 473 Environmental Controls I
MTH 121 Survey of Calculus and Its Applications I
PHY 101 or AP 100 College Physics I*
Minimum of 6 credits of ARC electives
Minimum of 15 credits of non-ARC electives

(Continued on next page)

Summary
Total required credit hours for the major.....98

See Baccalaureate Degree Requirements for general education and remaining university requirements

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—ARC 101, ARC 121, MTH 121
Spring—ARC 102, ARC 122, PHY 101/AP 100*

SECOND YEAR
Fall—ARC 201, ARC 231, ARC 241
Spring—ARC 202, ARC 234, ARC 352

THIRD YEAR
Fall—ARC 301, ARC 411, ARC 453
Spring—ARC 302, ARC 442, ARC 473

FOURTH YEAR
Note: The fourth year spring semester is the best possible time for architecture study abroad opportunities.
Fall—ARC 403, ARC 362, one ARC elective
Spring—ARC 404, one ARC elective

**PHY 151 is optional for architecture students needing PHY 101/AP 100, as approved by the Department of Architecture and the Department of Physics.*

Electives and Course Groupings

The following is a sample, but not all-inclusive, list of possible electives offered by the Department of Architecture:
ARC 211 American Diversity and Design
ARC 280 Buffalo Niagara by Design
ARC 318 Design Methods
ARC 322 Introduction To Building Reuse
ARC 326 Building Types
ARC 328 Historic Preservation
ARC 343 Building Systems Technology I
ARC 344 Building Systems Technology II
ARC 354 Experimental Structures
ARC 357 Fabric Structures
ARC 419 Contemporary Theory
ARC 412 CAAD 2: Models, Objects, & Environment
ARC 435 American Architecture
ARC 440 Computer Applications
ARC 448 Building Projects
ARC 449 Architectural Materials
ARC 455 Structures III
ARC 464 Behavior and Space
ARC 465 Urban Planning and Design I
ARC 467 Research Practice
ARC 470 Climate and Architecture
ARC 472 Energy and Shelter
ARC 475 Environmental Controls II
ARC 476 Landscape Design
ARC 479 Sustainable Design
ARC 481 Cost Control and Analysis
ARC 482 Professional Practice
ARC 488 Special Topics: Seminar in Design Theory
ARC 496 Community Design Service
ARC 499 Independent Study

ARCHITECTURE—MINOR

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in prerequisite courses.

Advising Notes

Upon admission to the minor in architecture, it is strongly recommended that students complete the Architecture Shop Safety Workshop. For more information on the Safety Workshop, contact the Architecture Materials Shop, 2 Parker Hall, South Campus.

All students must complete a minimum of 9 credit hours and three courses in the lower division and a minimum of 12 credit hours and four courses in the upper division. Students devise a plan of study in consultation with their faculty mentors.

Students must have a minimum GPA of 2.0 overall and a minimum GPA of 2.5 in minor courses for successful completion of the minor in architecture.

No more than 3 credits of ARC 467 (Research Practice), 3 credits of ARC 496 (Community Design Service), and 3 credits of ARC 499 (Independent Study) may be applied toward minor requirements. In addition, no more than six credits of architecture transfer coursework may be applied toward minor requirements.

Other relevant courses (such as Special Topics courses) in the undergraduate curriculum from the Department of Architecture may be approved for the minor, with qualified special permission, from the course instructor and UB's School of Architecture and Planning Advisement.

The Department of Architecture guarantees that some of these courses will be offered within a six semester period so students can complete their minor in a timely manner. Select courses approved for the minor in architecture may only be offered on an intermittent basis.

For additional information, or for an admission application to the minor in architecture, contact School of Architecture and Planning Advisement.

Prerequisite Courses

Two 100/200-level architecture courses.

Required Courses

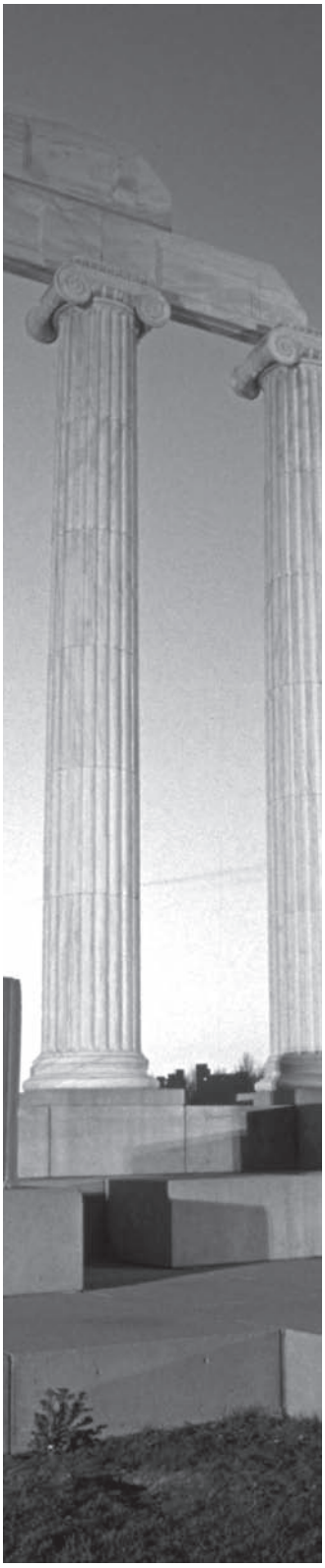
LOWER-DIVISION COURSES
ARC 121 Introduction to Architecture
ARC 122 Environment, Behavior, and Design
ARC 211 American Diversity and Design
ARC 231 Architecture History I: Ancient - 1450
ARC 234 Architecture History II: 1450 - Present
ARC 241 Introduction to Building Technology (Suggested)
ARC 280 Buffalo Niagara by Design

UPPER-DIVISION COURSES
ARC 322 Introduction to Building Reuse
ARC 328 Historic Preservation
ARC 343 Building Systems Technology I
ARC 344 Building Systems Technology II
ARC 352 Structures I
ARC 354 Experimental Structures
ARC 357 Fabric Structures
ARC 362 Performance Programming
ARC 419 Contemporary Theory
ARC 435 American Architecture
ARC 448 Building Projects
ARC 453 Structures II
ARC 455 Structures III
ARC 464 Behavior and Space
ARC 467 Research Practice
ARC 470 Climate and Architecture
ARC 473 Environmental Controls I
ARC 476 Landscape Design
ARC 479 Sustainable Design
ARC 481 Cost Control and Analysis
ARC 482 Professional Practice
ARC 488 Seminar in Design Theory

(Continued on next page)

ARC 496 Community Design Service
ARC 499 Independent Study
PD 312 Design of Cities
PD 407 Site Planning and Design

Total minimum required credit hours..... 21



Art

Department of Visual Studies

College of Arts and Sciences

202 Center for the Arts
North Campus
Buffalo, NY 14260-6010
Phone: (716) 645-6878
Fax: (716) 645-6970
Web site: www.art.buffalo.edu

David Schirm
Chair

Anthony Rozak
Director of Undergraduate Studies

For a listing of Art faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Department of Visual Studies is a combination of the former departments of Art and Art History. Visual Studies unites several major aspects of art and visual culture: the practice of art, the history of art, and the critical study of visual images.

Visual Studies offers degree programs in art practice (ART), art history (AHI) as well as courses in visual studies (VS).

See the degree program entries for information on each of these programs.

The Department of Visual Studies promotes the University at Buffalo's commitment to creative research/scholarship and teaching excellence. The Art Program is dedicated to diversity, innovation and progressive practice, featuring an internationally recognized, professionally active full-time faculty. The Visual Studies Art Program collaborates with other programs within the College of Arts and Sciences and throughout the research environment of UB. The Art Program is accredited by The National Association of Schools of Art and Design (NASAD).

The study of art opens the mind to a wealth of possibilities whereby a student can identify and appreciate their distinctive skills. Artists and designers generate unique and unexpected visual expressions of culture through a flexible, inquisitive process that investigates and defines our world. The emphasis in the art program is on critical thinking and art production skills. The art program combines a broad university education with a rigorous art curriculum to prepare the student for the real world practice of art and design.

Degrees Offered

- **Undergraduate:** BFA, BA; Minor in Studio Art
- **Concentrations:** BFA concentrations include: Communication Design, Emerging Practices, Painting, Photography, Print Media, Visual Studies Studio and Sculpture; BA concentrations include: General Studio, Communication Design, and Photography.
- **Graduate:** MFA

Degree Options

The Department of Visual Studies art degree programs have two types of bachelor's degrees in art: a focused studio program, which grants the BFA; and liberal arts based program, that grants the BA. The BFA degree focuses on intensive work in the visual arts supported by a program of general studies. The BA degree focuses on art in the context of general studies that may allow the student to pursue a minor or double major in another program, if desired. Four-year BA and BFA degrees (of 120 credits) are offered with undergraduate concentrations in communication design, emerging practices, painting, photography, sculpture, print media, visual studies studio and general studio.

These concentrations intersect with an emergent range of studio art, visual studies, and university electives.

Advisement

Advisement is provided for accepted majors by a full-time academic advisor in the department, along with faculty members in the student's area of concentration.

Studio Art Minor

The Studio Art is an 18 credit minor in the Art Program. Students must apply to be accepted in this program after they have completed two studio art courses.

Acceptance Information

All BFA and BA intended art majors must apply to and be accepted by the Art Program in the Visual Studies Department.

Accepted students who have indicated fine art or studio art as their intended major on their university application are block registered into freshman foundation courses on a first-come, first-served basis. During the spring semester of the freshman year, students with an Art GPA of 3.0 or above are automatically granted admission to the Art program. Students with a GPA lower than 3.0 must have a portfolio review/interview to determine admittance into the Art program.

Currently enrolled UB students with a minimum GPA of 2.5 are eligible to apply to the Visual Studies Department's BA or BFA Art program. Admission is determined by a portfolio review and interview. Freshman foundation courses are required for the BA and BFA degrees and are also prerequisites for most upper level courses. Students should take these courses before applying to the major.

Schedule of Portfolio Reviews

- Freshmen: Spring of freshman year if art GPA is below 3.0
- Honors Scholarship: Check with Academic Advisor
- Individualized Admissions: February - April
- Currently Enrolled: Fall and Spring
- Transfers: Spring prior to Fall entry

Acceptance Information

- Number of applicants/year: 180
- Number of accepted majors/year: 40-50 freshmen; 30 transfers/currently enrolled
- Total number of majors currently enrolled: 300

Portfolio Review Procedure

To schedule a portfolio appointment, students must apply for a portfolio review by application available through the Visual Studies Department's Academic Advisor, Kim Yarwood.

Academic Requirements

Freshman Foundations Curriculum

Undergraduate study in art begins with the Freshman Foundations Program, a series of five thematically focused studio courses and one critical theory course. These courses are limited to sixty-eighty

freshman level students. The foundations program provides a structured, supportive framework for the students' initial experience in art studio which is especially valuable in the freshman year. The program builds a solid basis of art concepts and skills for subsequent study. Foundations courses are structured thematically to introduce the student to two- and three-dimensional media, and the process of conceptualization by group and individual projects. Students learn to generate ideas, refine relationships of form and space, and develop skills of perception and hand-eye coordination. The Foundations program focuses on vocabulary development, critical thinking, basic tools and concepts of artmaking, ways of seeing, and transforming experience into artwork.

Sophomore and Junior Years

During the sophomore year, BFA and BA students take introductory (200-level) studio courses of their choice. Focused study in a concentration generally begins in the junior year. Three- and 400-level courses provide in-depth and focused studio experiences.

Studio Electives

Due to an evolving curriculum, there are many studio courses offered in emerging and hybrid media areas. These electives allow students to have the flexibility to select the courses most appropriate and interesting to them. A variety of seminars in contemporary art and visual studies are offered along with instruction in performance, video, sound, installation, public art, intervention art, new media, and gizmology. Studio electives may also be used to take courses in the Departments of Media Study and Theatre & Dance.

Senior Thesis Project

Students who are in the BFA degree program are required to take a two-semester senior thesis project that culminates in an exhibition or presentation. This two-course sequence involves preparation, research, proposal development, and advanced studio exploration. Advanced work should demonstrate technical expertise, independent motivation, personal interpretation/expression, as well as an awareness of the context of current contemporary works and artists. Students may work in a single media or a combination of several media.

Transfer Policy

Students accepted to UB must have a minimum GPA of 2.5 to be eligible to apply and be accepted by the art program in the Department of Visual Studies. Admission is based on a portfolio review/interview; which takes place in the fall semester. Because of space limitations, delaying the portfolio review could jeopardize admission to the Art Program.

When a student transfers from another institution, their course work must be equivalent to UB art courses and also must have a grade of B or higher to be transferable. Transfer credits are applied toward the department's degree requirements upon acceptance as an art major. Transfer students interested in Communication Design must have a second portfolio review to be admitted into this concentration.

FINE ARTS—BFA

Major Studio Concentrations in Communication Design, Emerging Practices, Painting, Photography, Print Media, Sculpture, and Visual Studies Studio

Acceptance Criteria

Minimum GPA of 2.5 overall.
Minimum GPA of 2.5 in art courses.
Minimum grade of B in all transfer fine art courses.

Advising Notes

The student must maintain a minimum GPA of 2.5 to remain in good standing in the Visual Studies Art Program. If students drop below this GPA, they will be placed on department probation and given a semester to improve their standing. Students who do not improve will be dismissed from the Art Program. To graduate, a minimum GPA of 2.5 is compulsory in all courses required for the BFA degree, including art history and studio art courses.

BFA students must complete required core courses, as well as the required courses in their chosen concentration.

Required Courses

ART 105 Studio 1: Art and the Everyday
ART 110 Studio 2: Constructed Body
ART 120 Studio 3: Public Space
ART 135 Studio 4: Self and Ritual
ART 140 Studio 5: Time-based Strategies
ART 207 Drawing Concepts I
ART 494 F Senior Thesis Project 1
ART 494 S Senior Thesis Project 2
VS 150 Visual Theory, Aesthetics, and Criticism
VS 200 Visual Studies Speaker Series (3 times)
VS 260 Visual Theory, Aesthetics and Criticism II

Two of the following:
AHI 101 Survey of Art History I: Egypt to Renaissance
AHI 102 Survey of Art History II: Italian Renaissance to Contemporary
AHI 103 Survey of Art History III

Required Concentration Courses

MAJOR STUDIO CONCENTRATION IN COMMUNICATION DESIGN

ART 208 Drawing Concepts II or any 200 level print media course: ART 202, ART 205, ART 225 or ART 259
ART 221 Typography
ART 240 History of Visual Communication
ART 250 Introduction to Digital Practices
ART 309 Digital Reproduction Processes
ART 319 Visual Semiotics and Rhetoric
ART 320 Design for New Media
ART 322 Design for Print and Electronic Media
ART 419 Identity Design
ART 422 Contemporary Design Issues
Three studio art electives

MAJOR STUDIO CONCENTRATION IN EMERGING PRACTICES

ART 208 Drawing Concepts II or any 200 level print media course: ART 202, ART 205, ART 225 or ART 259
ART 210 Introduction to Photography
ART 250 Introduction to Digital Practices
ART 380 Algorithmic Art
ART 383 Interactive Computer Art I
VS 375 Science, Culture, and Emerging Media
Two approved emerging practices electives from the following: ART 381, ART 382, ART 384, ART 385, ART 387, ART 402 or ART 426
Four studio art electives
One AHI elective

MAJOR STUDIO CONCENTRATION IN PAINTING

ART 208 Drawing Concepts II or any 200 level print media courses: ART 202, ART 205, ART 225 or ART 259
ART 211 Basic Painting
ART 212 Painting Processes
ART 216 Pictorial Structure
ART 223 Figure Drawing I or ART 307 Thematic Drawing
ART 229 Sculpture: Methods of Spatial Inquiry
ART 311 Alternative Painting Strategies
ART 312 Individual Painting Exploration
Five studio art electives
One AHI elective

MAJOR STUDIO CONCENTRATION IN PHOTOGRAPHY

ART 208 Drawing Concepts II or any 200 level print media course: ART 202, ART 205, ART 225 or ART 259
ART 210 Introduction to Photography
ART 250 Introduction Digital Practices
ART 313 Photography: Image and Text
ART 314 Photography Extended
ART 448 History of Photography
VS 449 Topics in Contemporary Photography

(Continued on next page)

Three approved photography electives from the following: ART 315, ART 340, ART 353, ART 354, ART 356, ART 360, or ART 401
Three studio art electives

MAJOR STUDIO CONCENTRATION IN PRINT MEDIA

ART 211 Basic Painting
ART 223 Figure Drawing or ART 307 Thematic Drawing
ART 205 Intaglio and Collagraph
ART 225 Lithography and Monoprint
ART 259 Introduction to Screenprint
ART 476 Topics in Printmaking
Three approved print media electives from the following: ART 202, ART 304, ART 306, or ART 326
Three studio art electives
One AHI elective

MAJOR STUDIO CONCENTRATION IN SCULPTURE

ART 208 Drawing Concepts II or any 200 level print media courses: ART 205, ART 225 or ART 259
ART 211 Basic Painting
ART 212 Painting Processes
ART 229 Sculpture: Methods of Spatial Inquiry
ART 329 Intermediate Sculpture 1
ART 330 Intermediate Sculpture 2
ART 333 Precision Production Techniques
ART 462 Installation
One approved sculpture elective from the following: ART 337, ART 429, ART 430
Three studio art electives
One AHI elective

MAJOR STUDIO CONCENTRATION IN VISUAL STUDIES

Four 200 Level Studio Art Electives
Three 300 level Studio Art Electives
One 300 or 400 level Studio Art Elective
One 400 level Studio Art Elective
One 300 Studio Art or Visual Studies Elective
One 300 or 400 Visual Studies Elective
One 400 level Visual Studies Elective
One AHI elective

Summary

Total required credit hours in art and art history 78

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

Major Studio Concentration in Communication Design

FIRST YEAR

Fall—ART 105, ART 110, VS 150, VS 200
Spring—ART 120, ART 135, ART 140

SECOND YEAR

Fall—AHI 101 or AHI 103; VS 200, ART 207, ART 250, one studio art elective
Spring—AHI 102 or AHI 103; ART 208 or any 200- level print media course; ART 221, VS 260

THIRD YEAR

Fall—VS 200, ART 240, ART 309, ART 319, one studio art elective
Spring—One studio art elective, ART 320, ART 322

FOURTH YEAR

Fall—ART 419, ART 494 F
Spring—ART 422, ART 494 S

Major Studio Concentration in Emerging Practices

FIRST YEAR

Fall—ART 105, ART 110, VS 150, VS 200
Spring—ART 120, ART 135, ART 140

SECOND YEAR

Fall—AHI 101 or AHI 103; VS 200, ART 207, ART 250, one studio art elective
Spring—AHI 102 or AHI 103; ART 208 or any 200- level print media course; ART 210, VS 260, one studio art elective

THIRD YEAR

Fall—VS 200, VS 375, ART 383, one emerging practices elective, one studio art elective
Spring—ART 380, one emerging practices elective, one AHI elective

FOURTH YEAR

Fall—ART 494 F, one studio art elective
Spring—ART 494 S

Major Studio Concentration in Painting

FIRST YEAR

Fall—ART 105, ART 110, VS 150, VS 200
Spring—ART 120, ART 135, ART 140

SECOND YEAR

Fall—AHI 101 or AHI 103; VS 200, ART 207, ART 211, ART 229
Spring—AHI 102 or AHI 103; ART 208 or any 200 level print media course; ART 212, VS 260

THIRD YEAR

Fall—VS 200, ART 311, ART 307 or ART 223, one studio art elective, one AHI elective
Spring—ART 216; ART 312, one studio art elective

FOURTH YEAR

Fall—ART 494 F, one studio art elective
Spring—ART 494 S, one studio art elective

Major Studio Concentration in Photography

FIRST YEAR

Fall—ART 105, ART 110, VS 150, VS 200
Spring—ART 120, ART 135, ART 140

SECOND YEAR

Fall—AHI 101 or AHI 103; VS 200, ART 207, ART 210, ART 250, AHI 448
Spring—AHI 102 or AHI 103; ART 208 or any 200 level print media course; VS 260, ART 313

THIRD YEAR

Fall—VS 200, ART 314, one photography elective, one studio art elective
Spring—One photography elective, one studio art elective

FOURTH YEAR

Fall—ART 494 F, one photography elective, one studio art elective
Spring—ART 494 S, VS 449

Major Studio Concentration in Print Media

FIRST YEAR

Fall—ART 105, ART 110, VS 150, VS 200
Spring—ART 120, ART 135, ART 140

SECOND YEAR

Fall—AHI 101 or AHI 103; VS 200, ART 207, ART 211; any 200-level print media course: ART 202, ART 205, ART 225, or ART 259
Spring—AHI 102 or AHI 103; ART 223 or ART 307; VS 260, any 200-level print media course: ART 202, ART 205, ART 225 or ART 259

THIRD YEAR

Fall—VS 200; one 300 level print media elective: ART 306; ART 302 or ART 304; ART 326; one studio art elective; one AHI elective
Spring—One 300-level print media electives: ART 306; ART 302 or ART 304; ART 326; two studio art electives

FOURTH YEAR

Fall—ART 476, ART 494 F
Spring—ART 494 S, one studio art elective

Major Studio Concentration in Sculpture

FIRST YEAR

Fall—ART 105, ART 110, VS 150, VS 200
Spring—ART 120, ART 135, ART 140

(Continued on next page)

SECOND YEAR
Fall—AHI 101 or AHI 103; VS 200, ART 207, ART 211, ART 229
Spring—AHI 102 or AHI 103; ART 208 or any 200 level print media course; ART 212, VS 260, ART 329

THIRD YEAR
Fall—VS 200, ART 330, ART 462, one AHI elective
Spring—ART 333, one approved sculpture elective, one studio art elective

FOURTH YEAR
Fall—ART 494 F, one studio art elective
Spring—ART 494 S, one studio art elective

Major Studio Concentration in Visual Studies Studio

FIRST YEAR
Fall—ART 105, ART 110, VS 150, VS 200
Spring—ART 120, ART 135, ART 140

SECOND YEAR
Fall—AHI 101 or AHI 103; VS 200, ART 207, Two 200 level ART courses
Spring—AHI 102 or AHI 103; VS 260, Two 200 level Studio Art courses

THIRD YEAR
Fall—VS 200, Two 300 Level Studio Art electives, One 300 level Visual Studies or Studio Art elective, one AHI elective
Spring—One 300 level Studio Art Elective, One 300 or 400 level Studio Art elective, One 300 or 400 level Visual Studies elective

FOURTH YEAR
Fall—ART 494 F, 400 level Visual Studies elective
Spring—ART 494 S, one 400 level Studio Art elective

Summary
Total required credit hours in art and art history 78

STUDIO ART—BA

General Studio, Communication Design, and Photography Concentrations

Acceptance Criteria
Minimum GPA of 2.5 overall.
Minimum GPA of 2.5 in art courses.
Minimum grade of B in all transfer fine art courses.

Advising Notes
A minimum GPA of 2.5 is required in all courses for a student to remain in good standing in the Department of Visual Studies Art Program. If students drop below this GPA, they will be placed on department probation and given a semester to improve their standing. Students who do not improve will be dismissed from the Department of Visual Studies Art Program. To graduate, a minimum of 2.5 is necessary in all courses required for the BA degree, including art history and studio art courses.

BA students must complete core courses, as well as the required courses in their chosen concentration.

Required Courses
ART 105 Studio 1: Art and the Everyday
ART 110 Studio 2: Constructed Body
ART 120 Studio 3: Public Space
ART 135 Studio 4: Self & Ritual
ART 140 Studio 5: Time-based Strategies
VS 150 Visual Theory, Aesthetics, and Criticism
Two of the following:
AHI 101 Survey of Art History I: Egypt to Renaissance
AHI 102 Survey of Art History II: Italian Renaissance to Contemporary
AHI 103 Survey of Art History III

Required Concentration Courses
General Studio Concentration
ART 207 Drawing Concepts I
Six studio art electives (minimum of three in one concentration)
Two AHI electives

COMMUNICATION DESIGN CONCENTRATION
ART 221 Typography
ART 240 History of Visual Communication
ART 250 Introduction to Digital Practices
ART 309 Digital Reproduction Processes
ART 319 Visual Semiotics and Rhetoric
ART 320 Design for New Media
ART 322 Design for Print and Electronic Media
ART 419 Identity Design
ART 422 Contemporary Design Issues
One AHI elective

PHOTOGRAPHY CONCENTRATION
ART 210 Introduction to Photography
ART 250 Introduction to Digital Practices
ART 313 Photography: Image and Text
ART 314 Photography Extended
ART 448 History of Photography
VS 449 Topics in Contemporary Photography
Three approved photography electives from the following: ART 315, ART 340, ART 353, ART 354, ART 356, ART 360, or ART 401
One AHI elective

Summary
Total required credit hours in art and art history 51-54

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

GENERAL STUDIO CONCENTRATION

FIRST YEAR
Fall—ART 105, ART 110, VS 150
Spring—ART 120, ART 135, ART 140

SECOND YEAR
Fall—AHI 101 or AHI 103; ART 207, one studio art elective
Spring—AHI 102 or AHI 103; one studio art elective

THIRD YEAR
Fall—One concentration elective, one AHI elective
Spring—One concentration elective, one studio art elective, one AHI elective

FOURTH YEAR
Fall—One concentration elective, one studio art elective
Spring—One studio art elective

COMMUNICATION DESIGN CONCENTRATION

FIRST YEAR
Fall—ART 105, ART 110, VS 150
Spring—ART 120, ART 135, ART 140

SECOND YEAR
Fall—AHI 101 or AHI 103; ART 250
Spring—AHI 102 or ART 103; ART 221

THIRD YEAR
Fall—ART 240, ART 309, ART 319
Spring—ART 320, ART 322, one AHI elective

FOURTH YEAR
Fall—ART 419
Spring—ART 422

(Continued on next page)

PHOTOGRAPHY CONCENTRATION

FIRST YEAR
Fall—ART 105, ART 110, VS 150
Spring—ART 120, ART 135, ART 140

SECOND YEAR
Fall—AHI 101 or AHI 103; ART 210, ART 250, AHI 448
Spring—AHI 102 or AHI 103; ART 313

THIRD YEAR
Fall—ART 314, one AHI elective
Spring—One photography elective

FOURTH YEAR
Fall—One photography elective
Spring—VS 449, one photography elective

Summary
Total required credit hours in art and art history 51-54

STUDIO ART—MINOR

About the Minor
The Art program in the Department of Visual Studies offers a minor sequence in Studio Art for students who are doing their major work in other departments.

Acceptance Criteria
Minimum GPA of 2.5 overall.
Minimum GPA of 2.5 in art courses.

Advising Note
For successful completion of the minor, a minimum GPA of 2.5 in all courses required for the minor is required.

Required Courses
VS 150 Visual Theory, Aesthetics and Criticism
Three 200 level studio art courses
OR two 200 and one 100 level studio art courses
One 300 level studio art course
One 300 or 400 level studio art course

Summary
Total required credit hours.....18

Art History

Department of Visual Studies

College of Arts and Sciences

202 Center for the Arts
North Campus
Buffalo, NY 14260-4640
Phone: (716) 645-6878
Fax: (716) 645-6970
Web site: www.visualstudies.buffalo.edu

David Schirm
Chair

Anthony Rozak
Director of Undergraduate Studies

For a listing of Art History faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Department of Visual Studies is combination of the former departments of Art and Art History. Visual Studies unites major aspects of art and visual culture: the practice of art, the history of art, and the critical study of visual images.

Visual Studies offers degree programs in art practice (ART), art history (AHI) as well as courses in visual studies (VS).

The Department of Visual Studies Art History Program is committed to exploring the visual arts (painting, sculpture, performance art, graphic arts, architecture, photography, and decorative arts) and what they reveal about culture. The art history faculty uses a diverse range of methodological approaches, to help students attain the necessary tools and knowledge to understand our visual world. Courses encompass the world's major geographic areas, and specific interests in social history, gender and race, post-colonialism, problems of taste and patronage, and myth and narrative. An art history major is ideal for students who wish to pursue a career in the arts, but it is equally valuable for those seeking to develop visual, analytical, and communication skills. Recent graduates have gone on to work in museums and art galleries, enroll in a variety of humanities graduate programs, and pursue careers in law, government, and business.

Degrees Offered

- **Undergraduate:** BA, Minor
- **Graduate:** MA

Advisement

See the Visual Studies Academic Advisor, 205 Center for the Arts for advisement. Students are also strongly urged to consult with faculty regarding their choice of individual courses.

Acceptance Information

All students are urged to apply to the department in person as early as possible, preferably during the sophomore year.

Academic Requirements

Majors begin by taking three survey courses (AHI 101, AHI 102, and AHI 103) that introduce the issues and major monuments of art history. Building on this foundation, students complete six upper-level courses, distributed among four geographic areas: the Americas, Africa, Asia, and Europe. These advanced courses provide more focused examinations of the history and concerns of specific societies. Majors are additionally required to take a pro-seminar, which provides a basic introduction to the debates and methods of the field; a methods course; and four sequential semesters of language study, or the equivalent. While a senior honors thesis is not required, majors are encouraged to consider undertaking such a project during their final year.

These requirements apply to all majors admitted to the Department of Visual Studies beginning with the fall 2004 semester. Majors accepted previously have the option of completing either the new or the older requirements.

Transfer Policy

All art history transfer courses must be evaluated and approved by the department. Forms may be obtained from the Office of Admissions, 15 Capen Hall. Generally, the following transfer courses will be accepted: the equivalent of AHI 101 and AHI 102 covering the history of art from ancient to modern, and any two of the area courses. Transcripts are required for all courses, and course descriptions are required for any of the area courses.

ART HISTORY—BA

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.0 in departmental courses.

Advising Notes
It is advantageous if the student has already taken both UGC 111 World Civilizations I and UGC 112 World Civilizations II as well as a course in literature, language, philosophy, or music history, though none is required.

Prerequisite Courses
Completion of or registration in any two of three required introductory courses: AHI 101, AHI 102, AHI 103.

Required Courses
AHI 101 Survey of Art History: Egypt to Renaissance
AHI 102 Survey of Art History: Italian Renaissance to Contemporary
AHI 103 Survey of Art History: non-Western
AHI 494 Methods of Art History
Six 200/300-level electives
Foreign language courses (0-16 credit hours)*

*Proficiency in a foreign language through the second semester of the second year or its equivalent is required, to be demonstrated through classroom courses or through alternatives outlined on page 12. S/U grading may not be selected for courses taken to fulfill this requirement.

Summary
Total required credit hours for the major..... 31-47

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—AHI 101
Spring—AHI 102

SECOND YEAR
Fall—AHI 103, AHI 494, first semester of a language*
Spring—200/300-level Americas AHI elective, second semester of a language*

THIRD YEAR
Fall—200/300-level European AHI elective, third semester of a language*
Spring—200/300-level Asia AHI elective, 200/300-level African/Caribbean AHI elective, fourth semester of a language*

FOURTH YEAR
Fall—AHI 494, 200/300-level European AHI elective
Spring—200/300-level Americas AHI elective

AHI Electives
AHI electives include any six courses from the core geographical areas, including one from Africa (continental and Diaspora), one from Asia, one from the Americas, and one from Europe. Each area must be covered, leaving two electives.

AFRICA
AAS 417 Contemporary Issues in Black Film Culture
AHI 347 African American Art
AHI 353 Art of Islam
AHI 354 Topics in Islamic Art
PRS 374 Art & Architecture of the Caribbean

ASIA
AHI 206 Introduction to Chinese Art
AHI 341 East Asian Art
AHI 345 Chinese Painting Premodern-Present
AHI 346 Chinese Painting and Calligraphy
AHI 383 Chinese Calligraphy

EUROPE
AHI 204 Mythology in Ancient Art
AHI 210 Art of the Middle Ages
AHI 251 Introduction to Modern Art
AHI 254 Art of 19th-Century
AHI 275 Art and Revolution
AHI 302 Art of Greece
AHI 304 Narration in Ancient Art
AHI 307 Art of Early Greece
AHI 310 Early Medieval Art
AHI 312 Romanesque Art
AHI 314 Gothic Art
AHI 317 Art of the Middle Ages
AHI 322 Italian Renaissance Art
AHI 324 Italian Mannerist Art
AHI 325 Greek Art and Mythology
AHI 328 Renaissance Architecture
AHI 330 Italian Baroque Art
AHI 331 Michelangelo and His Era
AHI 350 18th-Century European Art and Ideas
AHI 358 Impressionism and Postimpressionism
AHI 372 Art Between World Wars I and II
AHI 386 Modern Architecture
AHI 395 Contemporary Art

AMERICA (NORTH, CENTRAL AND SOUTH AMERICA, AND THE CARIBBEAN)
AHI 262 Art in America: An Introduction
AHI 311 Indigenous Arts: Past, Present
AHI 334 Native American Art: Economic Renewal or Ruin
AHI 342 Photography and the Colonial Gaze
AHI 360 Frank Lloyd Wright
AHI 363 Eakins, Homer, and Turn-of-the-Century America
AHI 364 American Realisms
AHI 365 Art and Culture in Victorian America
AHI 380 Image and Gender
AHI 387 American Art
AHI 390 American Architecture I: As American Pluralism

ART HISTORY—MINOR

Acceptance Criteria
Minimum GPA of 2.0 in AHI 101 Survey of Art History: Egypt to Renaissance, AHI 102 Survey of Art History: Italian Renaissance to Contemporary, or AHI 103 Survey of Art History: Non-Western.

Required Courses
Any two of the three survey courses (AHI 101, AHI 102, AHI 103)
Four courses above the 100 level; which must include a minimum of three geographic areas

Summary
Total required credit hours for the minor 18

Asian Studies

Asian Studies Program

College of Arts and Sciences

714 Clemens Hall
North Campus
Buffalo, NY 14260-4610
Phone: (716) 645-3474
Fax: (716) 645-3473
Web site: www.asianstudies.buffalo.edu
E-mail: asian-studies@buffalo.edu

Kristin Stapleton
Program Director

For a listing of Asian Studies faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Why Learn about Asia? We live in an age in which major cultures that formerly were assigned to particular geographical regions of the globe are now found globally. North America is no longer an outpost of Europe, but an invigorating composite of Asian, African, Latin, and European ingredients. Asian economies have worldwide presence, and political issues in that part of the world affect us profoundly at home. In art, theater, cinema, religion, fashion, and cuisine, Asia is here. By studying Asian civilizations and contemporary societies, we come to understand a significant part of humanity and acquire insight into ourselves.

The Asian Studies Program supports teaching, research, study abroad, and cultural events concerning Asia. The current focus of the program lies in the region of China, Japan, and Korea, with secondary attention to Southeast and South Asia.

Several Asian languages are taught in the Department of Linguistics. Chinese, Japanese, and Korean are each offered through the fourth-year level. Undergraduate minors may be elected in these languages. UB students may also study Arabic, Hindi, and Sanskrit.

Students can study abroad in Asia, undertaking language study, non-language classes, and graduate research. They can spend an academic year, a semester, or a summer at fine universities in China, India, Japan, Korea, Taiwan, Thailand, Singapore, and Vietnam. Academic credit can be transferred to UB. For information, refer to the Study Abroad section.

Degrees Offered

- **Undergraduate:** BA, Minor in Asian Studies

Degree Options

Students who wish to focus on Asia in their academic program have several options:

1. Major in Asian studies, administered by the Asian Studies Program
2. Special major in Chinese studies or Japanese studies. The director of Asian studies will advise students who wish to design a special major.
3. Asian studies track of the international studies concentration, administered by the Social Sciences Interdisciplinary Program
4. Minor in Asian studies, administered by the Asian Studies Program
5. Minor in Chinese, administered by the Department of Linguistics
6. Minor in Japanese, administered by the Department of Linguistics
7. Minor in Korean, administered by the Department of Linguistics

Asian-American Studies. Every semester, the Asian Studies Program and some academic departments offer courses exploring the history, literature, and social dynamics of the Asian-American experience. One in ten undergraduates at UB is an Asian-American.

Acceptance Information

The major permits the student to explore several regions and cultures of Asia as well as the Asian experience in America. At the same time, it requires a focus on one region or culture of Asia and a related Asian language. Students take a required core of four lower-division courses and four semesters of language. Upper-level electives (six courses) include both the social sciences and the humanities. The capstone experience is a senior research course. Some students who are majoring in an established discipline can elect Asian studies as a double major.

ASIAN STUDIES—BA

Acceptance Criteria

Minimum grade of C in any two courses required for the major.

Advising Notes

To graduate, minimum grade of C- required in any course in the major.

Required Courses

LANGUAGE PROFICIENCY

(12-18 credit hours, or 6-8 credit hours beyond the CAS language requirement. Some second-year language courses are 4 credits, others are 3 credits per semester.)

Four semesters. (Students who are native speakers of an Asian language may test out of the language requirement and be required to offer in its place two additional, 3-hour courses in the upper elective category or two semesters of an Asian language other than their own.)

CORE COURSES (10 CREDIT HOURS)

AS 101 Asian Studies
AS 110 The Asian American Experience
HIS 182 Asian Civilization II
PSC 229 East Asian Political Economy

UPPER LEVEL ELECTIVES (18 CREDIT HOURS)

Approved, 300/400-level courses, of which 9 credit hours must relate to the culture or region of the language selected. At least 6 credit hours must be in the social sciences and at least 6 credit hours must be in the humanities. Up to 6 credit hours of language courses at the 300-level and above may be counted.

CAPSTONE COURSE

AS 498 Senior Research

Summary

Total required credit hours for the major..... 37-39

Recommended Sequence of Program Requirements

FIRST YEAR

Fall—AS 101, first-semester language
Spring—HIS 182, second-semester language

SECOND YEAR

Fall—AS 110, third-semester language
Spring—PSC 229, fourth-semester language

THIRD YEAR

Fall—two upper-level electives
Spring—two upper-level electives

FOURTH YEAR

Fall—two upper-level electives
Spring—AS 498

Study abroad in Asia is recommended.

ASIAN STUDIES—MINOR

About the Minor

As a companion to a major in an academic or professional field, the interdisciplinary minor in Asian studies broadens and enriches the academic experience. It conveys skills and concepts needed for appreciating the rich civilizations and vibrant societies Asia and for dealing professionally with Asian peoples. The minor is a valuable credential for graduate study and an international career.

Acceptance Criteria

Minimum grade of C in any course required for the minor.

Advising Notes

Minimum grade of C required in any course in the minor.

Except for the language proficiency requirement, courses applied to another minor or major may not be applied to this minor.

Required Courses

LANGUAGE PROFICIENCY

Four courses: Intermediate proficiency in an Asian language. Students who satisfy the language requirement through a means other than coursework must take two advanced courses in addition to the three required below; only one of the two may be in the student's major department.

CORE COURSE

One of the following: AS 220 Culture of the Arts in East Asia, HIS 182 Asian Civilization II, PSC 229 East Asian Political Economy

ADVANCED COURSES

Three approved Asian Studies courses at the 300/400-level. Two must be outside the major department. One 300/400-level language course may be counted toward the advanced course requirement.

Summary

Total required credit hours for the minor 24-30

Athletics*

Division of Athletics

Recreation and Intramural Services

130 Alumni Arena
North Campus
Buffalo, NY 14260-5000
Phone: (716) 645-3469
Fax: (716) 645-2438
Web site: www.ubathletics.buffalo.edu/recreation/

Marcus Hutchins
Director of Recreation and Intramural Services

**Not a baccalaureate degree program*

For a listing of Athletics course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Recreational and Intramural Services offers a variety of sports classes that can be taken for academic credit. At present, approximately fifty physical education class sections are offered each semester in such areas as fitness and conditioning, racquetball, tennis, and Hatha yoga. In addition, classes leading to certification as a lifeguard, water safety instructor, or high school coach may be taken for academic credit, as may wellness classes. The registration procedure for physical education classes that carry an ATH prefix is not different from that for any other academic course.

No more than 8 credits of Athletic activity coursework can count toward the credits required for graduation with a bachelor's degree.

Biochemistry

Department of Biochemistry

School of Medicine and Biomedical Sciences

140 Farber Hall
South Campus
Buffalo, NY 14214-3000
Phone: (716) 829-2727
Fax: (716) 829-2725
Web site: www.smbs.buffalo.edu/bch

Kenneth Blumenthal
Chair

Gail R. Willsky
Director of Undergraduate Education
gwillsky@buffalo.edu

For a listing of Biochemistry faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Biochemistry addresses the chemical principles that underlie biological processes. The course of study in biochemistry emphasizes macromolecular structure and function, control of gene expression, and metabolic regulation as they relate to basic and biomedical science. The strength of the program lies in the extensive research experience in the laboratories of the faculty.

Degrees Offered

- **Undergraduate:** BS
- **Graduate:** MA, PhD

Advisement

Incoming freshman and sophomore students should contact our Biomedical Sciences senior academic advisor for advisement. Those students who have met the prerequisites and are ready to become declared majors should meet each semester with the director of undergraduate studies and/or the assistant to the chair.

Acceptance Information

The course requirements of the first two years are common to a number of science majors and allow the student considerable flexibility at the end of the sophomore year. There is no minor available in biochemistry.

Interested students should contact the director of undergraduate studies during the second semester of the sophomore year. Applicants should bring a copy of a current UB DARS report directly to the administrative assistant in the Department of Biochemistry. Students are admitted to full standing in the department after successful completion of their first two years.

BIOCHEMISTRY—BS

Acceptance Criteria

Applications accepted after three semesters, and/or after the student has completed 60 credit hours.
Minimum GPA of 2.0 overall.
Minimum GPA of 3.0 in prerequisite courses.

Advising Notes

Minimum GPAs of 2.0 in biochemistry courses, and 3.0 in prerequisite courses, are required to graduate.

Prerequisite Courses

Two of the following three BIO courses: BIO 200 Evolutionary Biology, BIO 201 Cell Biology, and BIO 205 Fundamentals of Biological Chemistry
BIO 215 Fundamentals of Biological Chemistry Laboratory
CHE 101 General Chemistry
CHE 102 General Chemistry
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 General Physics II Lab

(Continued on next page)

Required Courses
BCH 401 Introduction to Research
BCH 403 Biochemical Principles
BCH 404 Advanced Topics in Biochemistry
BCH 405 Research Topics in Biochemistry
BCH 407 Research Presentations
BCH 498 Undergraduate Research Participation in Biochemistry
CHE 319 Physical Chemistry
One restricted chemistry elective*
300/400-level science/math electives** (10 credit hours)

Summary
Total required credit hours for the major..... 82-84

See Baccalaureate Degree Requirements for general education and remaining university requirements

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—BIO 200, CHE 101, MTH 141
Spring—BIO 201, CHE 102, MTH 142

SECOND YEAR
Fall—CHE 201, PHY 107, one elective
Spring—BIO 215, CHE 202, PHY 108, PHY 158

THIRD YEAR*
Fall—BCH 401, BCH 403
Spring—BCH 404, BCH 498
Fall and Spring—One or two 300/400-level science/math elective(s)**
(CHE 319 may be taken in the third year)

FOURTH YEAR*
Fall—BCH 405, CHE 319, BCH 498
Spring—BCH 407, BCH 498
Fall and Spring—One or two 300/400-level science/math elective(s)**

**Third or fourth year students must take one course from among the following: CHE 320 Physical Chemistry, CHE 321 Inorganic Chemistry, CHE 413 Instructional Analysis, CHE 455 Synthetic Organic Chemistry, MCH 401 Principles of Medicinal Chemistry, MCH 311 Chemistry of Drug Action. Substitutions must be approved by the director.*

***Of the 10 credit hours of upper-level didactic science electives approved by the department, four credit hours of mathematics beyond MTH 142 may be included.*

Summary
Required credit hours in biochemistry (includes 8 credits of BCH 498) and upper-level science 36-37
Additional required science and math credit hours..... 46-47
Required credit hours in science and math (all levels)..... 82-84

Bioinformatics and Computational Biology

Department of Biological Sciences

College of Arts and Sciences

109 Cooke Hall
North Campus
Buffalo, NY 14260-1300
Phone: (716) 645-2363
Fax: (716) 645-2975
Web site: www.biology.buffalo.edu

Grayson H. Snyder
Director of Undergraduate Studies

Department of Computer Science and Engineering

School of Engineering and Applied Sciences

201 Bell Hall
North Campus
Buffalo, NY 14260-2000
Phone: (716) 645-3180
Fax: (716) 645-3464
Web site: www.cse.buffalo.edu

Jaynee Straw
Program Undergraduate Advisor

Department of Mathematics

College of Arts and Sciences

244 Mathematics Building
North Campus
Buffalo, NY 14260
Phone: (716) 645-6284
Fax: (716) 645-5039
Web site: www.math.buffalo.edu

John Ringland
Director of Undergraduate Studies

Department of Physiology and Biophysics

School of Medicine and Biomedical Sciences

124 Sherman Hall
South Campus
Buffalo, NY 14214-3078
Phone: (716) 829-2738
Fax: (716) 829-2344
Web site: www.smbs.buffalo.edu/phys/

Shinpei Ohki
Director of Undergraduate Biophysics Programs

About the Program

The Bioinformatics and Computational Biology (BCB) program is an interdisciplinary program that involves the application of mathematics and computing to the study of genes and proteins; computational biology addresses more general questions involving computing applied to cellular and sub-cellular structures. As such, students in bioinformatics and computational biology integrate topics of applied mathematics, computer science, and biology into specialties as diverse as genetics, biophysics, computational science, and microbiology. The program prepares students for graduate studies either in a bioinformatics-related field or in a traditional discipline, as well as for immediate entry into the job market.

The BCB is a single degree program. Students in the BCB program have the option to select a major from among four concentrations, offered in the Departments of Biological Sciences, Physiology and Biophysics, Computer Science and Engineering, and Mathematics. Students complete a full major in their area of concentration and also take additional courses important to bioinformatics in disciplines that complement their concentration. All students take courses in calculus, statistics, molecular biology, organic chemistry, and databases, as well as a core course in bioinformatics. In addition, students enroll in a bioinformatics seminar and complete an interdisciplinary project during their senior year. Through these capstone events and the bioinformatics course, students integrate different fields of study into a coherent whole.

Degrees Offered

- **Undergraduate:** BS
- **Concentrations:** Biological Sciences, Biophysics, Computer Science and Engineering, and Mathematics

Acceptance Information

Students may indicate a preference to major in bioinformatics at any time, although acceptance into the major occurs only after a review of a student's progress at the end of four semesters of coursework. Because of the significant academic demands of this program, acceptance into the bioinformatics program requires an overall minimum GPA of 2.5, and a minimum GPA of 3.0 in the prerequisite courses: BIO 205, CHE 101, CHE 102, CSE 115, CSE 116, MTH 141, and MTH 142. (Note: CHE 201 is a prerequisite to BIO 205. Students should complete CHE 201 or seek permission from the instructor of BIO 205 to waive this prerequisite). In exceptional circumstances, a student who wishes to major in bioinformatics may request a waiver or modification of

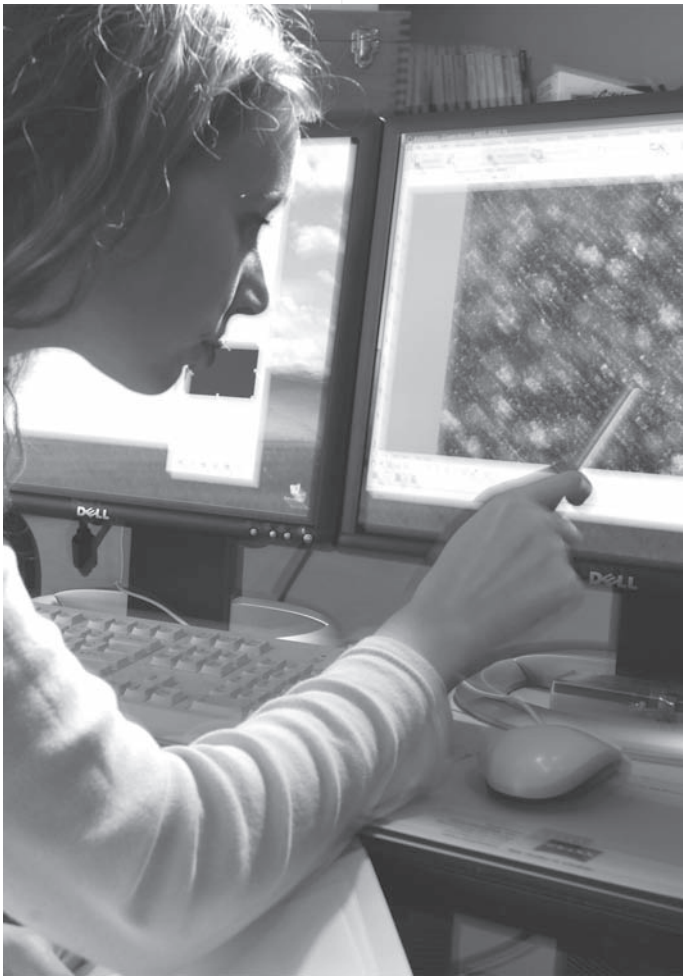
the acceptance requirements. It is recommended that the prerequisite courses be completed by the end of the fourth semester; students with advanced placement credit may complete these courses earlier and then request acceptance into the program. Students are expected to maintain a minimum GPA of 3.0 in all major courses (a student may request a waiver or modification of this GPA requirement in exceptional cases). Students who follow the BCB program of study for several semesters but, for whatever reason, decide not to complete those requirements can complete a traditional major in their area of concentration.

Academic Requirements

The core course requirements shared by all concentrations are:

- BIO 205; BIO 302 or BIO 319; BIO 400 (BIO 205 will serve as prerequisite for BIO 302)
- CHE 101, CHE 102, CHE 201 (or CHE 203 for non-BIO students). (Note: CHE 201 is a prerequisite to BIO 205; students should complete CHE 201 or seek permission from the instructor of BIO 205 to waive this prerequisite)
- CSE 115, CSE 116, CSE 250, CSE 462 (BIO students take either CSE 462 or CSE 337/MTH 337; CSE 250 will serve as a prerequisite for CSE 462),
- MTH 141, MTH 142, MTH 241, MTH 306, MTH 309, MTH 411(BIO and BPH students are exempt from MTH 241 and MTH 306)
- MTH 191/CSE 191, MTH 337/CSE 337 or MTH 437/CSE 437-MTH 438/CSE 438 (BIO students take either CSE 462 or CSE 337/MTH 337; BPH students take either BPH 410 or CSE 437/MTH 437)
- Senior Seminar
- Senior Project

For the senior project, students work with faculty from the department of their concentration. Personnel associated with the Center of Excellence in Bioinformatics may offer additional assistance and guidance to the students.



BIOINFORMATICS AND COMPUTATIONAL BIOLOGY—BS

Concentration in Biology

Acceptance Criteria
Minimum GPA of 2.5 overall.
Minimum GPA of 3.0 in the prerequisite courses.

Advising Note
Students must maintain a minimum GPA of 3.0 in all major courses to graduate.

Prerequisite Courses
BIO 205 Fundamentals of Biological Chemistry
CHE 101 General Chemistry I
CHE 102 General Chemistry II
CSE 115 Introduction to Computer Science for Majors I
CSE 116 Introduction to Computer Science for Majors II
MTH 141 College Calculus I
MTH 142 College Calculus II

Required Courses
BIO 200 Evolutionary Biology
BIO 201 Cell Biology
BIO 215 Fundamentals of Biological Chemistry Lab
BIO 309 Ecology
BIO 319 Genetics
BIO 329 Genetics Lab
BIO 328 General Physiology
BIO 367 Developmental Biology
BIO 370 Developmental Biology Lab
BIO 400 Bioinformatics
CHE 201 Organic Chemistry I
CHE 202 Organic Chemistry II
CSE 250 Data Structures
CSE 191 Discrete Structures/MTH 191 Introduction to Discrete Mathematics I
MTH 337/CSE 337 Introduction to Scientific Computing or CSE 462 Database Concepts (CSE 305 prerequisite waived) or MTH 437/CSE 437 Introduction to Numerical Analysis
MTH 309 Introduction to Linear Algebra
MTH 411 Probability
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 General Physics Lab
Senior Project
Senior Seminar

Summary
Total required credit hours for the major (concentration in bioinformatics-biology) 104

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—BIO 200, CHE 101, MTH 141
Spring—BIO 201, CHE 102, MTH 142

SECOND YEAR
Fall—BIO 309, CHE 201, CSE 115, CSE 191/MTH 191
Spring—BIO 205, BIO 215, CHE 202, CSE 116

THIRD YEAR
Fall—BIO 319, BIO 329, MTH 309
Spring—BIO 367, BIO 370, CSE 250

FOURTH YEAR
Fall—MTH 411, PHY 107, Senior Seminar
Spring—BIO 328, BIO 400; MTH 337/CSE 337 or CSE 462 or MTH 437/CSE 437; PHY 108, PHY 158, Senior Project

BIOINFORMATICS AND COMPUTATIONAL BIOLOGY—BS

Concentration in Biophysics

Acceptance Criteria
Minimum GPA of 2.5 overall.
Minimum GPA of 3.0 in the prerequisite courses.

Advising Note
Students must maintain a minimum GPA of 3.0 in all major courses to graduate.

Prerequisite Courses
BIO 205 Fundamentals of Biological Chemistry or BCH 403 Principles of Biochemistry
CHE 101 General Chemistry I
CHE 102 General Chemistry II
CSE 115 Introduction to Computer Science
CSE 116 Introduction to Computer Science
MTH 141 College Calculus I
MTH 142 College Calculus II

Required Courses
BIO 201 Cell Biology
BIO 302 Introduction to Molecular Biology or BIO 319 Genetics
BIO 400 Bioinformatics
BPH 400 Principles of Biophysics
BPH 402 Biophysics Problems for Undergraduates
BPH 410 Introductory Quantitative Biology or CSE 437/MTH 437 Introduction to Numerical Analysis 1
BPH 458 Experimental Biophysics*
BPH 498 Biophysics Basics: Processes
CHE 203 Organic Chemistry
CHE 319 Physical Chemistry or CHE 349 Physical Chemistry for Life Sciences
CSE 250 Data Structures
CSE 462 Database Concepts (CSE 305 prerequisite waived)
CSE 191 Discrete Structures/MTH 191 Introduction to Discrete Mathematics I
MTH 309 Introductory Linear Algebra
MTH 411 Probability
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 General Physics Lab
PHY 207 General Physics III
*Senior project (may use BPH 458 for this requirement)
Senior Seminar

Summary
Total required credit hours for the major (concentration in bioinformatics-biophysics).....99

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 101, MTH 141
Spring—BIO 201, CHE 102, MTH 142, PHY 107

SECOND YEAR
Fall—CHE 203, CSE 115, PHY 108, PHY 158
Spring—BIO 205 or BCH 403; CSE 116, PHY 207

THIRD YEAR
Fall—BIO 302 or BIO 319; BPH 400; CHE 319 or CHE 349; CSE 191/MTH 191
Spring—BPH 498, CSE 250, MTH 309

FOURTH YEAR
Fall—BPH 402, BPH 410 or CSE 437/MTH 437, CSE 462, MTH 411
Spring—BIO 400; BPH 458 or Senior Project; senior seminar

BIOINFORMATICS AND COMPUTATIONAL BIOLOGY—BS

Concentration in Computer Science and Engineering

Acceptance Criteria
Minimum GPA of 2.5 overall.
Minimum GPA of 3.0 in the prerequisite courses.

Advising Note
Students must maintain a minimum GPA of 3.0 in all major courses to graduate.

Prerequisite Courses
BIO 205 Fundamentals of Biological Chemistry
CHE 101 General Chemistry I
CHE 102 General Chemistry II
CSE 115 Introduction to Computer Science
CSE 116 Introduction to Computer Science
MTH 141 College Calculus I
MTH 142 College Calculus II

Required Courses
BIO 302 Introduction to Molecular Biology or BIO 319 Genetics
BIO 400 Bioinformatics
CHE 201 Organic Chemistry (LEC only) or CHE 203 Organic Chemistry
CSE 241 Digital Systems
CSE 250 Data Structures
CSE 305 Introduction to Programming Languages
CSE 341 Computer Organization
CSE 396 Introduction to the Theory of Computation
CSE 421 Introduction to Operating Systems
CSE 442 Software Engineering
CSE 462 Database Concepts
CSE 191 Discrete Structures/MTH 191 Introduction to Discrete Mathematics I
CSE 337/MTH 337 Introduction to Scientific Computing or CSE 437/MTH 437 Introduction to Numerical Analysis I *
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
MTH 309 Introduction to Linear Algebra
MTH 411 Probability
Senior Project
Senior Seminar

**CSE 438/MTH 438 Introduction to Numerical Analysis II is an optional additional course*

Summary
Total required credit hours for the major (concentration in bioinformatics-computer science and engineering) 101

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 101, CSE 115, MTH 141
Spring—CHE 102, CSE 116, MTH 142

SECOND YEAR
Fall—CHE 201 or CHE 203; CSE 191/MTH 191, CSE 241, MTH 241
Spring—BIO 205, CSE 250, CSE 341

THIRD YEAR
Fall—CSE 305, CSE 462, MTH 309
Spring—CSE 421, CSE 442, MTH 306

FOURTH YEAR
Fall—BIO 302 or BIO 319; MTH 411, Senior Seminar
Spring—BIO 400, CSE 396; CSE 337/MTH 337 or CSE 437/MTH 437; Senior Project

BIOINFORMATICS AND COMPUTATIONAL BIOLOGY—BS

Concentration in Mathematics

Acceptance Criteria
Minimum GPA of 2.5 overall.
Minimum GPA of 3.0 in the prerequisite courses.

Advising Note
Students must maintain a minimum GPA of 3.0 in all major courses to graduate.

Prerequisite Courses
BIO 205 Fundamentals of Biological Chemistry
CHE 101 General Chemistry I
CHE 102 General Chemistry II
CSE 115 Introduction to Computer Science
CSE 116 Introduction to Computer Science
MTH 141 College Calculus I
MTH 142 College Calculus II

Required Courses
BIO 302 Introduction to Molecular Biology or BIO 319 Genetics
BIO 400 Bioinformatics
CHE 201 Organic Chemistry or CHE 203 Organic Chemistry (LEC only)
CSE 250 Data Structures
CSE 462 Database Concepts (CSE 305 prerequisite waived)
CSE 191 Discrete Structures/MTH 191 Introduction to Discrete Mathematics I
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
MTH 309 Introduction to Linear Algebra
MTH 311 Introduction to Higher Mathematics
MTH 411 Probability
MTH 412 Introduction to Statistical Inference
MTH 418 Survey of Partial Differential Equations
MTH 419 Introduction to Algebra I
MTH 431 Introduction to Real Variables I
MTH 437/CSE 437 Introduction to Numerical Analysis I
MTH 438/CSE 438 Introduction to Numerical Analysis II
Senior Project
Senior Seminar

Summary
Total required credit hours for the major (concentration in bioinformatics-mathematics).....103

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 101, CSE 115, MTH 141
Spring—CHE 102, CSE 116, MTH 142

SECOND YEAR
Fall—CHE 203, CSE 191/MTH 191, MTH 241, MTH 306
Spring—BIO 205, CSE 250, MTH 309, MTH 311

THIRD YEAR
Fall—BIO 302, MTH 411, MTH 419
Spring—MTH 412, MTH 418

FOURTH YEAR
Fall—MTH 437/CSE 437, MTH 431, Senior Seminar
Spring—BIO 400, MTH 438/CSE 438, CSE 462, Senior Project

Biological Sciences

Department of Biological Sciences

College of Arts and Sciences

109 Cooke Hall
North Campus
Buffalo, NY 14260-1300
Phone: (716) 645-2363
Fax: (716) 645-2975
Web site: www.biology.buffalo.edu

Gerald Koudelka
Chair

Grayson Snyder
Director of Undergraduate Studies

For a listing of Biological Sciences faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Department of Biological Sciences offers three programs leading to baccalaureate degrees and two that are combined undergraduate/graduate degree programs.

The bachelor of arts degree. Students qualify for the bachelor of arts degree by successfully completing at least 33 credits of coursework within the department plus 38 credits in chemistry, physics and mathematics. The curriculum for the BA program includes required core courses, as well as elective laboratory and lecture courses. It is designed to provide a broad-based education in the biological sciences.

The bachelor of science degree. Students qualify for the bachelor of sciences degree by successfully completing 44 credits of coursework within the department plus 38 credits of chemistry, physics, and mathematics. The BS program is designed to provide the opportunity for in-depth study within particular sub-disciplines of the biological sciences; specific curricula have been formulated for study in (a) cell and molecular biology, (b) ecology and evolutionary biology and (c) pre-health studies.

The bachelor of science degree in bioinformatics and computational biology. In this highly interdisciplinary program, students integrate coursework in applied mathematics, computer science, and the biological sciences and learn how to apply mathematics and computing to the study of genes and proteins. This training prepares students for graduate education in a bioinformatics-related field or for entry into the workforce of this emerging discipline.

The university offers this bachelor of science degree in bioinformatics and computational biology with options for a concentration in biology, biophysics, computer science and engineering, and mathematics. Please refer to the bioinformatics and computational biology program for further details.

The combined bachelor of arts/master of science degree. To qualify for the combined degree, students must complete 30 credits of coursework within the department and 38 credits of chemistry, physics, and mathematics in three years of undergraduate study. Then, following admission into the department's graduate program, students must complete an additional 38 credits of graduate coursework over two years. A combined BA/MS degree is awarded after only five years of study. (When the two degrees are completed separately, a BA degree normally takes four years and an MS degree normally takes two years.)

The combined Bachelor of Science/Doctor of Dental Surgery degree. This program combines three years of undergraduate study in biological sciences and four years of graduate work in dentistry, and a combined BS/DDS degree is awarded after seven years. Applicants may be accepted into the program prior to the beginning of the freshman year or while enrolled as a major in the Department of Biological Sciences. Further details concerning this program may be found at the School of Dental Medicine website: www.sdm.buffalo.edu.

In addition to baccalaureate degrees, the Department of Biological Sciences offers a minor in the biological sciences. To qualify, students must complete a short list of required courses and elective courses within the department, achieving a total of 22 credits. A special biotechnology minor is also available for chemical engineering students.

Degrees Offered

- **Undergraduate:** BA, BS, Minor
- **Combined:** BA/MS, BS/DDS
- **Graduate:** MA, MS, PhD

Advisement

Each accepted student is assigned a faculty advisor within the department at the time of acceptance. The advisor should be consulted concerning program requirements and the selection of courses to meet those requirements.

Acceptance Information

Except for the BS degree program in bioinformatics and computational biology, the department accepts students as majors after they have successfully completed all three of the following with a minimum combined GPA of 2.0:

1. A two-semester course in general chemistry (CHE 101-CHE 102, or equivalent),
2. A two-semester course in college calculus (MTH 121-MTH 122, MTH 141-MTH 142, or equivalent)
3. Two college-level biology courses (BIO 200, BIO 201, or equivalent).

These criteria apply to all students, regardless of whether they started college at UB or transferred to UB from another institution. The application form, including a current DARS report, is to be submitted directly to the Department of Biological Sciences.

For the BA/MS combined degree program, undergraduate biology majors (BA or BS) apply at the end of their sophomore year or the beginning of their junior year. A minimum GPA of 3.0 in both science and general education courses and three supportive letters of recommendation from faculty are needed. The combined degree is awarded at the completion of the fifth year of the program. Separate BA and MS degrees are not awarded.

Transfer Policy

Students transferring to UB from other institutions may use course credits achieved elsewhere to meet requirements for baccalaureate degrees offered by the department. Courses from other institutions that have been previously evaluated in comparison to UB courses are listed on UB's course articulation Web site, http://www.taurus.buffalo.edu. To fulfill requirements with courses that were completed at other institutions but are not listed on the TAURUS Web site, students must obtain approval through a petitioning process overseen by the department's director of undergraduate studies. Petition forms are available in the Department of Biological Sciences office, located in 109 Cooke Hall (North Campus). In addition to filling out a petition, the student will be asked to provide supporting documents for transfer courses, such as a catalog description and/or syllabus of the course(s) to be transferred to UB.

Transfer students are reminded that at least 16 credit hours of upper-division coursework must be completed within the department with a minimum GPA of 2.0.

BIOLOGICAL SCIENCES—BS

Acceptance Criteria

Minimum GPA of 2.0 in BIO 200, BIO 201, CHE 101, CHE 102, and MTH 121-MTH 122 (or their equivalent).

Advising Notes

Minimum GPA of 2.0 in biology courses and minimum GPA of 2.0 in required chemistry, physics, and mathematics courses for degree conferral.

Certificates are awarded to students who concentrate their study in one of the following three programs: (1) cell and molecular biology, (2) ecology and evolutionary biology, or (3) pre-health studies. Details of these programs are available at http://www.biology.buffalo.edu.

Prerequisite Courses

BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry
CHE 102 General Chemistry
MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I
MTH 122 Survey of Calculus and Its Applications II or MTH 142 College Calculus II

Required Courses

BIO 205 Fundamentals of Biological Chemistry
BIO 309 Ecology
BIO 319 Genetics
BIO 328 General Physiology
BIO 367 Developmental Biology
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
PHY 101/PHY 151 College Physics I/Lab or PHY 107 General Physics I
PHY 102/PHY 152 College Physics II/Lab or PHY 108/PHY 158 General Physics II/Lab
Four BIO lab courses: choices include BIO 215 Fundamentals of Biological Chemistry Laboratory, BIO 310 Ecology Methods, BIO 329 Genetics Laboratory, BIO 338 General Physiology Laboratory, BIO 370 Developmental Biology Laboratory
BIO electives to reach 44 credit hours minimum for the BS degree (at least 6 credit hours of BIO electives must be at the 400-level)

Summary

Total required credit hours for the major.....82

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—BIO 200, CHE 101; MTH 121 or MTH 141
Spring—BIO 201, CHE 102; MTH 122 or MTH 142

SECOND YEAR
Fall—BIO 309, BIO lab course, CHE 201
Spring—BIO 205, BIO lab course, CHE 202

THIRD YEAR
Fall—BIO 319, BIO lab course, one BIO elective
Spring—BIO 328, BIO 367, two BIO lab courses

FOURTH YEAR
Fall—PHY 101/PHY 151 or PHY 107
Spring—PHY 102/PHY 152 or PHY 108/PHY 158
Fall or Spring—Remaining BIO electives

BIOLOGICAL SCIENCES—BA

Acceptance Criteria
Minimum GPA of 2.0 in the prerequisite courses.

Advising Note
Minimum GPA of 2.0 in biology courses and minimum GPA of 2.0 in required chemistry, physics and mathematics courses for degree conferral.

Prerequisite Courses
BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry
CHE 102 General Chemistry
MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I
MTH 122 Survey of Calculus and Its Applications II or MTH 142 College Calculus II

Required Courses
BIO 205 Fundamentals of Biological Chemistry
BIO 319 Genetics
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
PHY 101/PHY 151 College Physics I (including PHY 151 lab) or PHY 107 General Physics I
PHY 102/PHY 152 College Physics II/Lab or PHY 108/PHY 158 General Physics II/Lab
Three BIO lab courses: choices include BIO 215 Fundamentals of Biological Chemistry Laboratory, BIO 310 Ecology Methods, BIO 329 Genetics Laboratory, BIO 338 General Physiology Laboratory, BIO 467 Techniques in Immunology, BIO 370 Developmental Biology Laboratory, and BIO 498 Honors in Biology (2 credits) or BIO 499 Independent study (2 credits)
BIO elective(s) to reach 33 credit hours minimum for the BA degree (No more than 3 credits of any combination or BIO 497, BIO 498, or BIO 499 may count towards the BA degree)

Summary
Total required credit hours for the major.....71

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements
FIRST YEAR
Fall—BIO 200, CHE 101; MTH 121 or MTH 141
Spring—BIO 201, CHE 102; MTH 122 or MTH 142

SECOND YEAR
Fall—CHE 201, BIO elective(s)
Spring—BIO 205; BIO elective(s) or lab(s); CHE 202

THIRD YEAR
Fall—BIO 319; BIO elective(s) or lab(s)
Spring—BIO elective(s) or lab(s)

FOURTH YEAR
Fall—PHY 101/PHY 151 or PHY 107; BIO elective(s)
Spring—PHY 102/PHY 152 or PHY 108/PHY 158; BIO elective(s)

BIOLOGICAL SCIENCES—BA/MS

Acceptance Criteria
INITIAL ACCEPTANCE TO BA PROGRAM
Minimum GPA of 2.0 in the prerequisite courses.

SUBSEQUENT UPGRADED APPLICATION TO BA/MS PROGRAM
Minimum GPA of 3.0 in science courses, minimum GPA of 3.0 in general education courses, completion of CHE 201-202, BIO 205, and BIO 309, and three letters of recommendation.

Prerequisite Courses
BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry
CHE 102 General Chemistry
MTH 141 College Calculus I
MTH 122 Survey of Calculus and Its Applications II or MTH 142 College Calculus II

Required Courses
BIO 205 Fundamentals of Biological Chemistry
BIO 309 Ecology
BIO 319 Genetics
BIO 328 General Physiology
BIO 367 Developmental Biology
BIO 600 Problems in Biology
BIO 608 Graduate Research
BIO 610 Graduate Student Seminar
BIO 614 Departmental Seminar
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
PHY 101/PHY 151 College Physics I (including PHY 151 lab) or PHY 107 General Physics I
PHY 102/PHY 152 College Physics II/Lab or PHY 108/PHY 158 General Physics II/Lab
Three BIO lab courses: choices include BIO 215 Fundamentals of Biological Chemistry Laboratory, BIO 310 Ecology Methods, BIO 329 Genetics Laboratory, BIO 338 General Physiology Laboratory, BIO 370 Developmental Biology Laboratory
18 credit hours of graduate-level electives (should be selected in consultation with faculty advisor)

Summary
Total required credit hours for the undergraduate portion.....102

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the Graduate School's Policies and Procedures Manual for requirements for master's degree candidates.

Recommended Sequence of Program Requirements
FIRST YEAR
Fall—BIO 200, CHE 101; MTH 121 or MTH 141
Spring—BIO 201, CHE 102; MTH 122 or MTH 142

SECOND YEAR
Fall—BIO 309, BIO lab course, CHE 201
Spring—BIO 205, BIO lab course, CHE 202

THIRD YEAR
Fall—BIO 319, BIO lab course; PHY 101/PHY 151 or PHY 107
Spring—BIO 328, BIO 367, BIO lab courses; PHY 102/PHY 152 or PHY 108/PHY 158

FOURTH YEAR
Fall—BIO 600, BIO 610, BIO 614, 8 credit hours of graduate-level electives
Spring—BIO 600, BIO 610, BIO 614, 8 credit hours of graduate-level electives

FIFTH YEAR
Fall—BIO 608, BIO 610, BIO 614, 2 credit hours of graduate-level electives
Spring—BIO 608, BIO 610, BIO 614

BIOLOGICAL SCIENCES—BS/DDS

Acceptance Criteria

INITIAL ACCEPTANCE TO BS/DDS PROGRAM

Applications for entry into the combined BS/DDS program are to be submitted to the Student Admissions Committee of the School of Dental Medicine. Visit http://www.sdm.buffalo.edu for details.

Advising Notes

Minimum GPA of 3.5 overall and 3.5 in required science courses (biological sciences, chemistry, physics and mathematics) at the undergraduate level prior to entering dental curriculum.

Prerequisite Courses

BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry
CHE 102 General Chemistry
MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I
MTH 122 Survey of Calculus and Its Applications II or MTH 142 College Calculus II

Required Courses

BIO 205 Fundamentals of Biological Chemistry
BIO 309 Ecology
BIO 319 Genetics
BIO 367 Developmental Biology
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
PHY 101/PHY 151 College Physics I (including PHY 151 lab) or PHY 107 General Physics I
PHY 102/PHY 152 College Physics II/Lab or PHY 108/PHY 158 General Physics II/Lab
Three BIO lab courses: choices include BIO 215 Fundamentals of Biological Chemistry Laboratory, BIO 310 Ecology Methods, BIO 319 Genetics Laboratory, BIO 370 Developmental Biological Laboratory

Summary

Total required credit hours for the undergraduate portion.....108

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall—BIO 200, CHE 101; MTH 121 or MTH 141
Spring—BIO 201, CHE 102; MTH 122 or MTH 142

SECOND YEAR

Fall—BIO 309, BIO lab course, CHE 201, PHY 101/PHY 151 or PHY 107
Spring—BIO 205, BIO lab course, CHE 202, PHY 102/PHY 152 or PHY 108/PHY 158

THIRD YEAR

Fall—BIO 319, BIO lab course
Spring—BIO 367, BIO lab course

FOURTH YEAR

Courses from the dental school curriculum.

BIOLOGICAL SCIENCES—MINOR

Acceptance Criteria

Minimum GPA of 2.0 in prerequisite courses.

Advising Notes

Minimum GPA of 2.0 in BIO courses is required for a successful completion of the minor.

Prerequisite Courses

BIO 200 Evolutionary Biology
BIO 201 Cell Biology

Required Courses

BIO 205 Fundamentals of Biological Chemistry
BIO 215 Fundamentals of Biological Chemistry Laboratory
CHE 101 General Chemistry I
CHE 102 General Chemistry II
CHE 201 Organic Chemistry I
BIO electives at the 300-400 level to reach 22 credit hours of BIO coursework.

Summary

Total required credit hours for the minor 37

Biomedical Sciences

School of Medicine and Biomedical Sciences

128 Biomedical Education Building
South Campus
Buffalo, NY 14214-3078
Phone: (716) 829-3005
Fax: (716) 829-2437
Web site: www.smbs.buffalo.edu/bms
E-mail: langdj@buffalo.edu

Mary Anne Rokitka
Associate Dean

David J. Lang
Senior Academic Advisor

For a listing of Biomedical Sciences course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The BS in Biomedical Sciences enables students to increase the breadth of their undergraduate experience, combine courses from various departments within the School of Medicine and Biomedical Sciences, and focus their undergraduate experience in preparation for professional or graduate studies. This major requires that students take several core courses that are traditionally considered prerequisites for professional programs in medicine, dentistry, optometry and veterinary medicine. These courses are also generally required for admission to most graduate programs in various health science disciplines.

Degrees Offered

- **Undergraduate:** BS

Advisement

Students interested in pursuing a BS in Biomedical Sciences should contact the School of Medicine and Biomedical Sciences academic advisor for more information. Applicants to the program must submit a UB DARS report with a minimum GPA of 2.8 in the math/science prerequisite courses. Prior to applying, students should have completed at least three semesters of chemistry, two semesters of biology, two semesters of calculus, and one semester of physics with no grade less than C. Application deadlines are September 15 for

spring admission and February 15 for fall admission.

Transfer Policy

Prerequisite courses may be transferred from other educational institutions if they are equivalent. Students should consult with the School of Medicine and Biomedical Sciences academic advisor to determine equivalency.

BIOMEDICAL SCIENCES—BS

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum GPA of 2.8 in the prerequisite courses.

Prerequisite Courses

BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry or CHE 105 Chemistry: Principles and Applications
CHE 102 General Chemistry or CHE 106 Chemistry: Principles and Applications
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I
MTH 122 Survey of Calculus and Its Applications II or MTH 142 College Calculus II
PHY 101/PHY 151 College Physics I/Lab or PHY 107 General Physics I
PHY 102/PHY 152 College Physics II/Lab or PHY 108/PHY 158 General Physics II/Lab

Required Courses

ANA 113 Human Anatomy or APY 345/APY 346 Comparative Primate Anatomy
BCH 403 Principles of Biochemistry or BIO 205 Fundamentals of Biological Chemistry or PMY 302 Introduction to Pharmacology
MIC 301 Fundamentals of Microbiology
PGY 300 Human Physiology and PGY 412 Applied Physiology or PGY 451/PGY 452 Human Physiology I and II
STA 119 Statistical Methods or PSY 207 Psychological Statistics

A minimum grade of "C" in each of the core courses is required on either the first of second attempt and a maxiumum of two required courses may be repeated.

Biomedical Science electives: a minimum of 18-24 credit hours with at least three electives at the 3/400 level excluding BMS 496 and BMS 498.

Summary

Total required credit hours for the major..... 87-93

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—BIO 200, CHE 101, MTH 121
Spring—BIO 201, CHE 102, MTH 122

SECOND YEAR
Fall—CHE 201, PHY 101/PHY 151
Spring—CHE 202, PHY 102/PHY 152

THIRD YEAR
Fall—ANA 113, PGY 300
Spring—PGY 412, STA 119

FOURTH YEAR
Fall—BCH 403 or PMY 302, biomedical sciences electives
Spring—MIC 301, biomedical sciences electives

Electives and Course Groupings

AAS 414 Health Problems in the Black Community
APY 248 Human Genetics
APY 275 Introduction to Medical Anthropology
APY 276 Introduction to Ethnomedicine
APY 345 Comparative Primate Anatomy
APY 346 Primate Dissections
APY 348 Forensic Anthropological Osteology
APY 448 Human Genetics/Legal and Ethical Issues
APY 476 Health Care in the United States
BIO 319 Genetics
BIO 410 Biophysical Aspects of Macromolecules
BIO 448 Endocrinology
BPH 400 Biological Physics
BPH 403 Molecular Biophysics
BPH 405 Biophysical Basics: Processes
CHE 349 Physical Chemistry for Life Sciences
CL 151 Medical Terminology
HIS 215 Death in America
MCH 300 Herbs and Phytomedicinals
MCH 311 The Chemistry of Drug Action
MFC 250 Health Care in the U.S.
MFC 358 Introduction to Medical Devices and Implants
MIC 401 General Microbiology
MT 401 Clinical Biochemistry
MT 402 Fundamentals of Immunology
MT 422 Biomolecular Technology and Diagnostics
MT 428 Forensic Science
NTR 108 Human Nutrition
NTR 401 Nutrition and Health
NTR 402 Nutrition in the Life Cycle
PGY 405 Cell Physiology
PGY 427 Neurophysiology
PGY 451 Human Physiology I
PGY 452 Human Physiology II
PGY 503 Physiological Measurements in Small Animals
PHI 337 Social and Ethical Values in Medicine
PMY 302 Introduction to Pharmacology
PSY 322 Abnormal Psychology
PSY 325 Health Psychology
PSY 351 Biopsychology
SOC 304 Sociology of Aging
SOC 322 Introduction to Medical Sociology
UGC 303 Great Discoveries in Science: The Macroworld (Section M)
WS 260 Women and Health

Biophysics

Department of Physiology and Biophysics

School of Medicine and Biomedical Sciences

124 Sherman Hall
South Campus
Buffalo, NY 14214-3078
Phone: (716) 829-2738
Fax: (716) 829-2344
Web site: www.smbs.buffalo.edu/phb/
E-mail: pgy-bph@buffalo.edu

Harold C. Strauss
Chair

Shinpei Ohki
Director of Undergraduate Studies

For a listing of Biophysics faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The biophysics faculty share a common interest in combining biology and physical principles to solve important research questions in biology and medical sciences. Students with strong interests in biology as well as cell and molecular biology who wish to understand how to apply physical and chemical principles to biological problems are encouraged to apply.

Biophysics faculty study the structure and function of proteins, nucleic acids and lipids at the single molecular level. They investigate dynamics in areas such as vision and motility as well as molecular structure; signal transduction, transmission in nerve and muscle; cell-cell and cell-substrate interactions; structural determination of biological macromolecules; and tissues by using various spectroscopic methods, microscopic and imaging techniques.

The Biophysics program also includes Medical Physics for those who plan to pursue a career in research or clinical medical physics, including various medical imaging techniques, therapeutic radiation or nuclear medicine physics. Students will receive the necessary background for a career or further studies in Biophysics or Medical Physics.

Students who wish to apply for acceptance into the program should bring a copy of their current UB DARS report directly to the department as soon as they decide to major in biophysics. To obtain the maximum benefit from the program, it is important to begin as early as possible.

Degrees Offered

- **Undergraduate:** BS
- **Concentrations:** BS in Bioinformatics and Computational Biology
- **Graduate:** MS, PhD

Degree Options

The university offers a Bachelor of Science degree in bioinformatics and computational biology, with options for a concentration in biology, biophysics, computer science and engineering, or mathematics. Please refer to the bioinformatics and computational biology program in this catalog for further details.

Advisement

Students interested in biophysics should contact the program director for more information.

Transfer Policy

If prospective majors have taken courses that may be equivalent to required courses of this department, they should contact the program director. Students must provide course descriptions and petition for acceptance of transfer courses as substitutes for required courses.

BIOPHYSICS—BS

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in prerequisite courses.
An adequate background to study biophysics; no specific number of course requirements are set for admission to the major.

Prerequisite Courses

BIO 201 Cell Biology
BIO 205 Fundamentals of Biological Chemistry or BCH 403 Principles of Biochemistry*
CHE 101 General Chemistry or CHE 105 Chemistry: Principles and Applications
CHE 102 General Chemistry or CHE 106 Chemistry: Principles and Applications
CHE 203 Organic Chemistry or CHE 201 Organic Chemistry
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III or MTH 306 Introduction to Differential Equations**
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 General Physics II Lab
PHY 207 General Physics III

Required Courses

BPH 400 Biological Physics
BPH 402 Biophysics Problems for Undergraduates
BPH 498 Research
BPH 458 Experimental Biophysics (Senior Project)
CHE 319 Physical Chemistry or CHE 349 Physical Chemistry for Life Sciences

Summary

Total required credit hours for the major.....63

At least 10 credit hours of electives must be in upper-level (300 or above) math or science: BCH, BIO, BPH, CHE, MTH, PHY, or other by approval of the department.

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 101 or CHE 105; MTH 141; PHY 107
Spring—CHE 102 or CHE 106; MTH 142; PHY 108, PHY 158

SECOND YEAR
Fall—CHE 203 or CHE 201
Spring—BIO 201; CHE 204***; PHY 257***
Fall or Spring—MTH 241 or MTH 306**

THIRD YEAR
Fall—BPH 400; CHE 319 or CHE 349
Spring—BIO 205*; BPH 402

FOURTH YEAR
Fall—BCH 403*; BPH 405***, BPH 498
Fall or Spring—BPH 458

** Either BCH 403 or BIO 205 is required.*

***Either MTH 241 or MTH 306 is required for this program; however, the department recommends that students take both courses.*

****Recommended but not required courses: BPH 404, BPH 405, BPH 410, CHE 204, CHE 320, MTH 309, PHY 208, PHY 257.*

Biostatistics*

Department of Biostatistics

School of Public Health and Health Professions

249 Farber Hall
South Campus
Buffalo, NY 14214-3000
Phone: (716) 829-3690
Fax: (716) 829-2200
Web site: phhp.buffalo.edu/biostat/

Alan D. Hutson
Chair

Randolph L. Carter
Associate Chair

** Not a baccalaureate degree program*

For a listing of Biostatistics faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Biostatistics is the science of making decisions in the face of uncertainty. Its study provides a background for understanding numerical data and the process of making inferences from such data. Biostatistics is an invaluable tool for all scientific disciplines, as well as being a significant mathematical discipline in its own right. The Department of Biostatistics provides students with a calculus-based foundation in probability and statistics before branching into numerous areas of application. The foundation provided prepares students for career opportunities in government, business, and industry, or for graduate study in any quantitative discipline.

Biotechnology

Department of Biotechnical and Clinical Laboratory Sciences

School of Medicine and Biomedical Sciences

26 Cary Hall
South Campus
Buffalo, NY 14214-3005
Phone: (716) 829-3630
Fax: (716) 829-3601
Web site: www.smbs.buffalo.edu/cls
E-mail: dohertyl@buffalo.edu

Paul J. Kostyniak
Chair

Kate Rittenhouse-Olson
Program Director

Leah Doherty
Undergraduate Program Advisor

About the Program

The Biotechnology Program defines itself as fulfilling the role of providing intensive, hands-on laboratory-based coursework and training which will allow our graduates to master a diverse array of skills in the field of biotechnology. The Biotechnology Program incorporates the theoretical concepts taught in lectures with the fundamental practical application of these theories in the intensive laboratory component of our program. The emphasis is on real-life proficiency in the theory as well as practice of biotechnology. Based on this focus, it is expected that the high level of hands-on laboratory training received in our program will enable students to be prepared, upon graduation, to be immediately competitive in the biotechnology job market. Although the coursework is focused on supplying the students with skills in and comprehension of a wide variety of laboratory techniques, it is expected that the training acquired in the program will also enable any graduate from our program to qualify for acceptance into a graduate or professional program. Whether the proficiency received here serves as a terminal degree or lays the foundation in biotechnology theory and practice for entry into a graduate or professional school, students receive a high level of one-on-one training and faculty interaction that is exceptional.

Degrees Offered

- **Undergraduate:** BS with forensics, graduate/pre-professional, or research/technical emphasis
- **Graduate:** MS

Degree Options

Students who successfully complete program and university requirements for graduation are granted a bachelor of science degree.

Advisement

Credit is given based on individual advanced placement courses and is now only accepted as Pass credit. Students must have a 4 or 5 on the AP exam for the course to be counted in place of a prerequisite.

Transfer Policy

Transfer students must first be accepted by the university and must complete a SUNY Transfer Admission Application from the Office of Admissions, and submit official transcripts. Upon university admission, the evaluated transcripts are sent to the program for further review. The deadline for fall admission is the previous February 1. Transfer students should submit their application and official transcripts well in advance of these deadlines. The program accepts students past these deadlines only on a space available basis.

The program in biotechnology has articulation agreements with Erie Community College, Genesee Community College, Niagara County Community College and the biotechnology program at Monroe Community College, and prerequisite course equivalencies have been established. Students from other institutions should contact the undergraduate program advisor for prerequisite course equivalencies. Course descriptions and syllabi may be required to establish equivalencies.

Unless articulated, courses from other institutions may not be used to satisfy any upper-division program course requirements.

BIOTECHNOLOGY—BS

Acceptance Criteria

Completion of all prerequisite science and math courses (some exceptions allowed).
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in the prerequisite courses.

Advising Notes

Submission of a departmental application is required and current copy of UB DARS report must be submitted to the department.

Application deadline for fall admission is February 1. These deadlines may be extended based on space availability. Applications are available at the department office, 26 Cary Hall, South Campus, or online at http://www.smbs.buffalo.edu/cls. Students are advised that program admissions is available only in fall semesters. The program admits 25-30 full-time students each year; part-time study is also available.

Prerequisite Courses

BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry
CHE 102 General Chemistry
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
CSE 101 Computers: A General Introduction
MIC 301 Fundamentals of Microbiology
PGY 300 Human Physiology
PSY 207 Psychological Statistics or STA 119 Statistical Methods

Required Courses

MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I
MT 302 Instrumental Analysis
MT 401 Clinical Biochemistry
MT 402 Fundamentals of Immunology
MT 422 Biomolecular Technology and Diagnostics
MT 426 Technical Communications for the Scientific Professional
MT 430 Bioseparation Techniques

(Continued on next page)

MT 432 Introduction to Medical Genetics
MT 434 Cell and Tissue Culture Techniques
MT 445 Biotechnology Career Preparation
PHI 337 Social and Ethical Values in Medicine OR
PHI 107 Ethics
PHY 101/PHY 151 College Physics I/Lab
Technical electives (12-18 credits)

Summary

Required prerequisite science and math credit hours.....45
Required program credit hours 38
Technical elective credit hours..... 12-18

See Baccalaureate Degree Requirements for general education and remaining university requirements

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—BIO 200, CHE 101
Spring—BIO 201, CHE 102
Fall or Spring—CSE 101

SECOND YEAR
Fall—CHE 201
Spring—CHE 202, MIC 301
Fall or Spring—PGY 300, PSY 207

THIRD YEAR
Fall—MT 302, MT 401, MT 402
Spring—MT 426, MT 430, MT 445, PHI 337 or PHI 107, MTH 121 or MTH 141, and technical electives

FOURTH YEAR
Fall—MT 422, MT 432, MT 434, PHY 101, PHI 151, and technical electives
Spring—Technical electives or optional internship

Electives and Course Groupings

Note: Minors in anthropology, pharmacology and toxicology, biology, chemistry, computer science, environmental studies, foreign language, medicinal chemistry and pharmaceutics may be used to fulfill all or part of the technical electives required for the BS degree in biotechnology. Although no minor in Management is available, students may use management courses toward the technical electives with permission of the program director. Students must meet with a representative of the department/program offering the minor prior to the fall semester of the junior year, as many departments have strict rules regarding prerequisites, course sequence and minimum GPA for acceptance to and completion of the minor. Students should consult the relevant listings in the Undergraduate Catalog for specifics concerning each minor.

To satisfy the technical elective requirement, coursework must be chosen from the above minors or from the areas listed below. Students are required to complete four or more courses from one emphasis area so that the program is assured that an area of expertise has been developed.

Emphasis Areas

FORENSICS
ANA 113 Human Anatomy
APY 107 Introduction to Physical Anthropology
APY 248 Human Genetics
APY 275 Introduction to Medical Anthropology
APY 345/APY 346 Comparative Primate Anatomy
APY 348 Anthropological Osteology
APY 448 Human Genetics/Legal & Ethical Issues (prerequisite: APY 248)
CL 151 Medical Terminology
JLS 130 American Jury Trial
JLS 201 Introduction to Law and Legal Process
MT 428 Forensic Science
SOC 307 Criminology (prerequisite: SOC 101)
SOC 317 Criminal Justice Systems (prerequisite: SOC 101)
SOC 322 Introduction to Medical Sociology (prerequisite: SOC 101)

GRADUATE/PRE-PROFESSIONAL
ANA 113 Human Anatomy
APY 248 Human Genetics
APY 275 Introduction to Medical Anthropology
APY 345/APY 346 Comparative Primate Anatomy
APY 448 Human Genetics/Legal & Ethical Issues (prerequisite: APY 248)
BCP 302 Introduction to Pharmacology
CL 151 Medical Terminology
MFC 250 Introduction to Health Care in the United States I
MFC 350 Introduction to Health Care in the United States II
MTH 122 Survey of Calculus and Its Applications II or MTH 142 College Calculus II
NTR 108 Human Nutrition
NTR 401 Nutrition and Health
PHY 102/PHY 152 College Physics

RESEARCH/TECHNICAL
BCP 302 Introduction to Pharmacology
BIO 215 Fundamentals of Biological Chemistry Lab
BIO 302 Introduction to Molecular Biology
BIO 400 Bioinformatics/Genome Analysis
BIO 401 Advanced Biological Chemistry I
BIO 402 Advanced Cell Biology
BIO 467 Techniques in Immunology
CHE 214 Analytical Chemistry
CHE 215 Analytical Chemistry Lab
CHE 413 Instrumental Analysis (by permission)
CL 151 Medical Terminology
MCH 311 The Chemistry of Drug Action
MCH 403 Mechanisms of Drug Action
MCH 427 Combinatorial Chemistry
MT 409 Clinical Microbiology
PHC 331 Introduction to Pharmaceutics and Pharmaceutical Methods
PHC 425 Pharmaceutical Biotechnology: From Bench to Bedside

Additional courses may be considered for inclusion into the above emphasis areas. Graduate courses may be taken if the material is beneficial to the student's goals. A formal petition must be filed and prior approval must be granted for the student to use a graduate course for undergraduate credit. Consult the Undergraduate Advisor for the Program in biotechnology program for details.

Business Administration

School of Management

204 Alfiero Center
North Campus
Buffalo, NY 14260-4010
Phone: (716) 645-3206
Fax: (716) 645-2341
Web site: mgt.buffalo.edu

John Thomas
Dean

Katherine Ferguson
Associate Dean

Raymond Orrange
Chair, Undergraduate Program

For a listing of Business Administration faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The undergraduate program in the School of Management is designed to prepare students for eventual managerial roles in the private and the nonprofit sectors. The curriculum emphasizes a broad exposure to mathematics and the social sciences and a general education in management studies. The program of study in management gives particular attention to understanding the role of the business firm in society; the management functions of planning and control; the behavior of organizations; the tools of modern management, including accounting, economics, and statistics; and the ways in which managers perform such functions as production, marketing, finance, and industrial relations.

The school's program is accredited by the Association to Advance Collegiate Schools of Business (AACSB International). There are undergraduate concentrations in accounting, financial analysis, human resources management, internal auditing, international business, management information systems, and marketing. Accounting, internal auditing, and management information systems are only available during the day.

The AACSB International stand-ards mandate that an undergraduate curriculum should have a general education component that makes up at least 50 percent of the student's four-year program. Up to 9 credit hours of economics and up to 6 credit hours of statistics may be counted toward AACSB's 50 percent rule.

Degrees Offered

- **Undergraduate:** BS
- **Concentrations:** Accounting, Financial Analysis, Human Resources Management, Internal Auditing, International Business, Management Information Systems, Marketing
- **Combined Degrees:** BS/MBA
- **Graduate:** MBA, MS, PhD

Degree Options

Combined BA/MBA or BS/MBA Programs. Qualified students may apply for a five-year program leading to a combined BA/MBA or BS/MBA degree. The school has established combined degree programs under which students may obtain the combined degree following undergraduate study in business administration, computer science, economics, engineering, and geography.

Advisement

Academic advisement is available in the Undergraduate Academic Programs Office in 204 Alfiero Center (716-645-3206). The office is open Monday through Friday from 8:30 a.m. to 5:00 p.m.

Acceptance Information

Freshmen who declare an interest in business administration will be admitted provisionally to the School of Management Business Administration Track. In the first two years, students will complete the university writing requirements (ENG 101 and ENG 201), general education courses, and the seven School of Management foundation courses.

All students go through an academic review at the end of the second semester of the sophomore year. To remain in the School of Management and be permitted to take restricted upper-level (300/400-level) School of Management courses, the student must satisfy the requirements noted in the business administration BS chart.

Current UB day-division students who are intended School of Management majors and students wishing to change majors into the School of Management will also need to satisfy these requirements. Students may stop by 204 Alfiero Center to declare their interest in changing to the School of Management and to pick up appropriate application materials. For upper-division students, applications to the major should be made in the semester in which students satisfy the requirements previously stated. The application deadlines are March 1 and June 15 for fall admission and October 1 for spring admission.

Students admitted to the business administration track may apply to the accounting track in the second semester of the sophomore year or the semester in which all prerequisites will be completed. Applications to the Accounting Track require completion of MGA 201 and MGA 202 with minimum grades of B. This is in addition to the minimum GPA of 2.5 in prerequisites requirement. Option transfer applications to accounting are available in 204 Alfiero Center.

Students who do not meet these requirements must select another major.

Transfer Policy

Students may apply for transfer from two-year and four-year colleges and enter the School of Management business administration track as intended majors; they are subject to the academic review and requirements previously stated. Transfer students who have completed a minimum of 50 credit hours and the seven management foundation courses (or approved equivalents) with a minimum GPA of 2.5 are admitted to the upper division of the School of Management.

The following courses are prerequisites to upper-level courses in the major and must be completed with a minimum GPA of 2.5: one semester each of psychology, computer science, and statistical science; and two semesters each of accounting, economics, and calculus (or one semester of an equivalent MTH 131 course). The normal requirements for a transfer student to petition for a course equivalency for MGA 201- MGA 202 Introduction to Accounting I-II is the successful completion of two semesters of accounting courses, including financial and managerial accounting. Upper-level management-related courses should be deferred until the junior or senior year at the university.

All admissions decisions and other policies and regulations established by the School of Management are subject to review by the written petition procedures.

BUSINESS ADMINISTRATION—BS

Acceptance Criteria

Students may apply for admission to the School of Management when they enter the university as freshmen, transfer students, or later in their academic careers. To remain in the School of Management and to be permitted to take restricted upper-level (300/400 level) School of Management courses, students must satisfy the following requirements:

1. Successful completion of the seven management foundation courses* with a minimum cumulative GPA of 2.5 in the seven courses. If a course is repeated, the grade that is counted is the grade earned the second time, even if the grade is lower than the grade earned the first time.
2. Minimum overall and UB GPA of 2.0 to be considered in academic good standing with the university.
3. Junior standing.

Advising Notes

Students entering in the spring semester should be aware of possible course sequence problems that may necessitate registration in summer school or waiting additional semesters to take specific courses.

Free elective credit ranges from 9 to 15 hours in the junior and senior years depending upon the concentration selected.

Business Administration Track

Required Courses

ECO 181 Introduction to Macroeconomics*
ECO 182 Introduction to Microeconomics*
MGA 201 Introduction to Accounting I*
MGA 202 Introduction to Accounting II*
MGB 301 Organizational Behavior and Administration

(Continued on next page)

MGE 302 Applied Economics**
MGF 301 Corporation Finance
MGG 300 Career Strategies, Planning, and Management
MGI 301 Human Resources Management and Labor Relations for Managers
MGM 301 Principles of Marketing
MGO 302 Production and Operations Management (formerly MGQ 302)
MGO 403 Fundamentals of Strategic Management (formerly MGS 403)
MGQ 201 Introduction to Computers and Statistics*
MGQ 301 Statistical Decisions in Management
MGS 351 Introduction to Management Information Systems
MGT 401 Public Policy, Law and Management
MTH 131 Mathematical Analysis for Management*
PSY 101 Introductory Psychology*
Three or Four management electives
Completion of the 50% AACSB rule

Summary

Total required credit hours for the major..... 67-70

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—ECO 181*, MTH 131*
Spring—ECO 182*, PSY 101*

SECOND YEAR
Fall—MGA 201*, MGQ 201*, AACSB elective (1 credit)
Spring—MGA 202*, MGM 301, AACSB electives (6 credits)

THIRD YEAR
Fall—MGQ 301
Spring—MGE 302**, MGO 302, AACSB electives (3 credits)
Fall or Spring—MGB 301, MGF 301, MGG 300, MGI 301, MGS 351

FOURTH YEAR
Fall—Two management electives
Spring—Two management electives
Fall or Spring—MGO 403, MGT 401

**One of the seven School of Management foundation courses*

***MGE 302 may be taken junior or senior year.*

Students need to pay special attention to the AACSB non-business requirement (See About the Program).

Concentration under Business Administration Track

The 300/400-level courses are taken to fulfill management electives.

FINANCIAL ANALYSIS CONCENTRATION
MGA 305 Management Accounting
MGA 306 Financial Reporting and Analysis
MGF 405 Advanced Corporate Finance
One of the following: MGF 401 Financial Institutions, MGF 402 Investment Management, MGF 403 International Financial Management, or MGF 407 Financial Derivatives and Their Markets

HUMAN RESOURCES MANAGEMENT CONCENTRATION
MGI 411 Advanced Human Resources Management
Two of the following: MGB 425 Power and Influence in Organizations, MGI 441 Collective Bargaining, MGI 496 Internship

INTERNATIONAL BUSINESS CONCENTRATION
Three of the following: GEO 330 Dynamics of International Business, GEO 333 Bases of World Commerce, GEO 334 International Environments and Commercial Problems, MGF 403 International Financial Management, MGM 483 International Marketing
Two semesters of a foreign language (may be waived under certain circumstances)

MANAGEMENT INFORMATION SYSTEMS CONCENTRATION
CSE 113 Introduction to Computer Science I
MGS 314 Applied Business Programming
MGS 402 Telecommunications Technology
MGS 404 Database Management Systems
MGS 405 Systems Analysis and Design
MGS 425 Management of IT Projects

MARKETING CONCENTRATION
MGM 403 Marketing Research
Two of the following: MGM 402 Selling and Sales Force Management, MGM 404 Consumer Behavior, MGM 405 Seminar in Marketing, MGM 406 Product and Brand Management, MGM 409 Advertising and Promotion

Accounting Track-Registered Accounting Concentration

Required Courses

ECO 181 Introduction to Macroeconomics*
ECO 182 Introduction to Microeconomics*
MGA 201 Introduction to Accounting I*
MGA 202 Introduction to Accounting II*
MGA 301 Intermediate Financial Accounting I: Assets and Income Determination***
MGA 302 Intermediate Financial Accounting II: Equities***
MGA 303 Communication for Accountants
MGA 311 Accounting Systems***
MGA 314 Cost Accounting
MGA 402 Auditing**
MGA 403 Federal and State Taxes**
MGA 404 Advanced Financial Accounting**
MGB 301 Organizational Behavior and Administration
MGE 302 Applied Economics
MGF 301 Corporation Finance
MGF 401 Financial Institutions or MGF 402 Investment Management or MGF 403 International Financial Management or MGF 405 Advanced Corporate Finance or MGF 407 Financial Derivatives and Their Markets
MGG 300 Career Planning, Strategies, and Management
MGI 301 Human Resources Management and Labor Relations for Managers
MGM 301 Principles of Marketing
MGO 302 Production and Operations Management (formerly MGQ 302)
MGO 403 Fundamentals of Strategic Management (formerly MGS 403)
MGQ 201 Introduction to Computers and Statistics*
MGQ 301 Statistical Decisions in Management
MGS 351 Introduction to Management Information Systems
MGT 403 Business Law I
MGT 404 Business Law II
MTH 131 Mathematical Analysis for Management*
PSY 101 Introductory Psychology*
Completion of the 50% AACSB rule

**One of the seven School of Management foundation courses*

****These courses must be completed with grades of C or better to continue in the accounting concentration.*

Students need to pay special attention to the AACSB non-business requirement (See About the Program on page 62).

Summary

Total required credit hours for the major.....86

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—ECO 181*, MTH 131*
Spring—PSY 101*, ECO 182*

(Continued on next page)

SECOND YEAR
Fall—MGA 201*, MGQ 201*, AACSB elective (1 credit)
Spring—MGA 202*, MGM 301, AACSB electives (6 credits)

THIRD YEAR
Fall—MGA 301, MGA 311, MGQ 301, MGF 301, MGS 351
Spring—MGA 302, MGA 314, MGE 302, MGO 302, MGB 301
Fall or Spring—MGA 303, MGG 300

FOURTH YEAR
Fall—MGT 403, MGI 301, MGA 402**, MGA 403**, AACSB elective (3 credits)
Spring—MGA 404**, MGT 404, MGO 403, and MGF 401 or MGF 402 or MGF 403 or MGF 405 or MGF 407

***MGA 402, MGA 403, and MGA 404 are offered both fall and spring, but no more than two accounting courses may be taken in the same semester.*

Accounting Track-Internal Auditing Concentration

Required Courses

ECO 181 Introduction to Macroeconomics*
ECO 182 Introduction to Microeconomics*
MGA 201 Introduction to Accounting I*
MGA 202 Introduction to Accounting II*
MGA 301 Intermediate Financial Accounting I: Assets and Income Determination***
MGA 302 Intermediate Financial Accounting II: Equities***
MGA 303 Communication for Accountants
MGA 311 Accounting Systems***
MGA 314 Cost Accounting
MGA 401 Internal Auditing
MGA 410 Information Systems Audit
MGA 415 Fraud Examination
MGB 301 Organizational Behavior and Administration
MGE 302 Applied Economics
MGF 301 Corporation Finance
MGG 300 Career Strategies, Planning, and Management
MGI 301 Human Resources Management and Labor Relations for Managers
MGM 301 Principles of Marketing
MGO 302 Production and Operations Management (formerly MGQ 302)
MGO 403 Fundamentals of Strategic Management (formerly MGS 403)
MGQ 201 Introduction to Computers and Statistics*
MGQ 301 Statistical Decisions in Management
MGS 351 Introduction to Management Information Systems
MGT 403 Business Law I
MGT 404 Business Law II
MTH 131 Mathematical Analysis for Management*
PSY 101 Introductory Psychology*
AACSB electives

**One of the seven School of Management foundation courses*

****These courses must be completed with grades of C or better to continue in the accounting concentration.*

Summary
Total required credit hours for the major.....83

Recommended Sequence of Program Requirements
(First two years, same as recommended sequence for registered accounting concentration.)

THIRD YEAR
Fall—MGA 301, MGA 311, MGF 301, MGQ 301, MGS 351
Spring—MGA 302, MGA 314, MGB 301, MGE 302, MGO 302
Fall or Spring—MGA 303, MGG 300

FOURTH YEAR
Fall—MGA 401, MGI 301, MGT 403
Spring—MGA 410, MGA 415, MGT 404, AACSB elective (3 credits)
Fall or Spring—MGO 403

Note: The accreditation standards of the AACSB International mandate that an undergraduate curriculum must have a general education component that makes up at least 50 percent of the student's four-year program. Up to 9 credit hours of economics and up to 6 credit hours of statistics may be counted toward AACSB's 50 percent rule.

BUSINESS ADMINISTRATION—BS/MBA

About the Program
The BS/MBA program reduces by one year the usual pattern of a conventional four-year BS in business administration program and a two-year MBA program. Students accepted into this program must meet undergraduate requirements exactly as specified in the following course schedule for the first three years. Any deviation in the curriculum must be approved. After completion of the undergraduate portion of the degree, the student completes no less than 30 graduate hours (excluding waivers) for the MBA degree. The BS/MBA combined degree is conferred upon completion of the MBA courses at the end of the fifth year.

Advising Notes
Students apply in the second semester of the junior year for consideration for admission to the BS/MBA program.

BS/MBA students must complete a law course to satisfy the undergraduate curriculum. Students may choose to complete this requirement at the undergraduate level (MGT 401) or MBA level (take MGT 640 as elective).

Required Courses
ECO 181 Introduction to Macroeconomics
ECO 182 Introduction to Microeconomics
MGA 201 Introduction to Accounting I
MGA 202 Introduction to Accounting II
MGA 604 Introduction to Financial Accounting
MGA 609 Management Accounting
MGB 301 Organizational Behavior and Administration
MGB 601 Behavioral and Organizational Concepts for Management
MGE 302 Applied Economics
MGE 601 Economics for Managers
MGF 301 Corporation Finance
MGF 631 Financial Management
MGG 300 Career Planning, Strategies, and Management
MGG 635 Business Communications
MGI 301 Human Resources Management and Labor Relations for Managers
MGM 301 Principles of Marketing
MGM 625 Marketing Management
MGO 302 Production and Operations Management (formerly MGQ 302)
MGO 630 Operations and Service Management
MGO 641 Strategic Management
MGQ 201 Introduction to Computers and Statistics
MGQ 301 Statistical Decisions in Management
MGQ 606 Probability and Statistics for Management
MGS 351 Introduction to Management Information Systems
MGT 401 Public Policy, Law and Management

(Continued on next page)

MGT 601 Ethics and Corporate Governance
MTH 131 Mathematical Analysis for Management
PSY 101 Introductory Psychology
Internship
Nine MBA electives

Summary
Total required credit hours for the General Management BS/MBA.....150
Total required credit hours for the Accounting BS/MBA 155

See Baccalaureate Degree Requirements for general education and remaining university requirements.

General Management BS/MBA Program

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MTH 131, ECO 181
Spring—PSY 101, ECO 182

SECOND YEAR
Fall—MGA 201, MGQ 201
Spring—MGA 202, MGM 301

THIRD YEAR
Fall—MGQ 301, MGF 301, MGB 301, MGS 351, MGG 300* (2 credits)
Spring—MGO 302, MGE 302, MGI 301, MGT 401

**MGG 300 may be taken in the fall or spring semester of the junior year.*

Students must complete University general education requirements, complete 45 credits outside of business, economics, and statistics, and 90 undergraduate credit hours prior to starting the MBA courses in the fourth year.

FOURTH YEAR
Fall—MGA 604, MGB 601, MGF 631 (1.5), MGT 601 (1.5), MGQ 606, one elective or MGE 601
Spring—MGF 631 (1.5), MGG 635 (1.5), MGM 625, MGO 630, MGO 641 and one elective

FIFTH YEAR
Fall—Internship, four electives (or 3 + MGE 601)
Spring—five electives (or 4 + MGA 609)

Accounting BS/MBA Program

FIRST AND SECOND YEARS
Follow first two years of general management BS/MBA program

THIRD YEAR
Fall—MGQ 301, MGS 351, MGF 301, MGA 301, MGA 303, MGA 311
Spring—MGO 302, MGI 301, MGE 302, MGA 302, MGA 314, MGG 300 (2 credits)

FOURTH YEAR
Fall—MGA 604, MGB 601, MGF 631 (1.5), MGT 601 (1.5), MGQ 606, MGA 611*
Spring—MGF 631 (1.5), MGG 635 (1.5) MGM 625, MGO 630, MGO 641, MGA 607

Since MGI 601 is an elective course at the graduate level, MGI 301 is recommended at the undergraduate level. One of the two courses must be completed to fulfill undergraduate requirements.

FIFTH YEAR
Fall—MGA 613*; MGA 617* or MGA 618*, MGT 640 (4 cr)*, internship, MGE 601
Spring—MGA 609, MGA 612, MGA 614, finance elective*, elective

**Required electives in registered accounting program.*

Chemical Engineering

Department of Chemical and Biological Engineering

School of Engineering and Applied Sciences

307 Furnas Hall
North Campus
Buffalo, NY 14260-4200
Phone: (716) 645-2911
Fax: (716) 645-3822
Web site: www.cbe.buffalo.edu

David A. Kofke
Chair

Jeffrey R. Errington
Director of Undergraduate Studies
jerring@buffalo.edu

For a listing of Chemical Engineering faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Chemical engineering concerns the design, scale-up, and operation of chemical processes, and the understanding and design of technologically useful materials. Chemical engineers are responsible for the economical, safe, and environmentally benign production of useful quantities of vital materials - from grams of a new drug to tons of a commodity chemical. Chemical engineers use these same skills to understand and manipulate natural processes, such as in biological systems. The program at UB is broadly based to prepare graduates for positions in engineering development, design, economic evaluation, sales, construction, production, and management. A number of undergraduates go on to graduate work and careers in research, and some pursue degrees in medicine, business, or law.

Students intending to major in chemical engineering should have strong backgrounds in chemistry and mathematics. Sophomore- and junior-year students take a combination of theoretical and applied courses in chemical engineering, in addition to several courses in physical and organic chemistry. The senior year extends this base and builds upon it with courses in systems, design and electives. Many of the courses are accompanied by laboratory sessions. Communication skills, both oral and written, are stressed through laboratory reports. Some senior students are exposed to research in a senior projects course; others obtain industrial experience through local internships or through the chemical engineering co-op program.

In 2003 the department changed its name (adding "Biological") to reflect the important and growing contributions that chemical engineers make in the field of biological applications. The profession is evolving to meet the increasing need for engineers who speak the languages of chemistry and biology, and who possess strong quantitative skills. Although the degree offered by the department is still in chemical engineering, several courses are offered to permit study of biological engineering, and there is even more opportunity to focus in biology through selection of electives following a Biological Engineering track.

Our curriculum is designed to meet several educational objectives, which are stated as goals and abilities we expect our graduates to achieve within a few years of the conferral of their degree. Our educational objectives read as follows:

Within a few years of obtaining a bachelor's degree in chemical engineering from the University at Buffalo, the recent graduate:

- Demonstrates professional engineering competence, via promotions and/or advancement to positions of increasing responsibility; via satisfactory progress towards completion of an advanced degree; or via a successful transition from the "traditional" chemical engineering career path into medicine, business, government, education, etc.
- Develops and implements innovative and effective solutions to difficult problems. Shows proficiency in the application of engineering science in the presence of practical constraints or complicating factors to solve real-world technical problems.
- Grows continuously in the range of people with whom he/she interacts professionally. Assumes responsibilities that require increasingly broad and diverse interpersonal interactions, indicating the ability to relate well to superiors, subordinates, and peers, inside or outside the organization, perhaps involving difficult circumstances. Provides input to others' work that

enables them to do their job better. Reaches team leadership positions.
- Demonstrates excellence and leadership in ethical standards, on-the-job safety, and environmental protection through participation in appropriate training activities, short courses, or conferences; through employer recognition for achievement in the corresponding professional practice (e.g. safety awards); or by assumption of recognized leadership positions in these areas (e.g. safety officer).
- Communicates his/her ideas, findings, and knowledge through the composition of papers and/or internal reports; authorship of standards and guidelines; publication of scholarly articles; application for patents; delivery of effective presentations to group leaders, internal and external customers, and at technical conferences; and/or training of coworkers and associates.
- Engages in life-long learning via participation in a professional society, continuing education course(s), professional engineering certification, professional development course(s), and/or industry training course(s).

Transfer Policy

Transfer students must first apply to the university and meet the university transfer admission requirements. For admission of transfer students to engineering, see the School of Engineering and Applied Sciences Transfer Policy section.

Degrees Offered

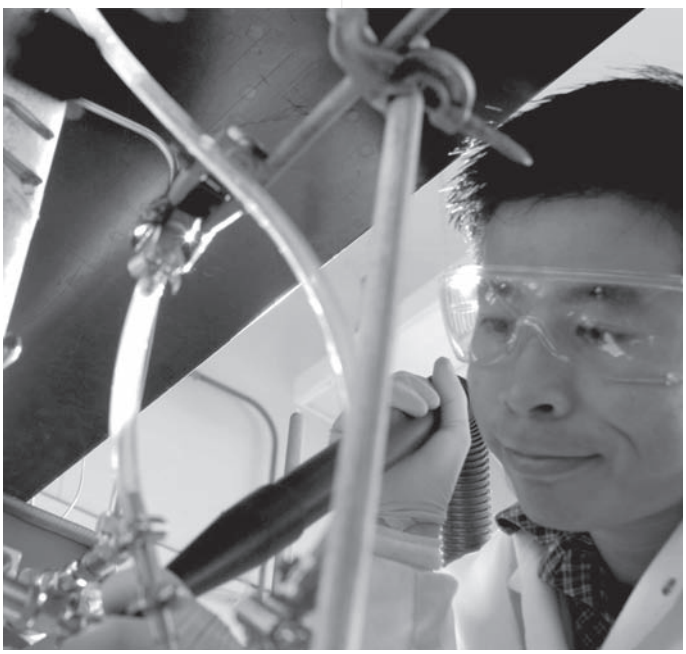
Undergraduate: BS
Combined: BS/MBA

Degree Options

In addition to the regular BS program, a five-year BS-CE/MBA combined degree program has been established. Also, the Department of Biotechnical and Clinical Laboratory Sciences offers a special biotechnology minor exclusively for chemical engineering majors. The department also offers three tracks, which are specifications of electives for students wishing to focus on a specialty within chemical engineering. Currently tracks are established for (i) Biological Engineering; (ii) Materials Engineering; and (iii) Process Engineering. Details may be obtained at the department Web site.

Advisement

The 2008-09 catalog presents a new curriculum involving substantial changes to the degree program that were first introduced in the 2006-07 catalog. The new curriculum is being phased in beginning with the freshman class entering in 2006 (expected graduation date of June 2010). Students planning to complete the degree before 2010 (in particular, transfer students) must follow the degree requirements published in the 2005-06 catalog.



CHEMICAL ENGINEERING—BS

Acceptance Criteria

See the School of Engineering and Applied Sciences Acceptance Information section.

Advising Notes

Students must meet minimum GPA requirements in engineering as specified by the Dean of Engineering to graduate from the program. See the School of Engineering and Applied Sciences Academic Requirements section.

Required Courses

BIO 201 Cell Biology
CE 212 Fundamental Principles of Chemical Engineering
CE 304 Chemical Engineering Thermodynamics
CE 317 Transport Processes I
CE 318 Transport Processes II
CE 327 Chemical Engineering Laboratory I
CE 328 Chemical Engineering Laboratory II
CE 329 Chemical Reaction Engineering
CE 404 Chemical Engineering Product Design
CE 407 Separations
CE 408 Chemical Engineering Plant Design
CE 427 Chemical Engineering Laboratory III
CE 428 Chemical Engineering Laboratory IV
CE 433 Materials Science and Engineering
CE 434 Chemical Systems and Control
CHE 107 General Chemistry for Engineers
CHE 108 General Chemistry for Engineers
CHE 201 Organic Chemistry
CHE 204 Organic Chemistry or BIO 205 Fundamentals of Biological Chemistry
CHE 334 Physical Chemistry for Chemical Engineers
EAS 140 Engineering Solutions
EAS 230 Higher-Level Language
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 107 General Physics I
PHY 108/PHY 158 General Physics II/Lab
One 200/300/400-level technical elective
One 300/400-level technical elective
Two chemical engineering technical electives

Summary

Total required credit hours for the major.....110

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 107, EAS 140, MTH 141
Spring—CHE 108, MTH 142, PHY 107, EAS 230

SECOND YEAR
Fall—CE 212, CHE 201, MTH 241, PHY 108/PHY 158
Spring—CE 304, CHE 204 or BIO 205, MTH 306, BIO 201

THIRD YEAR
Fall—CE 317, CE 327, CE 329, CHE 334, one 200/300/400-level technical elective
Spring—CE 318, CE 328, CE 407, CE 433, one 300/400-level technical elective

FOURTH YEAR
Fall—CE 404, CE 427, CE 434, one chemical engineering technical elective
Spring—CE 408, CE 428, one chemical engineering technical elective

CHEMICAL ENGINEERING/BUSINESS ADMINISTRATION—BS/MBA

Acceptance Criteria
Good standing as a chemical engineering student and acceptance as a graduate student by the School of Management.

Advising Notes
Admission to the MBA program is made through application to the Management School during the junior year.

The MBA courses listed here represent those currently required for the combined degree, but they are subject to change prior to a student's acceptance into the MBA program. Students should confirm MBA program requirements directly with the School of Management upon their application and acceptance to that program.

Required Courses
All courses required for the chemical engineering BS degree, minus one 300/400-level technical elective
MGA 604 Introduction to Financial Accounting
MGA 609 Management Accounting
MGB 601 Behavioral and Organizational Concepts
MGE 601 Economics for Managers
MGF 631 Financial Management
MGG 635 Business Communications
MGM 625 Marketing Management
MGQ 606 Probability and Statistics*
MGO 630 Operations and Service Management
MGO 641 Strategic Management
MGT 601 Economics for Managers
Six MBA electives
MBA Practicum

**If EAS 308 is taken in the third year, MGQ 606 may be replaced with an MBA elective.*

Summary
Total required credit hours for the undergraduate portion.....107

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the School of Management's MBA handbook for requirements for MBA candidates.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 107, EAS 140, MTH 141
Spring—CHE 108, MTH 142, PHY 107, EAS 230

SECOND YEAR
Fall—CE 212, CHE 201, MTH 241, PHY 108/PHY 158
Spring—CE 304, CHE 204 or BIO 205, MTH 306, BIO 201

THIRD YEAR
Fall—CE 317, CE 327, CE 329, CHE 334
Spring—CE 318, CE 328, CE 407, CE 433, one 200/300/400-level technical elective

FOURTH YEAR
Fall—CE 434, MGA 604, MGB 601, MGF 631, MGT 601, MGQ 606, one CE technical elective
Spring—MGF 631, MGM 625, MGO 630, MGO 641, MGG 635, one CE technical elective

SUMMER
MBA practicum.

FIFTH YEAR
Fall—CE 404, CE 427, MGE 601, three MBA electives
Spring—CE 408, CE 428, MGA 609, three M.B.A. electives

At completion, you will be awarded a BS diploma and an MBA diploma, with a transcript notation that these degrees were awarded as part of a combined degree program.

Chemistry

Department of Chemistry

College of Arts and Sciences

363 Natural Sciences Building
North Campus
Buffalo, NY 14260-3000
Phone: (716) 645-6800, ext. 2035
Fax: (716) 645-6963
Web site: www.chem.buffalo.edu
E-mail: chemug@buffalo.edu

Frank Bright
Chair

James W. McIver
Director of Undergraduate Studies

For a listing of Chemistry faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Chemistry offers two degree programs, either of which serves as adequate preparation for graduate work. The BA program is designed for students who wish to pursue a very flexible course of study, and the BS program is for those who desire a more complete training in chemistry and plan to continue professionally in the field after graduation, either in graduate school or in industry. The curriculum for the BS degree meets the certification requirements of the American Chemical Society. A handbook describing these programs is available in the department undergraduate office.

Degrees Offered

- **Undergraduate:** BA, BS, Minor
- **Graduate:** MA, PhD

Advisement

Students may be referred to Dr. James McIver, the director of undergraduate studies, for advisement regarding the prerequisite courses and any other aspect of the program and discipline. Students are advised to meet with him at least once every semester to discuss career goals and curriculum. Academic progress is evaluated at the end of each semester. Students should apply for admission to the department as early as possible in their academic career.

Transfer Policy

It is recommended that students complete general chemistry (two semesters, plus lab) and calculus I-II (two semesters) in the freshman year; organic chemistry (two semesters, plus lab), analytical chemistry (at least one semester of lecture and one semester of lab), calculus III (one semester), and calculus-based physics (two semesters, one semester lab) in the sophomore year to facilitate transfer into the department. If there is a choice, courses specifically designated for science and/or engineering students should be selected. Transfer students must complete a minimum of 14 credit hours of University at Buffalo Chemistry department courses to receive the BS degree, and a minimum of 8 credit hours of UB Chemistry department courses to receive the BA degree.

CHEMISTRY—BS

Acceptance Criteria
Minimum GPA of 2.0 overall.
Pre- or corequisites for admission are CHE 101-CHE 102 or CHE 105-CHE 106 or CHE 107-CHE 108, and MTH 141-MTH 142, or permission of the Director of Undergraduate Studies.

Advising Notes
Students should apply for admission to the department as soon as possible.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
CHE 101-CHE 102 General Chemistry or CHE 105-CHE 106 Chemistry: Principles and Applications (recommended) or CHE 107-CHE 108 General Chemistry for Engineers

(Continued on next page)

Required Courses
CHE 201-CHE 202 Organic Chemistry or CHE 251-CHE 252 Contemporary Organic Chemistry (recommended)
CHE 214 Introduction to Analytical Chemistry
CHE 215 Introduction to Analytical Chemistry Laboratory
CHE 301 Intermediate Organic Lab or CHE 330 Physical Chemistry Laboratory II
CHE 312 Chemistry of Biological Systems
CHE 319 Physical Chemistry Lecture I
CHE 320 Physical Chemistry Lecture II
CHE 321 Inorganic Chemistry I
CHE 322 Inorganic Chemistry II
CHE 329 Physical Chemistry Laboratory I
CHE 376 Introduction to Chemical Literature
CHE 413 Instrumental Analysis
CHE 414 Instrumental Analysis Lab
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 General Physics II Lab
One advanced math course (MTH 306 or MTH 309 recommended)
One science or math elective
One 400-level chemistry lecture course (excluding CHE 498)

Summary
Total required credit hours for the major..... 80-83

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MTH 141, PHY 107,CHE 105
Spring—MTH 142, PHY 108, PHY 158,CHE 106

SECOND YEAR
Fall—CHE 214, CHE 251 MTH 241
Spring—CHE 215, CHE 252; and one advanced math course (MTH 306 or MTH 309 recommended)

THIRD YEAR
Fall—CHE 301*, CHE 319, CHE 321, CHE 329
Spring—CHE 312, CHE 320, CHE 322, CHE 330*, CHE 376

FOURTH YEAR
Fall—CHE 413, one science or math elective
Spring—CHE 414; CHE 498 Senior Research (recommended, but not required)
Fall or Spring—One 400-level chemistry lecture course

**Students may take one or the other of the labs. Both are recommended.*

CHEMISTRY—MINOR

Acceptance Criteria
Completion of CHE 101 or CHE 105 or CHE 107; MTH 121 or MTH 141; or permission of the director of undergraduate studies.
Minimum GPA of 2.0 in prerequisite courses.

Prerequisite Courses
CHE 101 or CHE 105 or CHE 107
MTH 121 or MTH 141

Required Courses
CHE 102 or CHE 106 or CHE 108; CHE 201-CHE 202 or CHE 251-CHE 252; MTH 122 or MTH 142
10 additional credit hours in 300/400-level chemistry courses. CHE 214-CHE 215 can be used as one of these courses.

CHEMISTRY—BA

Acceptance Criteria
Minimum GPA of 2.0 overall.
Pre- or corequisites for admission are CHE 101-CHE 102 or CHE 105-CHE 106 or CHE 107-CHE 108, and MTH 121-MTH 122, or permission of the Director of Undergraduate Studies.

Advising Notes
Students should apply for admission to the department as early as possible.

Students who follow the BA program cannot switch from the BA to the BS program until PHY 107-PHY 108-PHY 158 and MTH 141-MTH 142-MTH 241 are completed, or with permission of the Director of Undergraduate Studies.

Prerequisite Courses
CHE 101-CHE 102 General Chemistry or CHE 105-CHE 106 Chemistry: Principles and Applications (recommended) or CHE 107-CHE 108 General Chemistry for Engineers
MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I
MTH 122 Survey of Calculus and Its Applications II or MTH 142 College Calculus II

Required Courses
CHE 201-CHE 202 Organic Chemistry or CHE 251-CHE 252 Contemporary Organic Chemistry (recommended)
CHE 214 Introduction to Analytical Chemistry
CHE 215 Introduction to Analytical Chemistry Laboratory
CHE 321 Inorganic Chemistry I
CHE 349 Physical Chemistry for Life Sciences*
PHY 101-PHY 102 and PHY 151-PHY 152 College Physics I-II w/lab or PHY 107 and PHY 108/PHY 158 General Physics I-II w/lab
One laboratory course chosen from CHE 301, CHE 322, CHE 329, CHE 330, CHE 350
Three science or math electives at or above the 200 level (See advisor for choices)

Summary
Total required credit hours for the major..... 55-65

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MTH 121 or MTH 141; PHY 101/PHY 151 or PHY 107; CHE 105
Spring—MTH 122 or MTH 142; PHY 102/PHY 152 or PHY 108/PHY 158; CHE 106

SECOND YEAR
Fall—CHE 214; CHE 251 or CHE 201; one science or math elective
Spring—CHE 215; CHE 252 or CHE 202

THIRD YEAR
Fall—CHE 321, CHE 349*
Fall and/or Spring—Two science or math electives
Fall or Spring—One laboratory course

FOURTH YEAR
Fall and Spring—Electives
Fall and/or Spring—CHE 498 Senior Research (recommended but not required)

**Students may substitute the two lecture courses CHE 319-CHE 320 Physical Chemistry for CHE 349 Physical Chemistry for Life Sciences. If students elect to enroll in CHE 319-CHE 320, they must complete both semesters.*

Chinese**

Department of Linguistics

College of Arts and Sciences

609 Baldy Hall
North Campus
Buffalo, NY 14260-1030
Phone: (716) 645-2177
Fax: (716) 645-3825
Web site: linguistics.buffalo.edu/chinese

Karin Michelson
Chair

Tsan Huang
Program Director
thuang3@buffalo.edu

***This area of study is available as a special major in consultation with the program coordinator and the student's academic advisor. It is not a separately registerd degree program. Refer to the Special Majors section in this catalog for more information.*

For a listing of Chinese course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

China has the world's oldest living civilization, and its culture has had significant impact on its neighboring countries. Now China is rapidly becoming a major player in world politics, and its economy is expanding fast. Not only is China a country that one must deal with politically, economically, and culturally, it also provides opportunities to the world in business, scholarly research, and within many other contexts. Mandarin Chinese (or Putonghua) is the official language.

The Chinese curriculum provides a solid foundation for an understanding and appreciation of the rich and diverse culture of China. The language (Mandarin Chinese) and culture courses offered are useful to students who aspire to an East Asia-related academic or professional career in education, government, communication, business, or other fields in the United States and abroad.

The curriculum of the Chinese program includes:

- Courses designed to develop or improve competence in spoken and written Chinese.
- Courses for the advanced study of Chinese language and culture.
- Courses that examine Chinese business etiquette.

Degrees Offered

- **Undergraduate:** Minor
- **Special Major:** For students who want to further their studies in East Asian languages, a special major in Chinese, Japanese, or Korean can be arranged in consultation with the Language Program director and the Special Major Services Office (275 Park Hall). For more information, see Special Majors.

Degree Options

East Asian Studies. Of interest to students enrolled in Chinese language and culture courses is the East Asian languages and cultures (EALC) section in the Department of Linguistics. The EALC consists of the Chinese, Japanese, and Korean programs. This special major, which combines courses offered in the three programs, can be arranged with faculty members of the three programs in the EALC section.

For more information, contact Dr. Mitsuaki Shimojo, coordinator of the East Asian languages and cultures section and director of the Japanese Language and Culture Program, 609 Baldy Hall, (716) 645-2177; e-mail: shimojo@buffalo.edu.

The Asian studies program also offers a BA in Asian studies and a minor in Asian studies. For more information, contact Dr. Kristin Stapleton, Director, 714 Clemens Hall, (716) 645-3474, or via e-mail at kstaple@buffalo.edu.

Advisement

Students with advanced Chinese language proficiency or whose mother tongue is Chinese should consult with the program advisor to arrange an appropriate program.

CHINESE—MINOR

Acceptance Criteria
Minimum GPA of 2.0 in prerequisite and required courses. Application should be made when the student has completed the prerequisite courses or during the semester in which they will be completed.

Advising Notes
Students with advanced Chinese language proficiency or whose mother tongue is Chinese should consult with the program advisor to arrange an appropriate program.

Prerequisite Courses
CHI 101- CHI 102 First-Year Chinese or CHI 104 Transitional First-Year Chinese (or equivalent proficiency)

Required Courses
CHI 201-CHI 202 Second-Year Chinese
CHI 301-CHI 302 Third-Year Chinese
Two China-related or Chinese language courses, which may include one course from another department

Contact Dr. Tsan Huang (thuang3@buffalo.edu) with questions.

Civil Engineering

Department of Civil, Structural, and Environmental Engineering

School of Engineering and Applied Sciences

212 Ketter Hall
North Campus
Buffalo, NY 14260-4300
Phone: (716) 645-2114
Fax: (716) 645-3733
Web site: www.csee.buffalo.edu

A. Scott Weber
Chair

James N. Jensen
Director of Undergraduate Studies

For a listing of Civil Engineering faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Civil engineers build societies, from the landmarks that define who we are to the hidden infrastructure essential for our survival. Civil engineering projects such as the Hoover Dam, the Golden Gate Bridge, Boston's 'Big Dig,' the interstate highway system, and New York City's water supply system illustrate the diversity, scale, grandeur, and functionality that is civil engineering. Because they often work in the public arena, civil engineers require broad technical training as well as strong communication skills, and usually must be licensed as professional engineers.

Program educational objectives for the civil engineering BS degree are: Employment and promotion as civil engineers in consulting, industry, government, academia, and related professions; Maintain state-of-the-art knowledge through lifelong learning, such as graduate study and continuing education; Respond to the changing impact of civil engineering solutions in a global and social context, and; Advance and support the engineering profession through participation in professional societies, civic groups, and educational institutions.

Degrees Offered

- **Undergraduate:** BS
- **Combined:** BS (Civil)/MBA
- **Graduate:** MS, ME, PhD
- **Concentrations:** Construction management engineering,

environmental engineering, geotechnical engineering, and structural engineering.

Degree Options

The Department of Civil, Structural, and Environmental Engineering offers a BS degree in civil engineering, a BS degree in environmental engineering (described separately), and a five-year BS (Civil)/MBA combined-degree program, or a five-year BS (Civil)/ME (Civil) combined-degree program.

The Department of Civil, Structural, and Environmental Engineering also offers programs leading to the master of engineering (ME), master of science (MS), and doctor of philosophy (PhD) degree.

Advisement

Each student is assigned a faculty advisor upon acceptance into any of the programs offered by the department. New and transfer students are encouraged to meet with their faculty advisor as soon as possible to discuss their program of study; continuing students are required to meet with their advisor at least once each semester. The principal role of the faculty advisor is to assist students in choosing courses to complete their degree requirements in a timely fashion with a manageable workload. Faculty advisors also provide general advice concerning career specialization, employment opportunities, graduate school, combined degree programs, and other academic and professional issues.

Academic advisement also is available through the Office of Undergraduate Education, School of Engineering and Applied Sciences, located in 410 Bonner Hall. Official records are maintained at this office. Students who need help or have questions regarding the general education requirements, UB DARS report, transfer credits, and/or basic science and math courses should see an academic advisor in 410 Bonner Hall.

Transfer Policy

For the transfer policy, please see the School of Engineering and Applied Sciences entry in the Undergraduate Catalog, http://undergrad-catalog.buffalo.edu/academicprograms/eas.shtml.

CIVIL ENGINEERING—BS

Acceptance Criteria

Please see the School of Engineering and Applied Sciences entry in the Undergraduate Catalog, http://undergrad-catalog.buffalo.edu/academicprograms/eas.shtml.

Required Courses

CHE 107 General Chemistry for Engineers
CHE 108 General Chemistry for Engineers
CIE 101 Great Creations of Civil Engineering
CIE 303 Geodesy, GPS, and GIS
CIE 308 Engineering Statistics
CIE 323 Structural Engineering I
CIE 324 Structural Engineering II
CIE 327 Civil Engineering Materials
CIE 334 Soil Mechanics
CIE 340 Environmental Engineering
CIE 343 Hydraulic Engineering
CIE 354 Fluid Mechanics
CIE 361 Civil Engineering Laboratory I
CIE 362 Civil Engineering Laboratory II
CIE 415 Professional Practice Issues
CIE 435 Foundation Engineering
CIE 439 Transportation System Analysis
EAS 140 Engineering Solutions
EAS 207 Statics
EAS 208 Dynamics
EAS 209 Mechanics of Solids
EAS 230 Higher-Level Language or CSE 113 Introduction to Computer Science I
MAE 177 Introduction to Engineering Drawing/CAD
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 107 General Physics I
PHY 108/PHY 158 General Physics II/Lab
One applied math elective
One engineering elective
Five technical electives

Summary

Total required credit hours for the major.....112

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 107, CIE 101, EAS 140, MTH 141
Spring—CHE 108, MAE 177, MTH 142, PHY 107

SECOND YEAR
Fall—EAS 207; EAS 230 or CSE 113; MTH 241, PHY 108/PHY 158
Spring—EAS 208, EAS 209, MTH 306, one engineering elective

THIRD YEAR
Fall—CIE 303, CIE 323, CIE 327, CIE 354, CIE 361, CIE 308
Spring—CIE 324, CIE 334, CIE 340, CIE 343, CIE 362

FOURTH YEAR
Fall—CIE 435, CIE 439, two technical electives, one applied math elective
Spring—CIE 415, three technical electives

Electives and Course Groupings

CIVIL ENGINEERING TECHNICAL ELECTIVES
Five technical electives are required (see list below).
At least one of the technical electives must be CIE 428, CIE 429, CIE 430, CIE 438, CIE 442, or CIE 449.

(Continued on next page)

Senior-level courses outside civil engineering may also be taken as technical electives with prior approval from the Director of Undergraduate Studies.
Only three credits of the informal courses (CIE 498, CIE 499, EAS 396, and EAS 496) can be counted as a technical elective toward fulfillment of degree requirements.
CIE 423 Structural Engineering III
CIE 424 Computer-Aided Design in Civil Engineering
CIE 426 Finite Element Structural Analysis
CIE 428 Steel Design
CIE 429 Reinforced Concrete Design
CIE 430 Design of Wood Structures
CIE 437 Pavement Design
CIE 438 Structural Design and Construction of Foundations
CIE 441 Ecological Engineering
CIE 442 Treatment Process Engineering
CIE 444 Hydrologic Engineering
CIE 445 Groundwater Engineering
CIE 447 Environmental Engineering Practicum
CIE 448 Chemical Principles in Environmental Engineering
CIE 449 Environmental Engineering Design
CIE 458 Geoenvironmental Engineering
CIE 461 Air Pollution
CIE 469 Hazardous Waste Management
CIE 476 Design and Construction of Earth Structures
CIE 491 Construction Estimating
CIE 493 Project Management
CIE 498 Research and Creative Activities
CIE 499 Independent Study
EAS 480 Technical Communication
EAS 396 Engineering Career Institute (1 credit)
EAS 496 Co-op (2 credits)

APPLIED MATH ELECTIVES

MAE 376 Numerical Methods in Mechanical Engineering
MTH 309 Introductory Linear Algebra
MTH 417 Multivariable Calculus
MTH 418 Analytical Methods or MAE 428 Analytical Methods

ENGINEERING ELECTIVES

CSE 114 Introduction to Computer Science II
EE 200 EE Concepts/Nonmajors
MAE 204 Thermodynamics
EE 202 Circuit Analysis I
IE 320 Engineering Economy

Emphasis Areas

Construction Management Engineering
Environmental Engineering
Geotechnical Engineering
Structural Engineering

CIVIL ENGINEERING/BUSINESS ADMINISTRATION—BS/MBA

Acceptance Criteria

Same as BS in Civil Engineering, but students must also apply to MBA program. MBA applications are due by May 1 of the third year.

Required Courses

Same as Civil Engineering except two technical electives are required instead of five. In addition, the following MBA courses are required:

MGA 604 Financial Analysis & Reporting
MGA 609 Management Accounting
MGB 601 Behavior and Organizational Concepts
MGE 601 Economics for Managers
MGF 631 Financial Management
MGG 635 Business Communication
MGM 625 Marketing Management
MGO 630 Operations and Service Management
MGO 641 Strategic Management
MGT 601 Ethics and Corporate Finance
MBA Practicum
MBA Flex Core courses
Six MBA electives

Summary

Total required credit hours for the undergraduate portion.....98
Total required credit hours for the BS/MBA 154

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the School of Management's MBA handbook for requirements for MBA candidates.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall—CHE 107, CIE 101, EAS 140, MTH 141
Spring—CHE 108, MAE 177, MTH 142, PHY 107

SECOND YEAR

Fall—EAS 207; EAS 230 or CSE 113; MTH 241, PHY 108/PHY 158
Spring—EAS 208, EAS 209, MTH 306, one engineering elective, one applied math elective

THIRD YEAR

Fall—CIE 303, CIE 323, CIE 327, CIE 354, CIE 361, EAS 308
Spring—CIE 324, CIE 334, CIE 340, CIE 343, CIE 362

FOURTH YEAR

Fall—CIE 435, CIE 439, MGA 604, MGB 601, MGE 601, MGT 601, MGF 631
Spring—CIE 415, MGF 631, MGG 635, MGM 625, MGO 630, MGO 641, one CIE technical elective

FIFTH YEAR

Fall—MBA practicum, four MBA electives
Spring—MGA 609, one CIE technical elective, one applied math elective, two MBA electives

Contact School of Management for elective options. Additional program details may be found at http://www.eng.buffalo.edu/degree.mbacie2006.pdf.

Electives and Course Groupings

CIVIL ENGINEERING TECHNICAL AND APPLIED MATH ELECTIVES

Same as BS in Civil Engineering

Classics

Department of Classics

College of Arts and Sciences

338 Millard Fillmore Academic Core
Ellicott Complex
North Campus
Buffalo, NY 14261-0026
Phone: (716) 645-2154
Fax: (716) 645-2225
Web site: www.classics.buffalo.edu

J. Theodore Peña
Chair

Bradley A. Ault
Director of Undergraduate Studies

For a listing of Classics faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The field of classics consists of the study of the civilizations of ancient Greece and Rome, including their languages and literature, history, and archaeology.

Degrees Offered

- **Undergraduate:** BA, Minor
- **Concentrations:** Classical Civilizations, Ancient Greek Language and Literatures, Ancient Latin Language and Literatures, Mediterranean Archaeology, Ancient History
- **Graduate:** MA, PhD

Degree Options

The Department of Classics at the University at Buffalo offers majors and minors the opportunity to pursue either a general program of study, termed classical civilization, or one of several specialized subject concentrations, including ancient Greek language and literature, Latin language and literature, classical languages and literature, ancient history, and Mediterranean archaeology. The department also administers programs in Judaic studies and religious studies. (For descriptions of these two programs, refer to their separate listings in this catalog.)

CLASSICS—BA

Acceptance Criteria

Minimum GPA of 2.0 overall.

Advising Notes

Only courses at the 200-level or above may be used to satisfy requirements.

A course of 'ancient literature in translation' is any course that focuses on the literature of Greek, Roman, or Near Eastern society but does not require it to be read in the original language. Examples include: CL 205 Heroes, CL 313 Classical Mythology, CL 315 Epic in Translation, CL 316 Greek Drama in Translation.

A course of 'classics in later tradition' is any course, often offered in English, art history, political science, or philosophy, that traces the legacy of the ancient world in later cultures. Examples include: ENG 375 Heaven, Hell, and Judgment; ENG 315 Milton; and PHI 366 Medieval Philosophy.

Students interested in concentrating in ancient religions should make an appointment to meet with the director of undergraduate studies to discuss a sequence of courses.

Classical Civilization

Required Courses

Greek or Latin language through the 200 level (GR 101, GR 102, GR 201, GR 202; OR LAT 101, LAT 102, LAT 201, LAT 202)
One course in each of the following areas:
- Ancient Literature in Translation
- Ancient Art or Archaeology
- The Classical tradition in later societies

Four 300-400 level Classics courses, or approved 300-400 level courses in other departments

Classical Languages and Literatures

Required Courses

CL 222 Greek Civilization
CL 223 Roman Civilization
Both Greek and Latin through the 200 level (GR 101, GR 102, GR 201, GR 202 ; LAT 101, LAT 102, LAT 201, LAT 202)
One course in ancient archaeology or art
Two courses in either language at the 300-400 level
Two 300-400 level Classics courses, or approved 300-400 level courses in other departments

Ancient Greek Language and Literature

Required Courses

CL 222 Greek Civilization
CL 223 Roman Civilization
Five courses in 200-400 level Greek
One course on Greek art or archaeology
Three 300-400 level Classics courses, or approved 300-400 level courses in other departments

Latin Language and Literature

Required Courses

CL 222 Greek Civilization
CL 223 Roman Civilization
One course on Roman art or archaeology
Five courses in 200-400 level Latin
Three 300-400 level Classics courses, or approved 300-400 level courses in other departments

Summary

Total required credit hours for the major (not including 100-level languages courses) 33

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements for Classical Civilization, Classical Languages and Literatures, Ancient Greek Language and Literature, and Latin Language and Literature tracks

FIRST YEAR

Fall—GR 101 or LAT 101
Spring—GR 102 or LAT 102

SECOND YEAR

Fall—CL 222; GR 201 or LAT 201
Spring—CL 223; GR 202 or LAT 202

THIRD AND FOURTH YEARS

An additional eight courses in the upper levels in language, literature, and ancient civilizations (art history, archaeology, history, etc.) chosen in consultation with advisors.

Concentration in Mediterranean Archaeology

Required Courses

Greek or Latin language through the 200 level (GR 101, GR 102, GR 201, GR 202; OR LAT 101, LAT 102, LAT 201, LAT 202)
One course in each of the following three areas:
- Roman archaeology
- Greek archaeology
- Near East/Egypt archaeology

One course in the method, history, or theory of archaeology or an approved field program
Two courses in the archaeology of a non-Mediterranean culture
Three courses in the archaeology, history, art, and/or literature of a single ancient Mediterranean culture

Summary

Total required credit hours for the major.....33

See Baccalaureate Degree Requirements for general education and remaining university requirements.

(Continued on next page)

Recommended Sequence of Program Requirements in the Mediterranean Archaeology track

FIRST YEAR
Fall—GR 101 or LAT 101*
Spring—GR 102 or LAT 102

SECOND YEAR
Fall—GR 201 or LAT 201; one Roman archaeology course
Spring—GR 202 or LAT 202; one Greek archaeology course

THIRD AND FOURTH YEAR
An additional eight courses at the upper levels chosen in consultation with the advisors

Concentration in Ancient History

Required Courses
Greek or Latin language through the 200 level (GR 101, GR 102, GR 201, GR 202; or LAT 101, LAT 102, LAT 201, LAT 202)
One course in each of the following five areas:
- Roman history
- Greek history
- Near East/Egypt history

The history of a non-Classical ancient, medieval, or early modern culture
The method or theory of a related field (e.g., anthropology, art history, gender studies, developmental economies, or post-ancient history)
Four courses in the history, archaeology, art, and/or literature of a single ancient Mediterranean culture

Summary
Total required credit hours for the major.....33

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements for the Ancient History Track

FIRST YEAR
Fall—GR 101 or LAT 101*
Spring—GR 102 or LAT 102

SECOND YEAR
Fall—GR 201 or LAT 201; one Roman history course
Spring—GR 202 or LAT 202; one Greek history course

THIRD AND FOURTH YEAR
An additional eight courses at the upper levels chosen in consultation with the advisors

CLASSICS—MINORS

About the Programs
Students may pursue a general classical civilization minor or a specialized minor in one of five different subject areas. Note that only courses at the 200 level or higher may be used to satisfy the requirements for a classics minor.

CLASSICAL CIVILIZATION CONCENTRATION
One course in Greek or Roman civilization or history
One course in ancient literature in translation
One course in ancient archaeology or art
One course in the classical tradition in later societies
Two additional 300/400-level classics courses or approved courses in other departments

ANCIENT GREEK AND/OR LATIN LANGUAGE AND LITERATURE CONCENTRATION
GR 101- GR 102 or GR 201- GR 202; or LAT 101- LAT 102 or LAT 201- LAT 202
Two 300/400-level courses in Greek or Latin
Two courses in Greek or Roman civilization, history, archaeology, or art

ANCIENT HISTORY CONCENTRATION
Three courses concerned with the history, archaeology, art, and/or literature of one of the three ancient Mediterranean culture areas (Near East/Egypt, Greece, Rome), including one course in the history of that culture area
One course in the history of one of the other two ancient Mediterranean culture areas
One course in theory or methodology of a related field (e.g., anthropology, archaeology, art history, gender studies, post-ancient history)
One course in the history of a non-Mediterranean ancient, medieval, or early modern culture

MEDITERRANEAN ARCHAEOLOGY CONCENTRATION
Four courses concerned with the archaeology or art of one of the three ancient Mediterranean culture areas (Near East/Egypt, Greece, and Rome)
One course in the archaeology of a culture outside the ancient Mediterranean
One course in method, history, or theory of archaeology or an approved field program

Total required credit hours for the minor 18

Cognitive Science

Office of Interdisciplinary Degree Programs

College of Arts and Sciences

203 Clemens Hall
NorthCampus
Buffalo, NY 14260-4670
Phone: (716) 645-2245
Fax: (716) 645-3640
Web site: cas.buffalo.edu/programs/idp/ugrad/
E-mail: dryden@buffalo.edu

Lee Dryden
Director

About the Program

Cognitive Science is one of six concentration areas in the Social Sciences Interdisciplinary major. It is designed for students interested in using an interdisciplinary approach to study the cognitive aspects of such fields as philosophy, artificial intelligence, cognitive psychology, and computational linguistics. It is the study of how the mind works. It investigates thought and consciousness, the senses and emotions, the structure of language, cultural patterns, neural organization, and the computational analogs of mental processes. It examines how these areas interact, how they develop in the growing human, and how they appear in animals. For more information please see the Social Sciences Interdisciplinary Degree Programs.

Degrees Offered

- **Undergraduate:** BA in Social Sciences Interdisciplinary
- **Concentration:** Cognitive Science

See Social Sciences Interdisciplinary for degree requirements

Communication

Department of Communication

College of Arts and Sciences

359 Baldy Hall
North Campus
Buffalo, NY 14260-1060
Phone: (716) 645-2141
Fax: (716) 645-2086
Web site: communication.buffalo.edu

Frank Tutzauer
Chair

Mary B. Cassata
Director of Undergraduate Studies

Janeen M. Wilder
Lead Undergraduate Academic Advisor

For a listing of Communication faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Department of Communication seeks to understand and to improve human communication in all its forms. The undergraduate program provides students with comprehensive knowledge of the nature of human communication, the symbol system by which it occurs, its media, and its effects. As a field of concentration, the department contributes to a liberal education and provides basic preparation for either graduate study or careers in communication. Our teaching transforms students from passive to active learners, deepening their understanding of communication while helping them learn fundamental scientific processes—how scholars ask questions and conduct inquiries, gather and analyze data, and articulate results. Finally, the department provides a flexible environment where students are free to work closely with faculty and follow their own interests.

Employment opportunities exist in organizational and industrial institutions, public relations and advertising agencies, new media and technology centers, personnel departments, the mass media, and civil and social agencies. Students have also gone on to graduate school or law school, military officer training school, and law enforcement.

Those wishing to pursue teacher education must obtain a dual major as communication alone is not accepted by graduate programs in the New York State.

Since 2005, UB's Department of Communication has offered a Bachelor of Arts (BA) Communication program in Singapore, in partnership with the Singapore Institute of Management/SIM University.

The communication degree program offered in Singapore is comparable in all respects to the one offered in Buffalo, and has the same admission and degree requirements. Communication faculty from UB, other U.S. universities, and SIM teach in the Singapore program.

Students enrolled in the Singapore program undertake three semesters of course work per calendar year and can complete their degrees within three years. They have the option of completing one or more of their semesters of study at UB. As of January 2008, more than 250 students have enrolled in the communication degree program in Singapore and the program's first commencement is planned in July 2008.

Degrees Offered

- **Undergraduate:** BA
- **Graduate:** MA, PhD

Advisement

All prospective majors and accepted majors are expected to seek ongoing advisement regarding their communication curriculum. Prospective majors are encouraged to contact the academic advisor at com-advisor@buffalo.edu as soon as possible for initial communication advisement and explanation of the curriculum and degree requirements. Accepted and intended majors are encouraged to seek academic advisement once each semester concerning their progress in the program. It is strongly recommended that students also work on joint or double majors and/or minors.

Transfer Policy

Students wishing to transfer to UB must be accepted by the university prior to acceptance by the Communication department. Criteria for acceptance into the department are the same for transfer students as they are for students entering the university as freshmen. Evaluation of courses taken at another school for the department major is done by the department. Transfer students are required to seek Communication advisement and can do so by emailing com-advisor@buffalo.edu

The department has agreed to accept certain courses from various colleges, especially community colleges within the state. Listings of these courses are available from undergraduate studies academic advisors or through http://taurus.buffalo.edu. Transfer students may also check with the department concerning the acceptability of individual courses, and should provide the academic advisor with a transcript, course description and syllabus of any courses they wish to apply to the communication curriculum. The department accepts no more than four appropriate communication courses toward the major requirements, specifically the core required classes and the communication electives. The department accepts all appropriate transfer courses outside the area of communication that are required for the major.

COMMUNICATION—BA

Acceptance Criteria

Completion of a minimum of 45 credit hours.
Completion of the prerequisite courses (COM 101 and at least 2 of these 3 courses: COM 217, COM 225, COM 240) with a minimum GPA of 2.5.
Completion of an approved statistics course (with a minimum grade of C) and CSE 111 or CSE 113 (see communication advisor).
Completion of the university's writing skills requirement.

Advising Note

Minimum GPA of 2.5 in communication courses at UB is required for graduation.

Minors and/or joint majors are encouraged (see Communication advisor).

Prerequisite Courses

COM 101 Principles of Communication
COM 217 Communication in Organizations
COM 225 Interpersonal Communication
COM 240 Survey of Mass Communication
One statistics course (with a grade of C or better)
CSE 111 or CSE 113
Students should complete PSY 101 and SOC 101 prior to applying for the major

Required Courses

COM 217 Communication in Organizations
COM 225 Interpersonal Communication
COM 240 Survey of Mass Communication
COM 337 Communication Theory
PSY 101 Introductory Psychology
SOC 101 Introduction to Sociology
One advanced writing course (COM 300 Written Communication, COM 375/ENG 202 Technical Writing, COM 398/ENG 398 or ENG 399 Journalism, COM 449 Promotional Writing)
One 100 or 200 level LIN course or COM 125 Introduction to the Internet
One of the following: PSY 323 Community Psychology, PSY 331 Social Psychology, PSY 333 Psychology of Work in Organizations, PSY 341 Cognitive Psychology, PSY 342 Intro to Cognitive Science, SOC 371 Individual and Society
One research methods course from the following: COM 205, PSC 200, PSY 250, SOC 293, SSC 213
Eight COM electives

Summary

Total required credit hours for the major..... 63-65

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall—COM 101, SOC 101
Spring—COM 240, CSE 111 or CSE 113, PSY 101

SECOND YEAR

Fall—COM 217, one statistics course, one linguistics course or COM 125
Spring—COM 225, one research methods course

THIRD YEAR

Fall—Two COM electives, COM 337
Spring—Two COM electives; one of the following: PSY 323, PSY 331, PSY 333, PSY 341, PSY 342, SOC 371

FOURTH YEAR

Fall—One advanced writing course, two COM electives
Spring—Two COM electives

Electives and Course Groupings

Only two informal courses (e.g., COM 496 Internship and COM 499 Independent Study) of 3 credit hours or more may be counted toward the eight communication elective courses.

Comparative Literature*

Department of Comparative Literature

College of Arts and Sciences

638 Clemens Hall
North Campus
Buffalo, NY 14260
Phone: (716) 645-2066
Fax: (716) 645-5979
Web site: wings.buffalo.edu/academic/department/AandL/col/

David Johnson
Chair

**Not a baccalaureate degree program*

For a listing of Comparative Literature faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Comparative literature offers interdisciplinary and international study of literature, philosophy, and culture, from Plato to The Matrix. Rather than specializing in periods and nationalities, we ask fundamental questions about what makes culture work, how language operates, what is the relationship between politics and art, and what are the underlying motives for religion. Our courses thus establish a meeting ground between philosophy, psychoanalysis, feminism, political theory, ethics, and religion. This is why we teach enduring works of literature (e.g. by Cervantes, Flaubert, Dostoyevsky, Woolf, Borges, and Kafka) along with major thinkers , such as Plato, Freud, Nietzsche, Foucault, and Derrida, among others. Artists, whether of 'high art' or the mass media, are central to our curriculum because they have posed indispensable questions about the nature of culture, literature, and community. Our literary and cultural offerings have traditionally been small and intensive, focusing on individualized education. Because Comparative Literature is such a small department, our undergraduate courses are seminar classes. Students sit around a conference table and discuss the texts and ideas in detail. The Comparative Literature department offers the possibility of a small college's intimate intellectual community amidst a huge and multidiverse university setting. Of recent years, an increasing number of UB undergraduates have opted either for the Minor in Comparative Literature or the Special Major offered under the auspices of the College of Arts and Sciences. Many students taking a comparative literature minor find that it provides an indispensable background to almost any major in the College of Arts and Sciences. Because of its rigorous training in analytical and interpretative skills, comparative literature also provides invaluable preparation for graduate school and for careers in law, medicine, psychology, the media, history, sociology, anthropology, and arts management.

Degrees Offered

- **Undergraduate:** Special Major (through Special Majors Program), Minor

Advisement

General information regarding the department and its programs will be furnished by Professor Kalliopi Nikolopoulou, listed above. Depending on their specific interests, students will also be assigned an individual mentor from among the Comparative Literature faculty.

COMPARATIVE LITERATURE—MINOR

Acceptance Criteria

Minimum GPA of 2.0 overall.

Advising Notes

Our minor complements a variety of major courses of study in the social sciences and humanities. All students interested in the minor in comparative literature are encouraged to discuss possible courses of study with the department's undergraduate advisor.

For current courses, see http://wings.buffalo.edu/academic/department/AandL/col/courses/cd.html.

(Continued on next page)

Required Courses
COL 301 Literary Theory: Twentieth Century
COL 302 Literary Theory: History

Electives and Course Groupings
Students select five additional courses at upper and lower levels. Specific requirements vary slightly according to affiliation with the College of Arts and Sciences. Certain credits from the Departments of English, Media Study, Philosophy, and Romance Languages and Literatures can be credited toward this minor.

The Department of Comparative Literature offers a wide range of courses in literature, film, popular culture and gender, and post-colonial studies.

Computational Physics

Department of Computer Science and Engineering

School of Engineering and Applied Sciences

226 Bell Hall
North Campus
Buffalo, NY 14260-2000
Phone: (716) 645-3180
Fax: (716) 645-3464
Web site: www.cs.buffalo.edu

Department of Physics

College of Arts and Sciences

239 Fronczak Hall
North Campus
Buffalo, NY 14260-1500
Phone: (716) 645-2017
Fax: (716) 645-2507
Web site: www.physics.buffalo.edu

Chunming Qiao (Computer Science and Engineering)
Director of Undergraduate Studies (CSE)
qiao@computer.org

Hong Luo (Physics)
Director of Undergraduate Studies (PHY)
luo@buffalo.edu

About the Program

This degree program, offered jointly by the Department of Physics and the Department of Computer Science and Engineering, makes it possible to pursue a number of career options. Graduates can pursue a research career in the traditional areas of physics such as condensed matter physics or particle physics, with a strong emphasis on computation. Graduates who pursue careers in physics education find that they are well prepared to use computers in the classroom and the teaching laboratory, and to develop educational software. Graduates can also play an important role in the development of virtual universities and the technology needed to facilitate distance learning, or pursue employment in firms that develop scientific software, as well as computer games. Even Wall Street employers are interested in people with a background in computational physics.

Degrees Offered

- **Undergraduate:** BS
- **Combined Degree:** BS (Computational Physics)/MS (Physics)

Advisement

Advanced Placement: Students who receive a 4 or 5 on the Physics C Mechanics exam can get credit for PHY 107 General Physics I. A grade of 4 or 5 on the Physics C Electricity & Magnetism exam provides credit for PHY 108/PHY 158 General Physics 2/Lab

Transfer Policy

Transfer students from accredited institutions are accepted into this program if they have completed, with a minimum GPA of 2.5, courses equivalent to CSE 115-CSE 116, MTH 141-MTH 142, and PHY 107-PHY 108/PHY 158.

COMPUTATIONAL PHYSICS—BS

Acceptance Criteria
Minimum GPA of 2.5 in the prerequisite courses.

Prerequisite Courses
CSE 115 Introduction to Computer Science for Majors I
CSE 116 Introduction to Computer Science for Majors II
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I or PHY 117 Honors Physics I
PHY 108 General Physics II or PHY 118 Honors Physics II
PHY 158 General Physics II Lab

Required Courses
CSE 191/MTH 191 Introduction to Discrete Mathematics
CSE 250 Algorithms and Data Structures
CSE 305 Introduction to Programming Languages
CSE 437/MTH 437 Introduction to Numerical Analysis I or PHY 410 Computational Physics I
CSE 438/MTH 438 Introduction to Numerical Analysis II or PHY 411 Computational Physics II
CSE 442 Software Engineering
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
PHY 207 General Physics III or PHY 217 Honors Physics III
PHY 208 General Physics IV
PHY 257 General Physics III Lab
PHY 301 Intermediate Mechanics I
PHY 307 Modern Physics Lab
PHY 401 Modern Physics I
PHY 403 Electricity and Magnetism I
PHY 405 Thermal and Statistical Physics I
PHY 407 Advanced Laboratory or PHY 408 Advanced Laboratory
One calculus-based probability/statistics course elective (e.g., EAS 305 Applied Probability or MTH 411 Probability Theory)

Summary
Total required credit hours for the major..... 87-90

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CSE 115, MTH 141
Spring—CSE 116, MTH 142; PHY 107 or PHY 117

SECOND YEAR
Fall—CSE 191/MTH 191, MTH 241; PHY 108 or PHY 118; PHY 158
Spring—CSE 250, MTH 306; PHY 207 or PHY 217; PHY 208, PHY 257

THIRD YEAR
Fall—CSE 305, PHY 301, PHY 307, PHY 401
Spring—CSE 442, MTH 309; PHY 407 or PHY 408

FOURTH YEAR
Fall—PHY 403, PHY 405; CSE 437/MTH 437 or PHY 410
Spring—CSE 438/MTH 438 or PHY 411; one calculus-based probability/statistics course elective (e.g., EAS 305 or MTH 411)

COMPUTATIONAL PHYSICS/PHYSICS—BS/MS

Acceptance Criteria
Minimum GPA of 3.0 in the prerequisite courses.

Prerequisite Courses
CSE 115 Introduction to Computer Science for Majors I
CSE 116 Introduction to Computer Science for Majors II
CSE 191/MTH 191 Introduction to Discrete Mathematics
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
PHY 107 General Physics I or PHY 117 Honors Physics I
PHY 108 General Physics II or PHY 118 Honors Physics II
PHY 158 General Physics II Lab
PHY 207 General Physics III or PHY 217 Honors Physics III
PHY 257 General Physics III Lab

Required Courses
CSE 250 Algorithms and Data Structures
CSE 305 Introduction to Programming Languages
CSE 442 Software Engineering
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
PHY 208 General Physics IV
PHY 301 Intermediate Mechanics I
PHY 307 Modern Physics Lab
PHY 401 Modern Physics I
PHY 403 Electricity and Magnetism I
PHY 405 Thermal and Statistical Physics I
PHY 505 Computational Physics I
PHY 506 Computational Physics II
PHY 515 High Performance Scientific Computing I
PHY 516 High Performance Scientific Computing II
PHY 551 or PHY 552 Graduate Lab
One calculus-based probability/statistics course elective (e.g., EAS 305 Applied Probability or MTH 411 Probability Theory)
15 credit hours of PHY 500 (electives and M.S. thesis)

Summary
Total required credit hours for the undergraduate portion.....78

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the graduate school's policies and procedures manual for requirements for master's candidates.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CSE 115, MTH 141
Spring—CSE 116, MTH 142; PHY 107 or PHY 117

SECOND YEAR
Fall—CSE 191/MTH 191, MTH 241; PHY 108 or PHY 118; PHY 158
Spring—CSE 250, MTH 306; PHY 207 or PHY 217; PHY 208, PHY 257

THIRD YEAR
Fall—CSE 305, PHY 301, PHY 307, PHY 401
Spring—MTH 309, one calculus-based probability/statistics course elective (e.g., EAS 305 or MTH 411)

FOURTH YEAR
Fall—CSE 442, PHY 403, PHY 405, PHY 505
Spring—PHY 506, PHY 552

FIFTH YEAR
Fall—PHY 515, two 500-level PHY electives
Spring—PHY 516, two 500-level PHY electives

Computer Engineering

Department of Computer Science and Engineering

School of Engineering and Applied Sciences

201 Bell Hall
North Campus
Buffalo, NY 14260-2000
Phone: (716) 645-3180
Fax: (716) 645-3464
Web site: www.cse.buffalo.edu
E-mail: cse-uginfo@cse.buffalo.edu

Bharat Jayaraman
Chair

Ramalingam Sridhar
Director of Undergraduate Studies

Helene Kershner
Assistant Chair

Jaynee Straw
Undergraduate Advisor

For a listing of Computer Engineering faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Computer engineering, anchored in computer science, engineering design, physics and mathematics, is primarily concerned with the creation of information processing devices and systems. Computer engineers do research and development in all aspects of computing, including software and hardware at both the circuit and system levels, emphasizing the physical principles of computing hardware. Computer engineers are well trained to address critical interface issues between hardware and software essential to many current and future applications. Reliability and availability of systems, performance evaluation and optimization, networking and computer communication, integrated circuit power reduction, miniaturization, and VLSI (Very Large Scale Integration) are all within the scope of computer engineering.

The department aims to provide students with strong conceptual foundations (theoretical and experimental), and also expose them to the forefront of the developments in the field of computing. Recognizing the applicability of computing to all fields of knowledge and practice, the department provides a variety of degrees and programs at each of the degree levels, and cooperates with other units of the university to provide interdisciplinary degree programs.

Specific objectives of the computer engineering program are:

In their careers, our graduates will:

- work productively as Computer Engineers, including supportive and leadership roles on multi-disciplinary teams,
- communicate effectively, recognize and incorporate societal needs and constraints in their professional endeavors, and practice their profession with high regard to legal and ethical responsibilities,
- engage in life-long learning, such as graduate study, to remain current in their profession and be leaders in our technological society.

Degrees Offered

- **Undergraduate:** BS (ABET accredited)
- **Graduate:** MS, PhD

Advisement

Students must need minimum GPA requirements in engineering as specified by the Dean of Engineering to graduate from the program. See the School of Engineering and Applied Sciences Academic Requirements section.

In addition, upon admission, the Department of Computer Science and Engineering writes to inform students of their faculty advisors. Students must see their advisor at least once per semester.

A minimum GPA of 2.5 in technical courses is required. This is the GPA computed over all required courses listed for the major requirements.

Required courses cannot be taken Pass-Fail or Satisfactory-Unsatisfactory.

Prerequisites are satisfied with grade of C- or better.

Acceptance Information

See the School of Engineering and Applied Sciences for Acceptance Information.

In addition, freshmen and transfers who meet the School of Engineering and Applied Sciences standards are generally provisionally admitted to the department.

Transfer students who have already fulfilled the admission requirements are fully admitted. For those provisionally admitted, the departmental advisor tracks academic progress until successful completion of admission requirements are complete, at which time the student is fully admitted. A 2.5 GPA in specified admission courses is required for full admission to the program, as well as an overall 2.5 GPA among technical courses used in the program.

Note: See also the Acceptance Criteria for Computer Engineering in the following degree chart.

Transfer Policy

Transfer students must first apply to the university and meet the university transfer admission requirements. For admission of transfer students to engineering, see the School of Engineering and Applied Science Transfer Policy.

In addition, computing courses taken outside the department and offered as substitutes for computer science courses are evaluated individually by the Undergraduate Affairs Committee. Most courses taken from a recognized college-level computer science department are acceptable. Data-processing courses are generally not acceptable as substitutes for any computer science course. Experience has shown that any course with a specific programming language in its title is often a skills course rather than a computer science course. The student must provide evidence to help the department determine whether courses taken at another institution are equivalent to UB courses; course syllabi are generally preferable to catalog descriptions, as catalog descriptions do not provide enough detail for accurate evaluation. Additional information on course equivalencies may be found on the university's transfer and articulation website at: http://taurus.buffalo.edu.

COMPUTER ENGINEERING—BS

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in CSE 116; MTH 142*; and PHY 107.

**Unless exempted by SAT score, Advanced Placement credits, or transfer credits*

Prerequisite Courses
CSE 115 Intro to Computer Science for Majors I
CSE 116 Intro to Computer Science for Majors II
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I

Required Courses
CHE 107 General Chemistry for Engineers
CSE 191 Intro to Discrete Structures
CSE 250 Data Structures
CSE 321 Real-Time & Embedded Operating Systems
CSE 341 Computer Organization
CSE 379 Intro to Microprocessors & Microcomputers
CSE 380 Intro to Microprocessors Lab
CSE 442 Software Engineering
CSE 453 Hardware/Software Integrated Systems Design
EAS 305 Applied Probability
EE 202 Circuit Analysis I
EE 303 Signal Analysis & Transform Methods
EE 310 Electronic Devices & Circuits I
EE 312 Basic Electronic Instrumentation Laboratory
EE 378 Digital Principles
MAE 204 Thermodynamics or EAS 207 Statics
MTH 241 College Calculus III
MTH 306 Intro to Differential Equations
MTH 309 Linear Algebra or MTH 437 Numerical Analysis I
PHY 108/158 General Physics II/Lab
Two additional 400-level CSE electives
(excludes CSE 494-CSE 499)
One technical elective
(choice of 400-level CSE elective not previously used for any other requirement, CSE 305, CSE 331, CSE396, or other approved course by Undergraduate Affairs Committee)

Summary
Total required credit hours for the major.....105-106*

**Students lacking the 128 credits required to graduate are strongly urged to take an engineering design-oriented course as elective credit. See the CSE Undergraduate Advisor for an up-to-date listing of design electives.*

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 107, CSE 115, MTH 141
Spring—CSE 116, MTH 142, PHY 107

SECOND YEAR
Fall—CSE 191, EE 202, MTH 306, PHY 108/PHY 158
Spring—CSE 250, MTH 241, MTH 309

THIRD YEAR
Fall—EAS 305, EE 310, EE 312, EE 378
Spring—CSE 379, CSE 380, EE 303, CSE 341

FOURTH YEAR
Fall—CSE 321, CSE 442; MAE 204 or EAS 207, CSE 400-level technical elective
Spring—CSE 453, CSE 400-level technical elective, CSE technical elective

Computer Science

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E-mail: cse-uginfo@cse.buffalo.edu

Bharat Jayaraman
Chair

Ramalingam Sridhar
Director of Undergraduate Studies

Helene Kershner
Assistant Chair

Jaynee Straw
Undergraduate Advisor

For a listing of Computer Science faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Computer science is the systematic study of algorithmic methods for representing and transforming information, including their theory, design, implementation, application, and efficiency. The discipline emerged in the 1950s from the development of computability theory and the invention of the stored-program electronic computer. The roots of computer science extend deeply into mathematics and engineering. Mathematics imparts analysis to the field; engineering imparts design.

The department aims to provide students with strong conceptual foundations (theoretical and experimental), and also expose them to the forefront of the developments in the field of computing. Recognizing the applicability of computing to all fields of knowledge and practice, the department provides a variety of degrees and programs at each of the degree levels, and cooperates with other units of the university to provide interdisciplinary degree programs.

Degrees Offered

Undergraduate: BA, BS, Minor
Graduate: MS, PhD
Combined: BS/MS (accelerated)

Advisement

Upon admission, the Department of Computer Science and Engineering writes to inform students of their faculty advisors. Students should make an appointment with their advisor as soon as possible to discuss a program of study and to choose between the BA and the BS program. Students must see their advisor at least once a semester thereafter. Under current departmental guidelines, students may freely switch degree programs (from BA to BS or from BS to BA) at any time, but must complete all appropriate courses.

For the BS program, a minimum GPA of 2.5 in technical courses is required to remain in good standing as well as graduate. This is the GPA among all CSE, MTH, STA, and EAS courses used below as required courses, except those courses taken to satisfy the science sequence requirement.

For the BA program, a minimum GPA of 2.5 in technical courses is required to remain in good standing as well as graduate. This is the GPA among all CSE, MTH, STA, MGT and EAS courses used below as required courses, except those courses taken to satisfy the science sequence requirement and external concentration.

No required courses may be taken Pass-Fail or Satisfactory-Unsatisfactory.

Prerequisites are satisfied with a grade of C- or better.

Acceptance Information

Generally, incoming freshmen and transfer students are provisionally accepted into the program (provided completed coursework is satisfactory) and progress is tracked until successful completion of requirements are satisfied, at which time students are fully accepted. Incoming transfer students, who have successfully completed the prerequisite admission courses, are fully accepted. Specific GPA requirements and prerequisite admission courses are stated in the acceptance criteria outlined in each degree program.

Transfer Policy

Transfer students must first apply to the university and meet the university transfer-admission GPA requirements before consideration for admission to the Department of Computer Science and Engineering. Computing courses taken outside the department, and offered as substitutes for computer science courses, are evaluated individually by the Undergraduate Affairs Committee. Most courses taken from a recognized college-level computer science department are acceptable. Data-processing courses are generally not acceptable as substitutes for any computer science course. Experience has shown that any course with a specific programming language in its title is often a skills course rather than a computer science course. The student must provide evidence to help the department determine whether courses taken at another institution are equivalent to UB courses; course syllabi are generally preferable to catalog descriptions as catalog descriptions do not provide enough detail for accurate evaluation. Additional information on course equivalencies may be found on the university's transfer and articulation Web site at: http://taurus.buffalo.edu.

COMPUTER SCIENCE—BS

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in CSE 116 and CSE 191.

Prerequisite Courses

CSE 115 Intro to Computer Science for Majors I
CSE 116 Intro to Computer Science for Majors II
CSE 191 Introduction to Discrete Structures

Required Courses

CSE 241 Digital Systems
CSE 250 Data Structures
CSE 305 Intro to Programming Languages
CSE 331 Intro to Algorithm Analysis & Design
CSE 341 Computer Organization
CSE 396 Intro to the Theory of Computation
CSE 421 Intro to Operating Systems
CSE 442 Software Engineering
One calculus-based probability or statistics course (e.g., EAS 305, MTH 411)
One CSE course in the Artificial Intelligence area:
CSE 463 Knowledge Representation
CSE 467 Computational Linguistics
CSE 473 Intro to Computer Vision & Image Processing
CSE 474 Intro to Machine Learning
One CSE course in the Software Systems area:
CSE 321 Real-Time & Embedded Operating Systems
CSE 451 Program Development
CSE 462 Database Concepts
CSE 486 Distributed Systems
CSE 489 Modern Networking Concepts
MTH 141 College Calculus I
MTH 142 College Calculus II
One 400-level CSE course from any area (except CSE 494-CSE 499, a required CSE 400-level courses, or a course already used to satisfy the Artificial Intelligence or Software Systems areas above)
One mathematical course from any dept. (approval of CSE faculty advisor is required for course selection)
Any two-course science and engineering sequence (from Biology, Chemistry, Geology, Physics, or any department in the School of Engineering and Applied Sciences, except CSE)

Summary

Total required credit hours for the major..... 77-80

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CSE 115, MTH 141
Spring—CSE 116, MTH 142, CSE 191

SECOND YEAR
Fall—CSE 241, CSE 250, one calculus-based probability or statistics course (e.g., EAS 305, MTH 411)
Spring—CSE 305, CSE 396, CSE 341

THIRD YEAR
Fall—CSE 421, CSE 442, spring mathematical course (approved by committee)
Spring—CSE course (AI), CSE 331

FOURTH YEAR
Fall—CSE course (SYS), one science and engineering sequence course
Spring—CSE 400-level course, one science and engineering sequence course

COMPUTER SCIENCE—BA

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in CSE 116 and CSE 191.

Prerequisite Courses
CSE 115 Intro to Computer Science for Majors I
CSE 116 Intro to Computer Science for Majors II
CSE 191 Intro to Discrete Structures

Required Courses
CSE 241 Digital Systems
CSE 250 Data Structures
One of the following: MTH 121/MTH 122 Survey of Calculus & Its Applications I & II; MTH 131 Mathematical Analysis for Management; or MTH 141/MTH 142 College Calculus I & II
Two of the following: CSE 305 Intro to Programming Languages; CSE 321 Real Time and Embedded Operating Systems; CSE 331 Intro to Algorithm Analysis and Design; CSE 341 Computer Organization; or CSE 396 Intro to the Theory of Computation
Three CSE courses at the 300 level or above with minimum two at the 400 level (excludes CSE 494 - CSE 499)
One of the following: STA 111 Intro to Probability and Statistics I; STA 119 Statistical Methods; MGQ 301 Statistical Decisions in Management; MTH 411 Probability Theory; EAS 305 Applied Probability; or other probability/statistics courses that may be subject to approval upon request
Any two-course science and engineering sequence (from Biology, Chemistry, Geology, Physics, or any department in the School of Engineering and Applied Sciences, except CSE).
Five external concentration courses [five courses at the 200-level or above, with at most two 200-level bearing a total of at least 15 credits; the courses may be in one department, or multiple departments (with approval from Undergraduate Affairs Committee) (excludes any required courses used above or any courses numbered 494-499)].

Summary
Total required credit hours for the major..... 67-77

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CSE 115, one of (MTH 121, MTH 131 or MTH 141)
Spring—CSE 116, MTH 122 or MTH 142 (unless completed MTH 131), one external concentration course

SECOND YEAR
Fall—CSE 191, CSE 241, one science and engineering sequence course
Spring—CSE 250, one probability or statistics course (e.g., STA 111, MTH 411), one science and engineering sequence course

THIRD YEAR
Fall—one of (CSE 305, CSE 321, CSE 341, or CSE 396), one external concentration course
Spring—one of (CSE 305, CSE 321, CSE 331, CSE 341, or CSE 396), one 300 or 400-level required CSE course

FOURTH YEAR
Fall—one 300 or 400-level required CSE course, two external concentration courses
Spring—one 300 or 400-level required CSE course, one external concentration course

COMPUTER ENGINEERING—BS

About the Program
The computer engineering BS degree combines the study of mathematics, computer science, and electrical engineering. Computer engineering emphasizes those topics that bridge the electrical engineering and computer science disciplines: computer hardware, device-oriented software, and the interface between hardware and software. General education is integrated into the curriculum consistent with other engineering programs at UB. For further information, see the Computer Engineering entry in this catalog, http://undergrad-catalog.buffalo.edu/academicprograms/comeng.shtml.

COMPUTER SCIENCE / COMPUTER SCIENCE AND ENGINEERING—BS/MS

Acceptance Criteria
Completion of at least 56 credits with a minimum GPA of 3.0 overall (five-year path), or a minimum GPA of 3.3 overall (four-year path) in all required CSE, MTH, and EAS courses. Transfer students must complete at least one semester at the university before applying.

Application must be accompanied by two letters of recommendation from our faculty.

It is recommended that candidates complete CSE 115, CSE 116, CSE 191, CSE 241, CSE 250, *MTH 141 or *MTH 142 and a calculus-based probability or statistics course prior to applying.
**Unless exempted by an SAT score, Advanced Placement credits, or transfer credits.*

Advising Notes
In addition to university-wide graduation requirements, a minimum GPA of 3.0 is required for each of the following three sets of courses: (a) all undergraduate CSE, EAS, MTH, and STA required courses; (b) all graduate courses; and (c) CSE 505, CSE 521, one of [CSE 531, CSE 596], one of [CSE 563, CSE 573, CSE 574, CSE 655], one of [CSE 552, CSE 589, CSE 590, CSE 593).

No required courses may be taken Pass-Fail or Satisfactory-Unsatisfactory.

The grade for each course must be a B- or higher.

A minimum of 30 graduate credits is required by the Graduate School to satisfy MS university requirements. A total of 134 credits (both undergraduate and graduate) is required for this program, which includes the university general education courses.

Prerequisite Courses
CSE 115 Intro to Computer Science for Majors I
CSE 116 Intro to Computer Science for Majors II
CSE 191 Intro to Discrete Structures
CSE 241 Digital Systems
CSE 250 Data Structures
MTH 141 College Calculus I
MTH 142 College Calculus II
One calculus-based probability or statistics course (e.g., EAS 305, MTH 411)

Required Courses
CSE 331 Intro to Algorithm Analysis & Design
CSE 341 Computer Organization
CSE 396 Intro to the Theory of Computation
CSE 442 Software Engineering
One 300-level or higher MTH or STA course
Any two-course science and engineering sequence (from Biology, Chemistry, Geology, Physics, or any department in the School of Engineering and Applied Sciences, except CSE).
CSE 505 Fundamentals of Programming Languages
CSE 521 Intro to Operating Systems
CSE 531 Analysis of Algorithms or CSE 596 Intro to the Theory of Computation

(Continued on next page)

One of the following:
CSE 563 Knowledge Representation
CSE 573 Intro to Computer Vision & Image Processing
CSE 574 Intro to Machine Learning
CSE 655 Intro to Pattern Recognition
One of the following:
CSE 552 VLSI (Very Large Scale Integration) Testing
CSE 589 Modern Networking Concepts
CSE 590 Computer Architecture
CSE 593 Intro to VLSI Electronics
One additional 500-level CSE course (but not CSE 503 Computer Science for Nonmajors I, CSE 504 Computer Science for Nonmajors II, or CSE 507 Object Oriented Applications & Systems Design (for nonmajors)
One additional 600-level CSE course
Capstone event (MS Thesis or MS Project)

Summary

Total required credit hours for the undergraduate portion..... 58-60
Total required credit hours for the BS/MS 88-90

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the graduate school's policies and procedures manual for requirements for master's degree candidates.

Recommended Sequence of Program Requirements

FOUR-YEAR PATH

FIRST YEAR
Fall—CSE 115, MTH 141
Spring—CSE 116, CSE 191, MTH 142

SECOND YEAR
Fall—CSE 241, CSE 250, one calculus based probability or statistics course (e.g., EAS 305, MTH 411)
Spring—CSE 396, CSE 341, CSE 331

THIRD YEAR
Fall—CSE 505, one 300-level or higher MTH or STA course, one science and engineering sequence course
Spring—CSE 442; one of: CSE 563, CSE 573, CSE 574, CSE 655; one science and engineering sequence course

FOURTH YEAR
Fall—CSE 521; one of: CSE 531, CSE 596; one 600 level CSE course
Spring—One of: CSE 552, CSE 589, CSE 590, CSE 593; one 500 level CSE course (but not CSE 503, CSE 504, or CSE 507), Capstone event (MS Thesis or MS Project)

FIVE-YEAR PATH

FIRST YEAR
Fall—CSE 115, MTH 141
Spring—CSE 116, MTH 142

SECOND YEAR
Fall—CSE 191, CSE 241
Spring—CSE 250, calculus-based probability or statistics course (e.g., EAS 305, MTH 411)

THIRD YEAR
Fall—CSE 396, one 200-level or higher MTH or STA course, one science and engineering sequence course
Spring—CSE 341, CSE 331, one science and engineering sequence course

FOURTH YEAR
Fall—CSE 505, CSE 521
Spring—CSE 442, one 500-level CSE course (but not CSE 503, CSE 504, or CSE 507)

FIFTH YEAR
Fall—One of: CSE 563, CSE 573, CSE 574, CSE 655; one of: CSE 552, CSE 589, CSE 590, CSE 593; one 600-level CSE course
Spring—One of: CSE 531, CSE 596; Capstone Event (MS Thesis or MS Project)

COMPUTER SCIENCE—MINOR

About the Minor

Six CSE courses (excluding CSE 494 - CSE 499), with at least two at the 300-level or above. A minimum GPA of 2.5 overall in those courses is required. At least three courses must be taken at UB. A maximum of two of these courses may be used for a student's major.

Admission into the computer science minor is based on completion of any three of the courses that constitute a minor in computer science with a minimum combined GPA of 2.5 in those courses. Applicants to the computer science minor should bring a copy of their current UB DARS report directly to the Department of Computer Science and Engineering during the semester after three of the six required courses are completed.

Sample Minor Programs

Software track: CSE 115, CSE 116, CSE 191, CSE 250, CSE 305, CSE 442
Hardware track: CSE 115, CSE 116, CSE 191, CSE 241, CSE 379, CSE 380

Cora P. Maloney College*

255 Capen Hall
North Campus
Buffalo, NY 14260-1603
Phone: (716) 645-7301
Fax: (716) 645-6027
Web site: cpmc.buffalo.edu

Dr. Letitia Thomas
Director

**Not a baccalaureate degree program*

For a listing of Cora P. Maloney College course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Cora P. Maloney College (CPMC), chartered in 1976, is a unique college at the University at Buffalo, designed to provide students with academic experiences from a community perspective. CPMC focuses on a range of educational issues including academic achievement, cultural/social awareness, and scholastic enrichment. The college offers credit-bearing courses designed to enrich the intellectual development of all university students. CPMC's courses consist of four general and interrelated categories: individuals and their communities, cross-cultural and interdisciplinary studies, dynamics of creative imagery, and college survival and success. Many of CPMC's course offerings are cross-listed with academic departments and carry general education and/or departmental credit.

The college is named after Cora P. Maloney, the first woman and African American elected to the Buffalo Common Council in 1957. She was a strong advocate of educational equality and excellence, as well as community awareness.

Advisement

Students can obtain academic advisement and/or guidance from the coordinators of the Daniel Acker Scholars Program (Acker Scholars) or Collegiate Science and Technology Entry Program (CSTEP). Program coordinators work to provide academic support services that help students succeed from enrollment to graduation and beyond.

Counseling, School and Educational Psychology*

Department of Counseling, School and Educational Psychology

Graduate School of Education

409 Baldy Hall
North Campus
Buffalo, NY 14260-1000
Phone: (716) 645-2484
Fax: (716) 645-6616
Web site: www.gse.buffalo.edu/DC/CEP/index.html

Scott T. Meier
Chair

**Not a baccalaureate degree program*

For a listing of Counseling, School and Educational Psychology faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

Dance

Department of Theatre & Dance

College of Arts and Sciences

285 Alumni Arena
North Campus
Buffalo, NY 14260-5030
Phone: (716) 645-6898
Fax: (716) 645-6992
Web site: www.cas.buffalo.edu/depts/theatredance

Robert Knopf
Chair

William E. Thomas
Director

M.A. Casarella
Assistant to the Chair; Coordinator, Undergraduate Studies

For a listing of Dance faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Department of Theatre and Dance offers BA and BFA degrees in dance. Prospective majors should audition and meet with undergraduate advisor as early as possible. All dance courses have reading and writing requirements, attendance requirements, dance concert attendance requirements, and practical examinations. An audition is required for acceptance into the program.

For transfer students, course requirements may be adjusted based on placement auditions. If lower-level courses are waived, additional courses may be assigned. This policy applies to all majors.

Degrees Offered

- **Undergraduate:** BA, BFA

Advisement

First-semester students are required to meet with the Director of Undergraduate Advising.

Prospective majors should also arrange for an interview with the Director of Undergraduate Advising to ensure they are taking courses in the proper sequence and to obtain the most benefit from departmental advisement.

DANCE—BA

Acceptance Criteria

Audition
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in the prerequisite courses.

Advising Notes

A minimum grade of C+ is necessary in all required courses.

Prerequisite Courses

TH 101 Introduction to Theatre
TH 106 Introduction to Technical Theatre with
TH 135 or TH 136 Production Practicum
TH 203 Visual Imagination
THD 201 Modern Dance 1
THD 210 Tap Dance 1
THD 213 Ballet 1
THD 263 Jazz Dance 1

Required Courses

TH 203 Visual Imagination
THD 202 Modern Dance 2
THD 211 Tap Dance 2
THD 214 Ballet 2
THD 264 Jazz Dance 2
THD 341 Ballet 3 and THD 342 Ballet 4, or THD 345 Modern Dance 3 and THD 346 Modern Dance 4, or THD 371 Jazz Dance 3 and THD 372 Jazz Dance 4
THD 400 Creative Movement
THD 410 Modern Dance 5 or THD 417 Jazz Dance 5 or THD 421 Ballet 5
THD 430 Dance History
THD 432 Applied Kinesiology and Anatomy for Dancers
THD 441 Choreography
THD 454 Teaching Methods
THD 475 Internship in Dance Teaching
THD 481 or THD 482 Research in Dance
Dance tutorials*
Two 200/300-level TH practicums
Two electives

Proficiency in a foreign language through the second semester of the second year or its equivalent is required, to be demonstrated through classroom courses or through Alternative Methods for Earning University Credit. S/U grading may not be selected for courses taken to fulfill this requirement.

Summary

Total required credit hours for the major 54-57

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

Transfer students' placement in technique courses is based upon audition.
Performance is an option each semester and is determined by audition. Please note that schedule does not include performance credits.

FIRST YEAR

Fall—THD 201, THD 210, THD 213, THD 263
Spring—THD 202, THD 211, THD 214, THD 264
Fall or Spring—TH 101; TH 106 with TH 135 or TH 136; TH 203

SECOND YEAR

Fall—THD 341, THD 345, THD 371
Spring—THD 342, THD 346, THD 372, THD 400

THIRD YEAR

Fall—THD 310; THD 410 or THD 417 or THD 421; THD 441

(Continued on next page)

Spring—THD 311, THD 454, THD 475, one 200/300-level TH practicum, one elective; level VI technique classes offered but not required

FOURTH YEAR

Fall—THD 430, dance tutorials*, one 200/300-level TH practicum
Spring—THD 432, dance tutorials*, one elective
Fall or Spring—THD 481 or THD 482*

**Technique classes must be repeated once for full credit and then may be taken as tutorials.*

DANCE—BFA

Acceptance Criteria

Audition
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in the prerequisite courses.

Advising Notes

A minimum grade of C+ is necessary in all required courses.

Prerequisite Courses

TH 101 Introduction to Theatre
TH 106 Introduction to Technical Theatre with TH 135 or TH 136 Practicum
THD 201 Modern Dance 1
THD 210 Tap Dance 1
THD 213 Ballet 1
THD 263 Jazz Dance 1

Required Courses

MUS 115 Understanding Music
TH 108 Basic Acting 1
TH 203 Visual Imagination
THD 202 Modern Dance 2
THD 211 Tap Dance 2
THD 214 Ballet 2
THD 264 Jazz Dance 2
THD 310 Tap 3
THD 311 Tap 4
THD 337 Dance Studio - Zodiaque or THD 338 Dance Studio - Zodiaque or THD 340 Dance Studio***
THD 341 Ballet 3
THD 342 Ballet 4
THD 345 Modern Dance 3
THD 346 Modern Dance 4
THD 371 Jazz Dance 3
THD 372 Jazz Dance 4
THD 378 Pas de Deux 1
THD 381 Social Dance Forms 1
THD 385 The Male Dancer or one semester of THD 300 Beginning Pointe
THD 400 Creative Movement
THD 410 Modern Dance 5
THD 415 Mind-Body Integration
THD 417 Jazz Dance 5
THD 421 Ballet 5
THD 430 Dance History
THD 441 Choreography 1
THD 481 or THD 482 Research in Dance
Four 200/300-level TH practicums

Summary

Total required credit hours for the major..... 91-97

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

Transfer students' placement in technique courses is based upon audition.
Performance is an option each semester and is based upon audition.

FIRST YEAR

Fall—TH 106 with TH 135 or TH 136; THD 201, THD 213, THD 263
Spring—THD 202, THD 214, THD 264
Fall or Spring—TH 101, TH 203

SECOND YEAR

Fall—TH 108, THD 210; THD 337 or THD 340 ***; THD 341, THD 345, THD 371, THD 430
Spring—THD 211, THD 338, THD 342, THD 346, THD 372, THD 400, performance***, one 200/300-level TH practicum

THIRD YEAR

Fall—THD 310; THD 337 or THD 340***; THD 385 or one semester of THD 300/THD 301/THD 302/THD 303; THD 410, THD 417, THD 421, THD 441
Spring—MUS 115, THD 311, THD 338***, dance tutorials*, one 200/300-level TH practicum; level VI technique classes offered, not required

FOURTH YEAR

Fall—THD 337 or THD 340***; THD 378, THD 415, one 200/300-level TH practicum, dance tutorials*, one or two electives**
Spring—THD 338 or THD 340***; one 200/300-level TH practicum, one or two electives**, dance tutorials*
Fall or Spring—THD 381, THD 481

**Technique classes must be repeated once for full credit and then may be taken as tutorials.*

***Three electives, which may be completed within or outside the department, are required. See department for selection.*

****A minimum of three semesters of performance is required; placement is based upon audition; performance is an option each semester.*

Economics

Department of Economics

College of Arts and Sciences

415 Fronczak Hall
North Campus
Buffalo, NY 14260-1520
Phone: (716) 645-2121, ext. 419
Fax: (716) 645-2127
Web site: www.economics.buffalo.edu

Isaac Ehrlich
Chair

Jose Plehn-Dujowich
Director of Undergraduate Studies

For a listing of Economics faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Our department offers a comprehensive curriculum, integrating economic theory with applied topics, including the public sector, econometrics (i.e. statistics), education, growth & development, international trade, finance, monetary economics, labor economics, urban & regional economics, industrial organization, and regulation. Among the matters discussed are consumers and producers, market equilibrium, investment and savings, employment, money & banking, and government taxation and spending.

Economics is the study of scarcity and its implications for the use of resources, production of goods and services, growth of production and welfare over time, and a great variety of other issues of vital concern to society. The central quest of economics is to determine the most effective use of resources to meet private and social goals. Economics can also be used in one's personal life. Personal resources are scarce too. Achieving the most satisfactory allocation of one's resources is a crucial life-skill.

The department's faculty is distinguished for its research and teaching accomplishments. All members of the faculty hold the PhD degree and are engaged in ongoing research projects that are reflected directly or indirectly in their teaching. The department is home to the Center of Excellence on Human Capital, Technology Transfer, and Economic Growth and Development (HEAD). The Center was chosen as one of the pillars of the Civic Engagement and Public Policy area of strength in the UB 2020 Strategic Plan. The Center is funded by a major faculty development award from the New York Office of Science, Technology and Academic Research (NYSTAR). The Center has had notable achievements, including an inaugurating conference attended by Nobel laureates. The Center houses the editorial office of the new Journal of Human Capital, which is published by the University of Chicago Press and is fast becoming nationally and internationally recognized as a leading economics journal.

Degrees Offered

- **Undergraduate:** BA, BA in Economics-Mathematics, Minor
- **Combined degrees:** BA/MA, BA/MS, BA/MBA
- **Graduate:** MA, MS, PhD

Degree Options

The economics major leads to the bachelor of arts degree. In addition to the standard major, there is a more mathematical major program for students who are considering graduate work in economics. Two joint majors, recommended for students considering graduate work in economics, are also available: economics-geography, and economics-mathematics. These joint majors are also useful for students who find it in their interest to broaden the scope of their undergraduate education. Other joint majors toward the B.A. are possible upon special application by the student. Details of the requirements for joint majors are available in the undergraduate brochure outside the department office, 415 Fronczak Hall.

A minor in economics is available as an alternative to a joint major for students receiving a BA in other disciplines. It is also appropriate for students in BS degree programs, such as engineering or management, who want formal recognition of preparation in economics.

Time-Shortened Combined Degree Programs. The department offers a four-and-one-half to five-year program leading to a combined BA/MA degree in economics and, at the student's option, an advanced certificate in an applied specialty (international economics, financial economics, urban and regional economics, economics of health services, economics of law and regulation, information and internet economics). The combined degree program trains students to apply economic tools in solving a wide variety of practical problems, and thus to be prepared to work in such settings as business/industry, banking, health care, and government. The program is conducted in cooperation with the School of Law, the School of Medicine and Biomedical Sciences, the School of Management, and the Departments of Geography, Mathematics, Computer Science and Engineering, and Communication. Students interested in this program should consult the directors of the undergraduate program, and of the MA program, as early as possible in their college career.

The Department's BA/MS program is intended for students who desire a more quantitative master's level training in economics. Students can choose one of three tracks: Financial Economics, International Economics and Applied Micro-Econometrics. All tracks emphasize the acquisition of applied econometric skills that can then be used to perform business research that employers increasing demand. The program is designed to speed the learning and graduation of students who, by the junior year, are reasonably confident that they wish to become economists who use both economic theory and economic data to provide quantitative analyses of economic issues.

The Department of Economics also offers a five-year program, in conjunction with the School of Management, leading to a combined BA (economics)/MBA. Students should consult the director of undergraduate studies and apply to the Department of Economics by the beginning of their sophomore year, and apply to the School of Management during their junior year. Students interested in this program should take ECO 181 and ECO 182, as well as a one-year Calculus sequence (MTH 121-MTH 122 or MTH 141-MTH 142) during the freshman year. MTH 131 may be substituted for MTH 121.

Joint Majors. As noted previously, the department offers formal joint majors with mathematics and geography, and also welcomes students who would like to construct personal joint programs, especially with other social sciences, such as philosophy, political science, or history. Students are advised to consult the economics undergraduate brochure outside the departmental office, 415 Fronczak Hall, and to consult both major departments as early as possible for details of their joint major requirements. The acceptance criteria for a joint major are the same as for a major.

Advisement

Students considering an economics major should consult the undergraduate advisor in 411 Fronczak and help themselves to the Undergraduate Brochure outside the department office.

Advanced Placement: The department accepts AP Microeconomics and AP Macroeconomics for credit with a grade of 4 or higher.

Acceptance Information

To apply for the Economics major or minor, students should submit a current DARS report to the department office, 415 Fronczak Hall, and write their name, person number, e-mail address and local address and phone number on it. Please also note whether the application is for a major or minor in Economics and, in the case of a double or joint major or double degree, specify the other major/degree.

Transfer Policy

Every economics major must take at least four upper level (300-level or higher) economics electives at the University at Buffalo. These cannot include ECO 495 Undergraduate Supervised Teaching or ECO 496 Internship in Economics. Transfer credit may be given towards the required courses (ECO 405 Microeconomic Theory, ECO 407 Macroeconomic Theory, and ECO 480 Econometrics 1) or for ECO 181 Introduction to Macroeconomics or ECO 182 Introduction to Microeconomics, or for other economics electives. Students who seek transfer credit should consult the director of undergraduate studies in economics and provide documentation, such as course descriptions and syllabi, for each course for which credit is sought. A form for this purpose is outside the department office, 415 Fronczak Hall.

ECONOMICS—BA

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.0 in two or more economics courses.
Completion of the prerequisite courses.
Completion of a minimum of 30 university credit hours.

Advising Notes
10 credit hours of required courses and 23 credit hours of electives are required. Electives are selected from other economics courses and must include twelve upper-level (300/400-level) credit hours. ECO 406 Topics in Microeconomics must be included in these by students who wish to be considered for Honors in the Economics major. A maximum of 3 credit hours may be from ECO 498 Undergraduate Research or from ECO 499 Independent Study. ECO 495 Undergraduate Supervised Teaching and ECO 496 Internship in Economics cannot be used to satisfy the upper-level economics course requirement, but a maximum of 3 credits from either ECO 495 or ECO 496 can be used toward the remaining 11 elective credits.

MTH 121-MTH 122 or MTH 141-MTH 142 or MTH 241 and MTH 306 are prerequisites for 300/400-level economics courses. MTH 131 can be substituted for MTH 121.

Students interested in a joint major program or combined degree program should consult the director of undergraduate studies in economics as early as possible in their academic career.

Prerequisite Courses
MTH 121 Survey of Calculus and Its Applications I or MTH 131 Math Analysis for Management or MTH 141 College Calculus I or MTH 241 College Calculus III.
Any two economics courses (ECO 181 and ECO 182 are highly recommended)

Required Courses
ECO 405 Microeconomic Theory
ECO 407 Macroeconomic Theory
ECO 480 Econometrics I (may substitute MTH 411-MTH 412 or GEO 410-GEO 411 or EAS 305)
11 credits of economics electives at any level
Four 300/400-level economics electives, excluding ECO 495 and ECO 496
One of the following: MTH 122 Survey of Calculus and Its Applications II, MTH 142 College Calculus II, MTH 306 Introduction to Differential Equations

Summary
Total required credit hours for the major.....41

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—ECO 181 or ECO 182*; one of the following: MTH 121, MTH 131, MTH 141, MTH 241
Spring—ECO 181 or ECO 182*; one of the following: MTH 122, MTH 142, MTH 306

SECOND YEAR
Fall—ECO 405 or ECO 407; one economics elective at any level
Spring—ECO 405 or ECO 407; ECO 480 (may substitute MTH 411-MTH 412 or GEO 410-GEO 411 or EAS 305)

THIRD YEAR
Fall—One 300/400-level economics elective
Spring—One 300/400-level economics elective

FOURTH YEAR
Fall—One 300/400-level economics elective
Spring—One 300/400-level economics elective

**ECO 181 Introduction to Macroeconomics and ECO 182 Introduction to Microeconomics are strongly recommended as economics electives. They are independent of each other and can be taken in either order.*

ECONOMICS—BA/MA

Acceptance Criteria
Students must apply for and be accepted into both the undergraduate economics major and the MA in economics program.

Advising Notes
135 credit hours are required for the combined BA/MA degree: 105 credits at the undergraduate level, including 18 credits in economics and all university requirements, and 30 credits in economics at the graduate level. An additional 15 graduate credit hours are required to also obtain an Advanced Certificate in a specialization within economics.

Students should consult the directors of the undergraduate and MA programs as early as possible in their decision-making process, in order to develop a sequence of coursework that is appropriate to their interests and objectives.

Prerequisite Courses
One of the following: MTH 121, MTH 131, MTH 141, MTH 241
Any two economics courses (ECO 181 and EC0 182 are highly recommended)

Required Courses
ECO 405 Microeconomic Theory*
ECO 407 Macroeconomic Theory*
ECO 480 Econometrics I* (may substitute MTH 411-MTH 412 or GEO 410-GEO 411 or EAS 305)
ECO 505 Microeconomic Theory
ECO 507 Macroeconomic Theory
ECO 576 Topics in Microeconomics
ECO 580 Econometrics I
ECO 581 Econometrics II
Minimum of 8 undergraduate credits of economics electives at any level, excluding ECO 495 and ECO 496
One of the following: MTH 122, MTH 142, MTH 306
Five MA electives

**ECO 505, ECO 507 and ECO 576 may be substituted for ECO 405, ECO 407, and ECO 406 respectively with permission of the Director of the MA program. A waiver exam may be taken for ECO 580 and ECO 581; please contact the Assistant Director of the MA program for details. However, a total of 18 undergraduate Economics credits and 30 MA level credits are still required for the degree, even with specific course waivers.*

Summary
Total required credit hours for the undergraduate portion.....26

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—ECO 181 or ECO 182*; one of the following: MTH 121, MTH 131, MTH 141, MTH 241

(Continued on next page)

Spring—ECO 181 or ECO 182*; one of the following: MTH 122, MTH 142, MTH 306

SECOND YEAR
Fall—One lower-level economics elective course
Spring—ECO 405, ECO 407

THIRD YEAR
Fall—ECO 480
Spring—ECO 507

FOURTH YEAR
Fall—ECO 505, ECO 580
Spring—ECO 576, ECO 581, one MA elective course

FIFTH YEAR
Fall—Four MA elective courses
Spring—Applied certificate courses

**ECO 181 and ECO 182 are recommended as economics electives. They are independent of each other and can be taken in either order.*

Refer to the Graduate School's policies and procedures manual for requirements for master's candidates .

ECONOMICS—BA/MS

Acceptance Criteria

Students must apply for and be accepted into both the undergraduate economics major and the MS program in Economics.

Advising Notes

150 credits are required for the combined BA/MS degree: 105 credits at the undergraduate level, including a minimum of 18 credits in economics and all university requirements, and 45 credits in economics at the graduate level.

Students should consult the directors of the undergraduate and MA programs as early as possible in their decision-making process, in order to develop a sequence of coursework that is appropriate to their interests and objectives.

Prerequisite Courses

One of the following: MTH 121, MTH 131, MTH 141, MTH 241
Any two economics courses (ECO 181 and EC0 182 are highly recommended)

Required Courses

ECO 405 Microeconomic Theory*
ECO 407 Macroeconomic Theory*
ECO 480 Econometrics I* (may substitute MTH 411-MTH 412 or GEO 410-GEO 411 or EAS 305)
ECO 505 Microeconomic Theory
ECO 507 Macroeconomic Theory
ECO 580 Econometrics I
ECO 581 Econometrics II
ECO 582 Computational Econometrics
ECO 526 Financial Economics I
ECO 561 Economics of Fluctuation and Forecasting
Minimum of 8 undergraduate credits of economics electives at any level, excluding ECO 495 and ECO 496
One of the following: MTH 122, MTH 142, MTH 306
Eight MA electives. Of these, each track (Financial Economics, International Economics, Applied Micro-Econometrics) entails 5 specific courses and 3 free electives

**ECO 505 and ECO 507 may be substituted for ECO 405 and ECO 407 respectively with permission of the Director of the MA program. A waiver exam may be taken for ECO 580 and ECO 581; please contact the Assistant Director of the MA program for details. However, a total of 18 undergraduate Economics credits and 45 MS level credits are still required for the degree, even with specific course waivers.*

Summary

Total required credit hours for the undergraduate portion.....26

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—ECO 181 or ECO 182*; one of the following: MTH 121, MTH 131, MTH 141, MTH 241
Spring—ECO 181 or ECO 182*; one of the following: MTH 122, MTH 142, MTH 306

SECOND YEAR
Fall—One lower-level economics elective course
Spring—ECO 405, ECO 407

THIRD YEAR
Fall—ECO 480
Spring—ECO 507

FOURTH YEAR
Fall—ECO 505, ECO 580
Spring—ECO 526, ECO 581, two MS elective course

FIFTH YEAR
Fall—ECO 561, ECO 582, two MS elective courses
Spring—4 MS elective courses

**ECO 181 and ECO 182 are recommended as economics electives. They are independent of each other and can be taken in either order.*

Refer to the Graduate School's policies and procedures manual for requirements for master's candidates.

ECONOMICS—BA/MBA

Acceptance Criteria
Students must apply for and be accepted into the undergraduate economics major by the beginning of their second year of study, and should apply to the School of Management during their third year of study. The School of Management requires the GMAT as part of the application.

Advising Notes
Requires 150 credit hours for a BA/MBA degree: 90 credits at the undergraduate level, including the 41 credits required for an economics major and all university requirements, and 60 credits in the School of Management at the graduate level. Students must meet all of the requirements of each faculty, except for the reduction in total credit hours.

Students should consult the director of undergraduate studies in economics as early as possible in their decision-making process, in order to develop a sequence of coursework that is appropriate to their interests and objectives.

Prerequisite Courses
One of the following: MTH 121, MTH 131, MTH 141, MTH 241
Any two economics courses (ECO 181 and ECO 182 are highly recommended)

Required Courses
ECO 405 Microeconomic Theory
ECO 406 Topics in Microeconomics
ECO 407 Macroeconomic Theory
ECO 480 Econometrics I (may substitute MTH 411-MTH 412 or GEO 410-GEO 411 or EAS 305)
MGA 604 Financial Analysis and Reporting
MGB 601 Behavioral and Organizational Concepts for Management
MGE 601 Economics for Managers
MGF 631 Financial Management
MGT 601 (½ semester)
MGG 635 (½ semester)
MGQ 606 Probability and Statistics for Management
MGM 625 Marketing Management
MGO 630 Operations and Service Management
MGA 609
MGF 641 Strategic Management
Nine MBA electives**
Internship
11 undergraduate credits of economics electives at any level
Three additional 300/400-level economics electives, excluding ECO 495 and ECO 496
One of the following: MTH 122, MTH 142, MTH 306

Summary
Total required credit hours for the undergraduate portion.....41

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—ECO 181 or ECO 182*; one of the following: MTH 121, MTH 131, MTH 141, MTH 241
Spring—ECO 181 or ECO 182*; one of the following: MTH 122, MTH 142, MTH 306

SECOND YEAR
Fall—ECO 405; one lower-level economics elective course
Spring—ECO 406, ECO 407

THIRD YEAR
Fall—ECO 480; One upper-level economics elective course
Spring—Two upper-level economics elective courses

FOURTH YEAR
Fall—MGA 604, MGB 601, MGE 601, MGQ 606, MGF 631 (½ semester), MGT 601 (½ semester)
Spring—MGM 625, MGS 630, MGA 609, MGO 641, MGF 631 (½ semester), MGG 635 (½ semester)

FIFTH YEAR
Fall—Four MBA electives**, internship
Spring—Five MBA electives**

**ECO 181 and ECO 182 are recommended as economics electives. They are independent of each other and can be taken in either order.*

***A maximum of two of these electives may be taken from graduate courses offered by another department, such as the Economics department.*

Contact the School of Management for elective options.

Refer to the School of Management's MBA handbook for requirements for MBA candidates.

ECONOMICS—MINOR

Acceptance Criteria
Same as for major.

Prerequisite Courses
MTH 121 Survey of Calculus and its Applications I or MTH 131 Math Analysis for Management or MTH 141 College Calculus I or MTH 241 College Calculus III
Any two economics courses (ECO 181 and ECO 182 are highly recommended)

Required Courses
ECO 405 Microeconomic Theory
ECO 407 Macroeconomic Theory
ECO 480 Econometrics I (may substitute MTH 411-MTH 412 or GEO 410-GEO 411 or EAS 305)
A minimum of 6 additional credit hours of 300/400-level economics courses, excluding ECO 495, ECO 496, ECO 498, and ECO 499.
One of the following: MTH 122, MTH 142, MTH 306.

Note: The calculus sequence is a prerequisite for 300/400-level economics courses. It is recommended that students also take ECO 181 and ECO 182 before taking the 400-level economics courses.

Summary
Total required credit hours for the minor 24

Education Minor*

Graduate School of Education

Teacher Education Institute

375 Baldy Hall
North Campus
Buffalo, NY 14260
Phone: (716) 645-2461
Fax: (716) 645-3631
Web site: www.gse.buffalo.edu/programs/tei/index.asp

S. G. Grant, Ph.D
Associate Dean for Teacher Education

David Cantaffa
Associate Director

Judi Roberson
Coordinator of Field Experiences

Retta Maclin
Advisor

Maeva Lopez, Ed.D.
Associate Director for School and Community Research and Development

** A nondegree program*

***Because New York State education requirements may change, program requirements may be altered according to state specifications. Therefore, students should check with the Teacher Education Institute for explanation of program and certification requirements.*

For a listing of Teacher Education course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The education minor provides an opportunity for undergraduate students interested in pursuing initial NYS preK-12 teacher certification to begin to develop pedagogical knowledge essential for effective teaching. This minor introduces students to the profession of education and provides them an opportunity to explore education as a career. Additionally, it allows them a head start on the coursework leading to initial teacher certification through the University at Buffalo's graduate initial teacher certification program. This minor cannot in itself lead directly to initial teacher certification.

The Graduate School of Education (GSE) offers the University at Buffalo's initial teacher certification program at the post-baccalaureate level and is dedicated to preparing qualified, committed, and caring teachers who can work effectively with students from various cultures with a wide variety of abilities and needs. The branch of GSE that administers and coordinates this program is the Teacher Education Institute (TEI). TEI works in conjunction with the Department of Learning and Instruction (LAI), as well as the Departments of Educational Leadership and Policy (ELP) and Counseling School and Educational Psychology (CSEP), to provide the coursework, field experiences, and student teaching required for New York State initial teacher certification. Beyond providing professional knowledge and instructional strategies essential to teaching, TEI collaborates with numerous school districts and teachers to prepare preservice teachers to be problem solvers and critical thinkers who strive to self-reflect and improve their teaching.

Degrees Offered

- **Undergraduate:** Minor

Degree Options

At the undergraduate level, the education minor introduces students to the profession of education and provides them an opportunity to explore education as a career. Additionally, it allows students a head start on the coursework leading to initial teacher certification through the University at Buffalo's graduate program.

At the graduate level, the Graduate School of Education offers Certificates of Advanced Study in Adolescence Education (Grades 7-12) in the following areas: English, Languages Other Than English (French, German, Italian, Latin, and Spanish), Mathematics, Science (Biology, Chemistry, Earth Science, and Physics), and Social Studies, as well as in Music (preK-12). Master of Education degrees are also offered in the above certification areas, as well as in Early Childhood Education (birth-grade 2) with or without the bilingual extension, Childhood Education (grades 1-6) with or without the bilingual extension, English to Speakers of other Languages (preK-12), and Literacy Specialist (birth-grade 6 and grades 5-12).

In addition to the above, many other graduate programs in education are offered by the Graduate School of Education.

Advisement

For students interested in pursuing initial teacher certification through the University at Buffalo graduate program, the following information will assist in the planning of undergraduate coursework.

Undergraduate Requirements for Those Applying to the University at Buffalo's Graduate Initial Teacher Certification Program

For students interested in pursuing initial teacher certification in adolescence education, English to speakers of other languages, or music education, note the following information regarding undergraduate degree and distribution requirements.

English

A baccalaureate degree in English, which includes at least 30 hours of coursework in English.

English to Speakers of other Languages

A baccalaureate degree in English, a language other than English, linguistics, or a speech-related field, which includes at least 30 hours of coursework in the major.

Languages Other Than English

A baccalaureate degree in an approved foreign language, which includes at least 30 hours of coursework in the foreign language.

Mathematics

A baccalaureate degree in mathematics, which includes at least 30 hours of coursework in mathematics.

In addition, the following mathematics distribution must be met:

- 2 courses in linear and/or abstract algebra
- 2 courses in calculus1 course in geometry

Music

A baccalaureate degree in music performance, which includes at least 30 hours of coursework in music.

In addition, the following music distribution must be met:

Academics/Performance:

- 4 courses in music theory
- 2 courses in music history

Acceptance Information

Registration in the education minor is open to students who formally apply to the minor and who receive confirmation of acceptance prior to registration. Applications to the minor must be filed with the Teacher Education Institute (TEI) office in 375 Baldy Hall. Applications must include UB DARS report and/or official transcript. Students must have a minimum GPA of 2.5 for admission.

EDUCATION—MINOR

Acceptance Criteria
For Undergraduate Minor in Education
Minimum GPA of 2.5.

Advising Notes
The first course in the minor, LAI 350, is an introductory course that provides a foundation for the other education coursework and provides early field experiences.

The other two required courses, CEP 400 and ELP 405, may be used to meet requirements for initial teacher certification as an Adolescence (grades 7-12) teacher. The final three courses in the minor are electives, which may also meet initial teacher certification course requirements (depending on the certificate area).

Students who successfully complete CEP 400, ELP 405, and LAI 414, and who later pursue the University at Buffalo program leading to initial teacher certification for Adolescence education may include these courses in their coursework toward initial teacher certification. This provides students a 9-credit head start toward their initial teacher certification.

Required Courses
LAI 350 Introduction to Education
CEP 400 Educational Psychology
ELP 405 Sociology of Education
Three elective courses

Summary
Total required credit hours for the minor 19

Recommended Sequence of Program Requirements

FIRST YEAR (SOPHOMORE OR JUNIOR)
Spring—LAI 350

SECOND YEAR (JUNIOR OR SENIOR)
Fall—CEP 400, ELP 405
Spring—LAI 414 or elective from the list below

THIRD YEAR (JUNIOR OR SENIOR)
Fall—Two electives from the list below

Electives and Course Groupings
CEP 401 Introduction to Counseling
CEP 404 Introduction to the Rehabilitation of Substance Abuse & Addiction
CEP 453 Introduction to Rehabilitation
LAI 205 Introduction to Child Development and Learning
LAI 414 Language, Cognition, and Writing
LAI 416 Early Childhood Education Theory and Practice
LAI 474 Teaching the Exceptional Learner
LAI 490 Seminar and Practicum in Early Childhood

Electrical Engineering

Department of Electrical Engineering

School of Engineering and Applied Sciences

332 Bonner Hall
North Campus
Buffalo, NY 14260-1920
Phone: (716) 645-3115
Fax: (716) 645-3656
Web site: www.ee.buffalo.edu/

Vladimir Mitin
Chair

James J. Whalen
Director of Undergraduate Studies

For a listing of Electrical Engineering faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The undergraduate degree offered by the department is the BS in electrical engineering. Electrical engineers work in research and development, product design, manufacturing, operations, service, technical sales and marketing, consulting, education, and environmental problem solving.

The undergraduate program provides the scope of knowledge and training for employment in the field and also forms the basis for further study at the graduate level. The curriculum emphasizes communications and signals, microelectronics and energy systems, and engineering materials and devices for electronics and photonics.

Communications and signals include wireless communications, communications systems, digital signal processing, and image and video processing. Microelectronics and energy systems include electronic instrumentation, integrated circuit systems, RF and microwave circuits, energy generation and conversion, and power conversion and control. Materials and devices for electronics and photonics include nanoelectronic device design and fabrication, electrical and optical characterization, optoelectronics and photonics. Students interested in computer hardware and software may take courses offered by the Department of Computer Science and Engineering, including computer networks, high-performance computing, and VLSI design.

Electrical Engineering Program Educational Objectives:
The recent graduate shall:

- Demonstrate expertise and career advancement in their field through the application of fundamental knowledge (mathematics and science) and skills (problem solving), and engineering tools;
- Communicate effectively by contributing to conference presentations, journal publications, industrial and internal documents, patent applications, reports, and/or scholarly journal papers;
- Contribute to the achievement of their organization's goals as an effective leader and/or effective team member; and
- Be engaged in their profession and life-long learning by using their knowledge and expertise to aid civic institutions, educational organizations, and professional societies.

The program is designed to serve both students who intend to enter industry directly and others who plan to continue their education through formal graduate study.

Degrees Offered

- **Undergraduate:** BS
- **Combined:** BS/MBA
- **Graduate:** MS, MEng, PhD

Degree Options

The Department of Electrical Engineering offers a BS degree in Electrical Engineering. Also offered is a combined degree program that leads to two degrees: BS in Electrical Engineering & MBA in Business Administration.

Advisement

During the first two years of all engineering programs, students are advised by one of the senior SEAS academic advisors in 410 Bonner Hall. The SEAS academic advisors should be consulted on general education requirements and on required courses in chemistry, engineering and applied science, math, and physics. Once admitted to the BSEE program students are assigned an advisor who is an EE faculty member. Students are encouraged to consult their EE advisor about the sequence of EE requirements and technical electives, especially for the senior year.

The first two years of the undergraduate curriculum emphasize the physical sciences and mathematics. The third year consists of coordinated sequences in digital principles, microprocessors, and microcomputers; physical electronics and electronic circuits; electromagnetic theory; and signal analysis and transform methods. Fourth-year courses are primarily elective and designed to broaden the background, reinforce lab skills, and develop design concepts. Through selection of technical electives, undergraduates have the flexibility to concentrate in communications, photonics, semiconductors, lasers, signal processing, computers, energy systems, and related studies. For additional information please see the Undergraduate Catalog entry for the School of Engineering and Applied Sciences.

Acceptance Information

For acceptance information please see the Undergraduate Catalog entry for the School of Engineering and Applied Sciences.

Transfer Policy

Transfer students must first apply to the university and meet the university transfer admission requirements before consideration for admission to the Department of Electrical Engineering. Electrical engineering courses completed at other colleges and offered as substitutes for UB courses are evaluated individually by the EE Undergraduate Curriculum Committee; determination is made by an evaluation of the student's transcripts, course content, contact hours, and grades earned. Most courses taken from an ABET-accredited college-level Electrical Engineering department are acceptable. Evaluations for transfer credits of general education, basic science, and engineering science courses completed at other universities and colleges are done through the Office of Undergraduate Education, School of Engineering and Applied Sciences, 410 Bonner Hall. For more information, see the Transfer Policy section in the Undergraduate Catalog entry for the School of Engineering and Applied Sciences.

ELECTRICAL ENGINEERING—BS

Acceptance Criteria

See the School of Engineering and Applied Sciences Accceptance Information at http://undergrad-catalog.buffalo.edu/academicprograms/eas_degrees.shtml.

Required Courses

CHE 107 General Chemistry for Engineers
CSE 379 Introduction to Microprocessors and Microcomputers
CSE 380 Introduction to Microprocessors Lab
EAS 140 Engineering Solutions
EAS 207 Statics
EAS 230 Higher-Level Language
EE 101 Basic Electronics or one technical elective
EE 202 Circuit Analysis I
EE 203 Circuit Analysis II
EE 310 Electronic Devices and Circuits I
EE 311 Electronic Devices and Circuits II
EE 352 Introduction to Electronics Lab
EE 353 Electronic Circuits Lab
EE 378 Digital Principles
EE 408 Senior Seminar
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 General Physics II Lab
PHY 207 General Physics III
PHY 257 General Physics III Lab
Three electrical engineering requirements*
Two technical electives with design
Two restricted upper-division technical electives
Two unrestricted upper-division technical electives
One free elective

Summary

Total required credit hours for the major.....109

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall—CHE 107, EAS 140, MTH 141
Spring—EE 101 or one technical elective; MTH 142, PHY 107

SECOND YEAR

Fall—EAS 207, EE 202, MTH 306, PHY 108/PHY 158
Spring—EAS 230, EE 203, MTH 241; PHY 207/PHY 257

THIRD YEAR

Fall—EE 310, EE 352, EE 378, one electrical engineering requirement*
Spring—CSE 379, CSE 380, EE 311, EE 353, one electrical engineering requirement*

FOURTH YEAR

Fall—EE 408, one technical elective with design, one technical elective, one electrical engineering requirement*
Spring—One technical elective with design, three technical electives, one free elective

Electives and Course Groupings

***ELECTRICAL ENGINEERING REQUIREMENTS**

The following three required courses may be taken in any order depending upon choice of senior electives: EAS 305 Applied Probability, EE 303 Signal Analysis and Transform Methods, EE 324 Applied Electromagnetics.

TECHNICAL ELECTIVES (MINIMUM 21 CREDITS)

A total of seven technical electives is required. At least six must be upper-division technical electives. Only one may be a lower division technical elective such as EE 101.

At least two of the upper-division technical electives must be courses with significant design content from an approved list. The current approved list includes CSE 442 Software Engineering, CSE 453 Hardware/Software Integrated Systems Design, CSE 493 Introduction to VLSI Electronics, EE 401 RF & Microwave Circuits I, EE 410 Electronic Instrument Design, EE 413 Communications Electronics, EE 416 Signal Processing Algorithms, EE 425 Electrical Devices I, EE 449 Analog Integrated Circuit Layout, EE 453 Microelectronic Fabrication Lab, EE 455 Photonic Devices, EE 456 RF & Microwave Circuits II, EE 482 Power Systems Engineering I, EE 483 Communications Systems I, EE 491 Analog Circuits and EE 494 Senior Capstone Group Design Project.

In addition to the two technical electives with significant design content, at least two other upper-division technical electives must be chosen from: CSE courses or EE courses or MAE 340 Systems Analysis or MAE 443 Continuous Control Systems or MAE 444 Digital Control Systems.

Two of the upper division technical electives are unrestricted.

ELECTRICAL ENGINEERING/BUSINESS ADMINISTRATION—BS/MBA

Acceptance Criteria

Good standing as an electrical engineering undergraduate student and acceptance as a graduate student by the School of Management.

Advising Notes

The internship may be taken the previous summer to lighten the load in the fifth year.

Required Courses

CHE 107 General Chemistry for Engineers
CSE 379 Introduction to Microprocessors and Microcomputers
CSE 380 Introduction to Microprocessors Lab
EAS 140 Engineering Solutions
EAS 207 Statics
EAS 230 Higher Level Languages
EE 101 Basic Electronics or one technical elective
EE 202 Circuit Analysis I
EE 203 Circuit Analysis II
EE 310 Electronic Devices and Circuits I
EE 311 Electronic Devices and Circuits II
EE 352 Introduction to Electronics Laboratory
EE 353 Electronic Circuits Laboratory
EE 378 Digital Principles
EE 408 Senior Seminar
MGA 604 Introduction to Financial Accounting
MGA 609 Management Accounting
MGB 601 Behavioral and Organizational Concepts for Management
MGE 601 Economics for Managers
MGF 631 Financial Management
MGG 635 Business Communication
MGM 625 Marketing Management
MGO 630 Operations and Service Management
MGO 641 Strategic Management
MGT 601 Ethics & Corporate Finance
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 General Physics II Lab
PHY 207 General Physics III
PHY 257 General Physics III Lab
Three electrical engineering requirements*
One electrical engineering technical elective with design content
Two other electrical engineering technical electives
Six MBA Electives
MBA Practicum

Summary

Total required credits for the undergraduate portion 97
Total required credits for the BS/MBA 145

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the School of Management's MBA handbook for requirements for MBA candidates.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall—CHE 107, EAS 140, MTH 141
Spring—EE 101 or technical elective; MTH 142, PHY 107

SECOND YEAR

Fall—EAS 207, EE 202, MTH 306, PHY 108, PHY 158
Spring—EAS 230, EE 203, MTH 241, PHY 207/PHY 257

THIRD YEAR

Fall—EE 310, EE 352, EE 378, one electrical engineering requirement*
Spring—CSE 379, CSE 380, EE 311, EE 353, one electrical engineering requirement*

FOURTH YEAR

Fall—EE 408, MGA 604, MGB 601, MGT 601, MGF 631, one electrical engineering requirement*, one electrical engineering technical elective with design
Spring—MGA 609, MGF 631, MGG 635, MGM 625, MGO 630, MGO 641, one EE/CSE technical elective

FIFTH YEAR

Fall—MGE 601, Two MBA electives, MBA Practicum, one EE/CSE technical elective
Spring—four MBA electives

Contact the School of Management for flex core course and elective options.

Electives and Course Groupings

*ELECTRICAL ENGINEERING REQUIREMENTS

The following three required courses may be taken in any order depending upon choice of senior electives: EAS 305 Applied Probability, EE 303 Signal Analysis and Transform Methods, EE 324 Applied Electromagnetics.

ELECTRICAL ENGINEERING TECHNICAL ELECTIVES (MINIMUM 12 CREDITS)

A total of four technical electives is required. At least three must be upper-division technical electives. No more than one may be a lower-division technical elective such as EE 101.

At least one of the upper division technical electives must be a course with significant design content from an approved list. The current approved list includes CSE 442 Software Engineering, CSE 453 Hardware/Software Integrated Systems Design, CSE 493 Introduction to VLSI Electronics, EE 401 RF & Microwave Circuits I, EE 410 Electronic Instrument Design, EE 413 Communications Electronics, EE 416 Signal Processing Algorithms, EE 425 Electrical Devices I, EE 449 Analog Integrated Circuit Layout, EE 453 Microelectronic Fabrication Lab, EE 455 Photonic Devices, EE 456 RF & Microwave Circuits II, EE 482 Power Systems Engineering I, EE 483 Communications Systems I, EE 491 Analog Circuits and EE 494 Senior Capstone Group Design Project.

In addition to the one technical elective with significant design content, at least two other upper-division technical electives must be chosen from: CSE courses or EE courses or MAE 340 Systems Analysis or MAE 443 Continuous Control Systems or MAE 444 Digital Control Systems.

Upon completion of undergraduate program requirements and all management requirements, the combined degree will be conferred at the end of fifth year.

Engineering and Applied Sciences, School of

School of Engineering and Applied Sciences

410 Bonner Hall
North Campus
Buffalo, NY 14260-1900
Phone: (716) 645-2774
Fax: (716) 645-2495
Web site: www.eng.buffalo.edu/

Harvey G. Stenger, Jr.
Dean

John E. Van Benschoten
Associate Dean

Kerry Collins-Gross
Assistant Dean

Drexel E. Gidney
Senior Academic Advisor and Director of Minority Programs

Margaret J. Meachem
Senior Academic Advisor

Teresa Miklitsch
Senior Academic Advisor

Jane Sinclair
Senior Academic Advisor

For a listing of Engineering and Applied Sciences faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergradcatalog.buffalo.edu/academicprograms.

About the Program

The School of Engineering and Applied Sciences offers eight programs leading to the degree of bachelor of science (BS) in engineering: aerospace, chemical, civil, computer, electrical, environmental, industrial, and mechanical engineering. These programs are accredited by the Engineering Accreditation Commission (EAC) of ABET, Inc.

BA and BS degrees in computer science are offered through the Department of Computer Science and Engineering, and a BS degree in engineering physics is offered jointly with the Department of Physics.

As part of the accreditation process, each engineering program defines their educational objectives (see engineering program descriptions) and program outcomes. To meet accreditation requirements, engineering programs must demonstrate that graduates can:

a) apply knowledge of mathematics, science, and engineering,
b) design and conduct experiments, as well as to analyze and interpret data,
c) design a system, component, or process to meet desired needs within realistic constraints,
d) function on multi-disciplinary teams,
e) identify, formulate, and solve engineering problems,
f) understand professional and ethical responsibility,
g) communicate effectively.

In addition, graduates must have:

h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context,
i) a recognition of the need for, and an ability to engage in lifelong learning,
j) a knowledge of contemporary issues,
k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

The undergraduate engineering program provides a solid background in engineering fundamentals and gives students an opportunity for hands-on experience throughout the engineering curriculum. The program provides students with a strong technical foundation, enables them to integrate their engineering education within the broader social, economic and technological environment, and fosters a desire for continued learning. The curriculum allows students flexibility in their programs of study and encourages interaction between students and faculty. The undergraduate educational experience prepares students for professional practice and advanced study. Special programs including our Career Development Curriculum program, Engineering Career Institute, and Co-op opportunities provide professional development skills and experiences and facilitate placement of our graduates in high-quality engineering positions.

UB Engineering Mission Statement

The mission of the School of Engineering and Applied Sciences is to provide effective and high-quality engineering education at the undergraduate, graduate, and continuing education levels. Integral to this mission is an infrastructure of expertise and facilities that can support professional engineering education, advanced degree programs and research in important areas of applied science and technology. We will be a leader in forging and maintaining significant, mutually committed partnerships between our faculty and staff and students, alumni, industry, government, and other national and international educational institutions.

Our specific mission objectives are to:

1. Educate students to think critically and creatively, to identify and solve important technological problems, and to practice engineering with technical skill, a high regard for ethical principles and an understanding of economic and environmental realities.
2. Perform high-quality research that advances applied science or technology while preparing future researchers for industrial, academic, and government positions.
3. Contribute to interdisciplinary educational and to meet complex technological and societal needs.
4. Provide and coordinate educational, technical, and information services to industry, government, practicing engineers, educators, and the public.
5. Become a leading catalyst for attracting and increasing the private sector to Western New York and New York State.
6. Reach out internationally for cooperation in education and research.

Degrees Offered

- **Undergraduate:** BS in Aerospace, Chemical, Civil, Computer, Electrical, Environmental, Industrial, and Mechanical Engineering; Engineering Physics; Computer Science (BS and BA) See sections of the catalog for each of these programs for detailed information on program requirements and course offerings.

Degree Options

In addition to the degrees listed above, some students pursue a double major by satisfying additional course requirements. The most popular double majors are mechanical/aerospace and electrical/computer engineering. Note that double majors receive only one BS degree; satisfaction of the requirements for a double major is indicated on the student's transcript and diploma.

Another degree option is to satisfy the requirements of an approved minor. The approved minor most frequently selected by engineering majors is mathematics.

Within the School of Engineering and Applied Sciences, it also is possible to pursue a combined BS/MBA program. This option is explained in the sections of the catalog for School of Engineering and Applied Sciences degree programs.

Advisement

Students obtain academic advice and guidance from the senior academic advisors in the Engineering Office of Undergraduate Education (410 Bonner Hall) and from the faculty advisors in their program of study. The Office of Undergraduate Education advises all students throughout their first two years of study. In the junior and senior years, students seek advisement primarily from departmental faculty advisors.

Acceptance Information

Candidates from secondary schools (high schools) must have completed mathematics through trigonometry, and should have completed higher-level courses such as pre-calculus, calculus, chemistry, and physics.

Students should apply for admission to the School of Engineering and Applied Sciences when they apply to UB as freshmen or transfers by indicating the curriculum code for their desired engineering major on the application form (0229 if undecided about the particular engineering major). The Office of Admissions coordinates the review with the School of Engineering. High school grades, class standing, Regents exam scores, and either Scholastic Aptitude Test (SAT) or American College Testing (ACT) scores are considered in the admission process.

Incoming freshmen are admitted to their designated major or to the School of Engineering and Applied Sciences if an engineering major has not been selected. Engineering majors can be changed easily during the freshman year.

Current UB students not enrolled in the School of Engineering and Applied Sciences are eligible for admission to engineering if they meet the following criteria:

1. Good academic standing
2. Completion of at least three of the following courses: MTH 141, MTH 142, MTH 241, MTH 242, MTH 306, CHE 101, CHE 102, CHE 107, CHE 108, PHY 107, PHY 108
3. Minimum GPA of 2.5 for all math, science, and engineering courses required in the major

Such students may apply in the Office of Undergraduate Education, School of Engineering and Applied Sciences, 410 Bonner Hall, (716) 645-2774.

Course requirements for all engineering programs are similar in the first three semesters. Specific requirements for each degree program are listed in that program's undergraduate catalog entry: aerospace, chemical, civil, computer, electrical, engineering physics, environmental, industrial, and mechanical. Course requirements for computer science are listed in that program's undergraduate catalog entry.

General Education

Entering engineering freshman and transfer students must meet the general education requirements of the University at Buffalo (See the General Education section in this catalog) and the School of Engineering and Applied Sciences. Information regarding these requirements is available in the Engineering Office of Undergraduate Education, 410 Bonner Hall.

Academic Requirements

Students in the School of Engineering and Applied Sciences must maintain a minimum GPA of 2.0 overall, as well as in technical and engineering classes. Failure to maintain the required GPA in any of these categories may result in academic probation or dismissal from the School. Programs within the School of Engineering may have additional requirements to remain enrolled. These are detailed in the degree program sections of the catalog.

To graduate with an engineering degree, students must have a minimum engineering GPA of 2.0. Please refer to the degree program sections of the catalog for additional requirements.

Students must complete successfully all prerequisite requirements to enroll in courses requiring prerequisites. Prerequisite requirements are listed in the course descriptions in the catalog. The School of Engineering may drop students from courses if the stated prerequisites have not been satisfied.

Transfer Policy

Admission of transfer students is granted on the basis of previous college academic performance. Student transcripts are evaluated by the Office of Undergraduate Education, 410 Bonner Hall. Course content, contact hours, and grades are evaluated to determine acceptance. Courses completed at other universities and colleges are not automatically accepted for credit. Admission to engineering as an approved major requires the following:

1. Good academic standing
2. Completion of at least three of the following courses: MTH 141, MTH 142, MTH 241, MTH 242, MTH 306, CHE 101, CHE 102, CHE 107, CHE 108, PHY 107, PHY 108
3. Minimum GPA of 2.5 for all math, science, and engineering courses required in the major

Notices of acceptance are sent by the university Office of Admissions and the Office of Undergraduate Education in engineering. Normally, transfer students who have completed an engineering science program at a community college or the first three years of a 3+2 program at a four-year college can expect to enter the third year of an engineering program at the University at Buffalo. Graduates of technology programs receive limited transfer credit and can expect three to four additional years of study at the university to complete the engineering degree requirements.

Engineering Physics

Department of Electrical Engineering

School of Engineering and Applied Sciences

332 Bonner Hall
North Campus
Buffalo, NY 14260-1920
Phone: (716) 645-2422/2132
Fax: (716) 645-3656
Web site: www.eng.buffalo.edu/departments/engphysics/index.html

Jonathan Bird
Co-chair of Program
jbird@buffalo.edu

Department of Physics

College of Arts and Sciences

239 Fronczak Hall
North Campus
Buffalo, NY 14260-1500
Phone: (716) 645-2017
Fax: (716) 645-2507
Web site: www.physics.buffalo.edu

Professor Hong Luo
Co-chair of Program
luo@buffalo.edu

Note: Course descriptions may be found in the Electrical Engineering section at http://undergrad-catalog.buffalo.edu/academicprograms/ee.shtml and in the Physics section at http://undergrad-catalog.buffalo.edu/academicprograms/phy.shtml.

About the Program

This program leads to a bachelor of science degree in engineering physics and is intended for those students whose interests center on the more fundamental aspects of electrical engineering and physics, but who also wish extensive contact with the applied aspects (instrumentation, circuit design) of those subjects. The program is designed such that a student can pursue a graduate program in electrical engineering or applied physics, depending on interest.

This course of study provides students with a unique combination of the fundamental principles of modern electronics, as well as a thorough education in electrical measurements and instrumentation. This program should be considered only by students whose academic performance is very strong. Only courses in which a grade of C or better has been earned are considered for application to this program.

Degrees Offered

- **Undergraduate:** BS

Advisement

Advanced Placement: Students obtain academic advice and guidance from the senior academic advisors in the Engineering Office of Undergraduate Education (410 Bonner Hall) and from the faculty co-chair of the program.

Students who receive a 4 or 5 on the Physics C Mechanics exam can get credit for PHY 107 General Physics I. A grade of 4 or 5 on the Physics C Electricity & Magnetism exam provides credit for PHY 108/PHY 158 General Physics 2/Lab.

ENGINEERING PHYSICS—BS

Acceptance Criteria

See the School of Engineering and Applied Sciences for acceptance information.

Prerequisite Courses

CHE 107 General Chemistry for Engineers
CHE 108 General Chemistry for Engineers
EAS 140 Engineering Solutions
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I or PHY 117 Honors Physics I

Required Courses

EAS 230 Higher-Level Language
EE 202 Circuit Analysis I
EE 310 Electronic Devices and Circuits I
EE 311 Electronic Devices and Circuits II
EE 352 Introduction to Electronics Lab
EE 353 Electronic Circuits Lab
EE 410 Electronic Instrument Design I
MAE 335 Fluid Mechanics
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
MTH 417 Survey of Multivariable Calculus
MTH 418 Survey of Partial Differential Equations
PHY 108 General Physics II or PHY 118 Honors Physics II
PHY 158 General Physics II Lab
PHY 207 General Physics III or PHY 217 Honors Physics III
PHY 208 General Physics IV
PHY 257 General Physics III Lab
PHY 301 Intermediate Mechanics I
PHY 307 Modern Physics Lab
PHY 401 Modern Physics I
PHY 402 Modern Physics II
PHY 403 Electricity and Magnetism I
PHY 404 Electricity and Magnetism II
PHY 405 Thermal and Statistical Physics I
PHY 407 Advanced Laboratory or PHY 408 Advanced Laboratory
Three technical electives

Summary

Total required credit hours for the major.....111

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 107, EAS 140, MTH 141
Spring—CHE 108, MTH 142; PHY 107 or PHY 117

SECOND YEAR
Fall—EE 202, MTH 241; PHY 108 or PHY 118; PHY 158
Spring—EAS 230, MTH 306; PHY 207 or PHY 217; PHY 208, PHY 257, one technical elective

THIRD YEAR
Fall—EE 310, EE 352, PHY 301, PHY 307, PHY 401
Spring—EE 311, EE 353, MTH 418, PHY 402

FOURTH YEAR
Fall—EE 410, MTH 417, PHY 403, PHY 405
Spring—MAE 335, PHY 404, two technical electives
Fall—PHY 407 or Spring PHY 408

Electives and Course Groupings

TECHNICAL ELECTIVES
Technical electives can be chosen from the approved list of required courses or approved technical electives for either the BS in physics or the BS in electrical engineering program. At least one technical elective must be chosen from the electrical engineering list. Recommended technical electives appropriate to this program are:

EE 489 and EE 490
PHY 310 Intermediate Optics
PHY 406 Thermal and Statistical Physics II
PHY 407-PHY 408 Advanced Laboratory

English

Department of English

College of Arts and Sciences

306 Clemens Hall
North Campus
Buffalo, NY 14260-4610
Phone: (716) 645-2575
Fax: (716) 645-5980
Web site: www.english.buffalo.edu

Cristanne Miller
Chair

Susan Eilenberg
Director of Undergraduate Studies

For a listing of English faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

English students explore the expressive power of language primarily through a comprehensive study of the English and American literary tradition; this focus often broadens to include other verbal arts, such as drama, folklore, film and video, and foreign works in English translation. Some students also develop their creativity through select courses that emphasize the writing of poetry, prose fiction, autobiography, and plays. Our diverse faculty aim to help students become critical readers and writers. Critical readers employ analytical skills of close reading, historical contextualization, and theoretical reflection. Critical writers synthesize the results of their analyses into coherent and original critical essays.

Degrees Offered

- **Undergraduate:** BA, Minor
- **Graduate:** MA, PhD

Degree Options

The English Department offers a major leading to a BA. Students may choose instead an English minor, a reduced version of the full major that is taken alongside a major in another department; or they may choose a joint major, a somewhat different reduction of the major that is taken alongside a joint major in another department. Other students may choose to do a double major, combining a full major in English with a full major in another department. English majors accepted into the English departmental Honors Program will graduate with a designation of English Honors on their transcripts.

Joint Major

The joint major, a reduced version of the full major, requires a total of nine courses (27 credit hours):

- two 200-level courses (6 credits) of English in the ENG 202-299 range, with a minimum GPA of 2.5 in these courses. At least one must be a literature course, and we recommend that at least one be a survey of literary history such as World Literature (ENG 221-222), British Writers (ENG 231-232), or American Writers (ENG 241-242)
- one course (3 credits) in Criticism (ENG 301)
- three courses (9 credits) in Earlier Literature, chosen from among specified upper-level courses that focus on literature written before 1830, including courses on two of the three early authors Chaucer (ENG 303), Shakespeare (ENG 309 or 310), and Milton (ENG 315)
- one course (3 credits) in Later Literature, chosen from among specified upper-level English courses that focus on literature written after 1830
- two additional (elective) courses (6 credits) chosen from the 300-400 range of English Courses

The department requires both joint and full majors to fulfill a departmental language requirement for graduation.

The English department welcomes joint majors with any department that offers that option.

Advisement

New English majors, whether transfers or continuing students, should meet as soon as possible with the director of undergraduate studies to discuss the major and their course schedules. In addition, the department strongly urges all majors and prospective majors to seek out the director's advice whenever they have questions or problems.

Since all English courses require skills in writing, students should normally complete the university writing skills requirement (ENG 101 and ENG 201) before registering for courses numbered 202 and above. We strongly recommend that students with below a B average in English take no more than 18 credit hours per semester.

Instructors observe the general course descriptions, choosing authors, texts, topics, and approaches to suit their particular interests. More information about particular courses, including detailed descriptions of courses for the coming semester, can be found in the Whole English Catalog. Copies are available in the English Undergraduate Office, 303 Clemens Hall.

Academic Requirements

Language Requirement. English majors must fulfill the departmental language requirement by attaining an intermediate level of proficiency in any foreign language, either by passing an examination set by the appropriate language department, or by taking a two-semester intermediate language course. The requirement consists of four semesters, if one starts from the beginning. Double majors may petition to waive the final semester of foreign language study.

Transfer Policy

The English department will count up to two literature courses taken at another accredited college or university towards satisfaction of the department's requirement for two lower-level literature courses. The department generally accepts up to four junior- or senior-level courses taken elsewhere for upper-level credit. Students with questions regarding the evaluation of transfer credits should see the director of undergraduate studies in 303 Clemens Hall.

Advanced Placement Work: AP courses do not count towards fulfillment of English major or minor requirements. A score of either 4 or 5 on a single AP English exam will, however, enable a student to place into the more advanced of the university's Writing Skills courses (ENG 102), while scores of either 4 and 5 or 5 and 5 on two AP exams will exempt the student from the Writing Skills requirement entirely.

ENGLISH—BA

Acceptance Criteria

Minimum GPA of 2.0.
Completion of the university writing skills requirement.
A minimum GPA of 2.5 in prerequisite courses.

Advising Notes

Bring current UB DARS report directly to the English department.

Prerequisite Courses

Completion of the university writing skills requirement (ENG 101 Writing 1 and ENG 201 Advanced Writing or ENG 102 Writing 2).
Two 200-level courses (6 credits) of English in the ENG 202 - ENG 299 range, with a minimum GPA of 2.5 in these courses. At least one must be a literature course, and we recommend that at least one be a survey of literary history such as World Literature (ENG 221 - ENG 222), British Writers (ENG 231-ENG 232), or American Writers (ENG 241-ENG 242)

Required Courses

Eleven 300/400-level courses, including:
ENG 301, Criticism
four courses (12 credits) in Earlier Literature, chosen from among specified upper-level courses that focus on literature written before 1830, including courses on at least two of the three early authors Chaucer (ENG 303), Shakespeare (ENG 309 or ENG 310), and Milton (ENG 315)
two courses (6 credits) in Later Literature, chosen from among specified upper-level English courses that focus on literature written after 1830
four additional (elective) courses (12 credits) in the ENG 300-ENG 400 range
Foreign language courses (0-16 credit hours)*

**Proficiency in a foreign language through the second semester of the second year or its equivalent is required, to be demonstrated through classroom courses or through alternatives outlined on page 12. S/U grading may not be selected for courses taken to fulfill this requirement.*

(Continued on next page)

Summary
Total required credit hours for the major..... 39-55

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—ENG 101 or ENG 102; elementary foreign language
Spring—ENG 201 (if not waived), elementary foreign language

SECOND YEAR
Fall—One 200-level English course, intermediate foreign language
Spring—One 200-level English course, one 300-level English course, intermediate foreign language

THIRD YEAR
Fall—ENG 301, two 300/400-level English courses
Spring—Two 300/400-level English courses

FOURTH YEAR
Fall—Three 300/400-level English courses
Spring—Three 300/400-level English courses

ENGLISH—MINOR

Acceptance Criteria
Minimum GPA of 2.0 overall.
Completion of the university writing skills requirement.

Required Courses
Two courses of English (6 credits) in the ENG 202-ENG 299 range
ENG 301, Criticism
One course (3 credits) in Earlier Literature, chosen from among specified upper-level English courses that focus on literature written before 1830
One course (3 credits) in Later Literature, chosen from among specified upper-level English courses that focus on literature written after 1830
One elective (3 credits) in the ENG 300-ENG 400 range

Advising Notes
Bring current UB DARS report to the English department.

English as a Second Language*

English Language Institute

Graduate School of Education

320 Baldy Hall
North Campus
Buffalo, NY 14260-1000
Phone: (716) 645-2077
Fax: (716) 645-6198
Web site: wings.buffalo.edu/eli/eli_esl.htm
E-mail: elibuffalo@buffalo.edu

Keith E. Otto
ESL Program Director

**Not a baccalaureate degree program*

For a listing of English as a Second Language faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The English as a Second Language program at the English Language Institute (ELI) assists international and domestic students whose first language is not English to develop the language skills necessary to succeed at a U.S. university. Undergraduate students enroll in credit-bearing English as a Second Language (ESL) courses to improve their English reading, writing, speaking, and listening skills for academic purposes and to satisfy the university's writing requirement.

Students whose first or dominant language is other than English may satisfy the university's writing requirement by successfully completing two ESL courses: ESL 407 Written English I and ESL 408 Written English II. Students are strongly advised to complete these courses during their first and second semesters of academic study.

Advisement

The program director of the English as a Second Language program is available to advise students and place them into ESL courses prior to and at the beginning of each semester.

Acceptance Information

All international students who are applying to undergraduate programs at the University at Buffalo and whose first or dominant language is not English should contact International Admissions to find details about required TOEFL scores for standard and conditional admission, or to apply to the university.

International undergraduate students who do not meet the university's English requirements for admission are welcome to apply instead for the Intensive English Program, which is a noncredit, fulltime program offered by the English Language Institute (see http://www.buffalo.edu/eli and click on "Intensive English Program" for information).

Transfer Policy

Students taking ESL courses to meet conditional admission requirements may not substitute transfer courses. For students admitted without any conditions, ESL 407 may be waived based on the transfer of an equivalent course from another accredited U.S. institution, if the student has a computer-based TOEFL score of 213 or higher (or an equivalent iBT or paper-based score, as detailed above). Courses typically considered equivalent are those which satisfy the regular composition requirements at that institution rather than courses that are prerequisites for composition courses.

ESL 407 may also be waived based on a TOEFL score. Both the total score and the individual section scores will be analyzed, including the essay score. A minimum computer-based TOEFL score total of 250 or 600 on the paper version is required for consideration of a waiver. Waivers based on iBT scores also may be possible.

Environmental Design

Department of Urban and Regional Planning

School of Architecture and Planning

116 Hayes Hall
South Campus
Buffalo, NY 14214-3087
Phone: (716) 829-2133
Fax: (716) 829-3256
Web site: www.ap.buffalo.edu/planning

Niraj Verma
Chair

R. J. Multari
Director of Advisement

Donna Rogalski
Assistant to the Chair

Susan McDonald
Admissions Secretary

For a listing of Environmental Design faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

We live in times in which our urban and built environments are undergoing unprecedented change. The bachelor of arts and minor in environmental design provide students with the skills to understand, analyze, and solve problems associated with such change, with a view toward community vitality, social fairness, and the design of sustainable environments. Environmental design applies knowledge of social and behavioral science to plan and design community environments that affect, and are affected by, human behavior. While concerned about humanity's use, misuse, and abuse of the natural environment, environmental design is also concerned with the planned environment which humans build—the "artificial" or designed physical environment—and its ability to meet community needs. More subtly, environmental design includes issues from our cultural, economic, physical, political, and social environments. The purpose of environmental design is to gain a better understanding of these community environments, and then apply that knowledge to plan and design improved surroundings. Environmental design addresses the arrangement, appearance, and functionality of towns and cities including the spaces used freely on a day-to-day basis by the general public. This encompasses streets and parks, together with public infrastructure, and privately owned places. In addition, environmental design is concerned with the way these places are experienced and used, as well as other aesthetic elements that contribute to the quality of community environments. Environmental design practitioners develop long- and short-term plans and designs to use land for the growth and revitalization of urban, suburban, and rural communities, while helping local officials make decisions concerning social, cultural, economic, physical, and environmental issues.

Environmental design practitioners promote the best use of a community's land and resources for residential, commercial, institutional, and recreational purposes.

The bachelor of arts and minor in environmental design offers a preprofessional course of study grounded in the multidisciplinary traditions of the liberal arts and distinguished by active intervention and experience in community and regional environments through classroom activity, fieldwork, workshops, and internships.

The Department of Urban and Regional Planning offers a breadth of knowledge through its degree programs on understanding urban and built environments, and teaches skills in information analysis, computing, written communications, and graphic techniques. In addition, the department offers specialized courses in land use, community design, property development, local government policy, economic development, environmental affairs, real estate development, historic preservation, legal issues, and geographic information systems. The preprofessional environmental design program utilizes the dynamic bi-national Buffalo-Niagara region as a laboratory for planning, design, and action.

Founded in 1969, the Department of Urban and Regional Planning has evolved to offer a number of degree programs, including an undergraduate preprofessional bachelor of arts (BA) and minor in environmental design, as well as an accredited professional master of urban planning (MUP) degree. In addition, the Department of Urban and Regional Planning offers a dual master of urban planning plus master of architecture (MArch + MUP) with the Department of Architecture, and a dual master of urban planning plus juris doctor (MUP + JD) with the Law School.

Degrees Offered

- **Undergraduate:** BA, Minor
- **Graduate:** MUP
- **Combined Graduate:** MArch+ MUP, MUP+ JD

Degree Options

Bachelor of Arts in Environmental Design. The bachelor of arts in environmental design is a preprofessional, 48-credit-hour curriculum offered by the Department of Urban and Regional Planning, divided into four parts: an introductory sequence, core workshops, department electives (including internship opportunities), and senior-year capstone research courses. Courses from other UB departments, selected with the aid of a faculty advisor, supplement major courses. The environmental design major is typically completed within six semesters.

Minor in Environmental Design. The minor in environmental design provides students from diverse backgrounds a broad foundation in the principles of urban planning and design as well as the form and function of the built environment. This minor requires a minimum of six courses, totaling a minimum of 18 credits, from the Department of Urban and Regional Planning. In addition, the minor in environmental design may enhance and provide additional knowledge for students intending to pursue an accredited professional master of urban planning (MUP) graduate degree upon completion of their baccalaureate studies. The program comprises two required lower-division courses and a minimum of four upper-division courses selected in consultation with a faculty advisor or mentor. The environmental design minor is typically completed within four to six semesters.

Advisement

All students in the UB School of Architecture and Planning are assigned faculty advisors and mentors upon admission to the School. In addition, UB's School of Architecture and Planning Advisement is available for assistance. Students are encouraged to consult regularly with their advisors and mentors in matters pertaining to academic options, course selection, post-baccalaureate studies, and career opportunities. Students meet with advisors and mentors as often as they choose to explore educational opportunities available within the School of Architecture and Planning and the University at Buffalo, and to plan a course of study that is consistent with their abilities, achievements, interests, and expectations.The ultimate goal of advisement is to empower students to use the tools and resources available to become active and responsible learners. Visit http://wings.buffalo.edu/ap for additional information on undergraduate advisement.

Acceptance Information

Bachelor of Arts in Environmental Design. Students are reviewed for admission consideration to the preprofessional bachelor of arts in environmental design by the Department of Urban and Regional Planning upon completing a minimum of 24 credit hours, attaining an overall minimum grade point average (GPA) of 2.33, and completing both PD 120 and PD 212 with a minimum cumulative GPA of 2.5, with competitive admission on a space available basis.

Intended pre-Environmental Design and declared Environmental Design majors are granted provisional admission as School of Architecture and Planning general studies majors.

Students generally apply to the program in during their sophomore year. Transfer students from other colleges should complete the required introductory courses prior to applying to the major, or may apply to transfer these introductory courses if they have completed equivalent courses. Contact School of Architecture and Planning Advisement for assistance.

Minor in Environmental Design. Students are admitted to the minor in environmental design by the Department of Urban and Regional Planning upon earning an overall minimum GPA of 2.0 and completing either PD 120 or PD 212 with a minimum grade of B- (GPA of 2.67 on a 4.0 scale) or higher.

Admission Procedures. Both current UB students and transfer students must complete an environmental design departmental

application, available from the Department of Urban and Regional Planning, School of Architecture and Planning Advisement, or online at http://wings.buffalo.edu/ap/. Dates for admission application submission are June 1 for fall admission and November 1 for spring admission. Applications received after June 1 for Fall admission consideration and November 1 for Spring admission consideration will be reviewed on a space-only available basis as guided by the School of Architecture and Planning's admission statement. Contact the Department of Urban and Regional Planning or UB's School of Architecture and Planning Advisement for assistance.

Admission Statement. The School of Architecture and Planning has an admission policy that actively encourages applicants from protected groups and does not discriminate on the basis of race, color, religion, gender, sexual orientation, national origin, disability, or veteran status. Admission is competitive, and; applicants are reviewed according to the admission criteria. Acceptance of students in the preprofessional, professional, and postprofessional programs is determined on the basis of the applicants' qualifications and experience. However, since the school's size is limited, the programs may exercise discretionary powers of selection. Courses and programs offered by the School of Architecture and Planning may include an instructional technology fee. Contact School of Architecture and Planning Advisement or visit http://wings.buffalo.edu/ap/ for additional information on undergraduate admission and advisement.

Academic Requirements

Students are reviewed on their progress in the preprofessional environmental design program by the Department of Urban and Regional Planning on an annual basis. The academic review evaluates the student's eligibility to continue onto the next level in the undergraduate program. A minimum cumulative GPA of 2.5 in environmental design program courses and a minimum cumulative UB GPA of 2.0 is required for satisfactory academic standing within the Department of Urban and Regional Planning. In addition to all minimum GPA levels, all undergraduate students are expected to make satisfactory academic progress in environmental design workshops. All students must earn no less than a C- in an environmental design workshop, and any student who receives a grade lower than C- must repeat the environmental design workshop before registering for the next workshop. Grades of lower than C- in any environmental design workshop will not count toward the preprofessional bachelor of arts in environmental design degree requirements.

Statement on Continuous Workshop Enrollment. Students admitted to the preprofessional bachelor of arts in environmental design must complete the appropriate environmental design workshop (PD 350, PD 360, PD 450, PD 494, PD 498) each semester to maintain continuous enrollment in the academic program, unless a student is approved for a studio leave of absence by the Department of Urban and Regional Planning and by School of Architecture and Planning Advisement. Design workshop leaves of absence are often approved for students with medical, legal, military, or other extenuating circumstances as reviewed by School of Architecture and Planning Advisement. Design workshop courses are open to admitted environmental design majors only.

A student who resigns design workshop with an "R" (resign) grade without prior approval for a design workshop leave of absence will be disqualified from the preprofessional bachelor of arts in environmental design. Disqualification shall mean that the student is prohibited from taking additional design workshops offered by the Department of Urban and Regional Planning. Disqualification will not occur if a student is on an approved studio leave of absence for medical, legal, military, or other extenuating circumstances.

A student who has been disqualified may apply for re-entry through the bachelor of arts in environmental design admission application, available online at http://wings.buffalo.edu/ap/envd-snadmit.html. The student ought to supply evidence of experience and academic coursework during the break in studio enrollment that will better prepare the student for additional design workshop studies. Contact School of Architecture and Planning Advisement for additional admission and advisement information.

School of Architecture and Planning Advisement also reviews undergraduate student requests for exceptions to registration: late registration, administrative registration, adding or withdrawing from courses after the University at Buffalo's prescribed deadlines available online at http://src.buffalo.edu/calendars/, and exceeding the University at Buffalo's 19-credit hour limit.

Transfer Policy

Courses completed at other colleges and universities are not automatically accepted by the Department of Urban and Regional Planning as fulfilling undergraduate requirements. While select courses taken elsewhere may be accepted, determination is made by an evaluation of the student's transcripts, course content, contact hours, and grades earned. A minimum course grade of B- (GPA of 2.67 on a 4.0 scale) is required for articulation to courses offered by the School of Architecture and Planning. Actual placement in the undergraduate preprofessional environmental design program is made after this evaluation is completed. No more than 12 credits of transfer coursework may be applied toward environmental design major requirements, and no more than 6 credits of transfer coursework may be applied toward environmental design minor requirements. Student transcript evaluations are conducted by School of Architecture and Planning Advisement. Visit http://wings.buffalo.edu/ap/transferpolicy.html for additional information on transfer policies and procedures.

ENVIRONMENTAL DESIGN—BA

Acceptance Criteria

Minimum GPA of 2.33 overall.
Minimum GPA of 2.5 in PD 120 and PD 212.
Minimum completion of 24 credit hours.
Competitive admission on a space available basis.

Advising Notes

A minimum prerequisite GPA of 2.5 and a minimum overall GPA of 2.33 are required for admission consideration, with competitive admission on a space available basis.

Intended pre-environmental design and declared environmental design majors are granted provisional admission as School of Architecture and Planning general studies majors. Contact School of Architecture and Planning Advisement for additional advisement information.

Dates for departmental admission application submission are June 1 for fall admission and November 1 for spring admission. Applications received after June 1 for Fall admission consideration and November 1 for Spring admission consideration will be reviewed on a space-only available basis as guided by the School of Architecture and Planning's admission statement. Contact the Department of Urban and Regional Planning or the School of Architecture and Planning's Office of Undergraduate Advisement for assistance.

Transfer students from other colleges should complete the required introductory courses prior to applying to the major or may apply to transfer these introductory courses if they have completed equivalent coursework. No more than 12 credits of transfer coursework may be applied toward major requirements.

Workshop courses (PD 350, PD 360,PD 450, PD 494, PD 498) are majors-only courses and require admission to the environmental design bachelor of arts. Concurrent enrollment in the following combination of program courses is not permitted: PD 350/PD 450, PD 360/PD 494, and PD 360/PD 498.

A minimum cumulative urban planning and design (PD-prefixed) GPA of 2.5, completion of PD 350 Environmental Design Workshop 1 plus PD 360 Environmental Design Workshop 2, and senior standing is required for enrollment in PD 494 Visions of the City and PD 498 Research Projects in Environmental Design.

(Continued on next page)

No more than 3 credits of PD 496 Environmental Design Internship and 3 credits of PD 499 Independent Study may be applied toward major requirements. Only one 200 level urban planning and design (PD-prefixed) course may be applied towards fulfillment of major electives.

A minimum of 36 PD-prefixed credit hours must be completed at the University at Buffalo to satisfy the Department of Urban and Regional Planning's bachelor of arts in environmental design academic residency requirement, and a minimum cumulative urban planning and design (PD-prefixed) GPA of 2.5 is required for successful completion of the major. Grades of lower than C- in any environmental design workshop will not count toward the preprofessional bachelor of arts in environmental design degree requirements. The preprofessional bachelor of arts in environmental design is typically completed within six semesters.

Intended pre-environmental design and admitted environmental design students should go to the Department of Urban and Regional Planning, Hayes Hall, for advisement.

Prerequisite Courses
PD 120 Introduction to Urban Studies
PD 212 Urban and Environmental Planning

Required Courses
PD 350 Environmental Design Workshop I: Information Analysis
PD 360 Environmental Design Workshop II: Graphic Communications
PD 450 Environmental Design Workshop III: Projects and Processes
PD 494 Visions of the City
PD 498 Research Projects in Environmental Design
Minimum 18 credit hours and minimum 6 courses of department electives at the 270-level or higher

Summary
Total required credit hours for the major.....48

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST OR SECOND YEAR
Fall—PD 120
Spring—PD 212

THIRD YEAR
Fall—PD 350, PD electives
Spring—PD 360, PD electives

FOURTH YEAR
Fall—PD 450, PD electives
Spring—PD 494, PD 498, PD electives

Electives and Course Groupings
The following is a sample, but not all-inclusive, list of possible electives offered by the Department of Urban and Regional Planning:
PD 279 Buffalo Niagara by Design
PD 301 Perspectives on Land Use and Development
PD 302 Technology and Public Policy
PD 303 Methods of Communication
PD 305 Environmental Education and Communication
PD 308 Problem Solving in Urban Environments
PD 312 Design of Cities
PD 313 Local Government Policy and Politics
PD 328 Historic Preservation
PD 355 Urban and Environmental Information
PD 356 Computing for Environmental Analysis
PD 362 Property Management
PD 379 The City Through Film
PD 402 Real Estate Development
PD 406 Community Development
PD 407 Site Planning and Design
PD 409 Technology and Urban Social Change
PD 422 Economic Development Planning
PD 425 CAD Technology in Environmental Design
PD 442 Central City Revitalization
PD 443 Negotiation and Conflict Resolution
PD 463 Cities and Globalization
PD 467 Legal Issues in Planning and Development
PD 469 GIS Applications
PD 472 Designing Livable Communities
PD 496 Environmental Design Internship
PD 499 Independent Study

ENVIRONMENTAL DESIGN—MINOR

Acceptance Criteria
Minimum GPA of 2.0.
Minimum B- in PD 120 or PD 212.

Advising Notes
Minimum cumulative urban planning and design (PD-prefixed) GPA of 2.5 is required for successful completion of the environmental design minor.

No more than 6 credits of transfer coursework may be applied toward minor requirements.

No more than 3 credits of PD 496 Environmental Design Internship and 3 credits of PD 499 Independent Study may be applied toward environmental design minor requirements.

For undergraduate information, or for an admission application to the minor in environmental design, contact School of Architecture and Planning Advisement.

Prerequisite Courses
PD 120 Introduction to Urban Studies or PD 212 Urban and Environmental Planning

Required Courses
PD 120 Introduction to Urban Studies or PD 212 Urban and Environmental Planning (whichever is not taken as the prerequisite course)
Minimum of four department electives and 12 credits at the 270 level or higher

Summary

Total required credit hours for the minor 18

Environmental Engineering

Department of Civil, Structural, and Environmental Engineering

School of Engineering and Applied Sciences

212 Ketter Hall
North Campus
Buffalo, NY 14260-4300
Phone: (716) 645-2114
Fax: (716) 645-3733
Web site: www.csee.buffalo.edu

A. Scott Weber
Chair

James N. Jensen
Director of Undergraduate Studies

For a listing of Environmental Engineering faculty, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Environmental engineers work at the interface of society and the environment, striving to protect both human and ecosystem health. Among the top priorities of the profession are the delivery of safe water to drink and clean air to breathe, and the restoration of water quality in the Great Lakes, the Hudson River and water bodies throughout the nation. Today, environmental engineers face issues that include the detection and treatment of new pollutants and pathogens, threats of terrorism to our nation's water supplies, the global cycling of pollutants, global warming, and energy. Because they often work in the public arena, environmental engineers require broad technical training and strong communication skills, and they usually must be licensed as professional engineers.

The undergraduate program in environmental engineering at the University at Buffalo prepares students for professional practice and eventual licensure as professional engineers. The BS curriculum includes introductory-level knowledge of the environmental issues associated with air, land, and water systems and environmental health impacts. The curriculum includes math, science and basic engineering courses in the freshman and sophomore years; required engineering courses in the junior and senior years; and technical elective courses taken in the senior

year. Laboratories in environmental engineering are included in two lab classes in the junior year. Students have considerable flexibility in the selection of technical electives, with approved electives in engineering, biology, chemistry, geology, economics, geography, and the social sciences.

Program educational objectives for the environmental engineering BS degree are:

- Employment and promotion as environmental engineers in consulting, industry, government, academia, and related professions;
- Maintain state-of-the-art knowledge through lifelong learning, such as graduate study and continuing education;
- Respond to the changing impact of environmental engineering solutions in a global and social context, and;
- Advance and support the engineering profession through participation in professional societies, civic groups, and educational institutions.

Degrees Offered

- **Undergraduate:** BS

Degree Options

In addition to the BS degree in environmental engineering, the Department of Civil, Structural and Environmental Engineering offers programs leading to a BS degree in civil engineering, the master of engineering (ME) degree, the master of science (MS) degree, and the doctor of philosophy (PhD) degree.

Advisement

Each student is assigned a faculty advisor upon acceptance into the program. New and transfer students are encouraged to meet with their faculty advisor as soon as possible to discuss their program of study. Continuing students are required to meet with their advisor at least once each semester. The principal role of the faculty advisor is to assist students in choosing courses to complete their degree requirements in a timely fashion with a manageable workload. Faculty advisors also provide general advice concerning career specialization, employment opportunities, graduate school, and other academic and professional decisions.

Academic advisement is also available through the Office of Undergraduate Education, School of Engineering and Applied Sciences, located in 410 Bonner Hall. Official records are maintained at this office. Students who need help or have questions regarding the general education requirements, UB DARS report, transfer credits, and/or basic science and math courses should see an academic advisor in 410 Bonner Hall.

Transfer Policy

For the transfer policy, please see the School of Engineering and Applied Sciences entry in the Undergraduate Catalog, http://undergrad-catalog.buffalo.edu/academicprograms/eas.shtml.

ENVIRONMENTAL ENGINEERING—BS

Acceptance Criteria

Please see the School of Engineering and Applied Sciences entry in the Undergraduate Catalog, http://undergrad-catalog.buffalo.edu/academicprograms/eas.shtml

Required Courses

BIO 309 Ecology
CHE 107 General Chemistry for Engineers
CHE 108 General Chemistry for Engineers
CHE 203 Organic Chemistry I
CIE 303 Geodesy, GPS, and GIS
CIE 308 Engineering Statistics
CIE 334 Soil Mechanics
CIE 340 Environmental Engineering
CIE 343 Hydraulic Engineering
CIE 354 Fluid Mechanics
CIE 360 Environmental Engineering Laboratory
CIE 362 Civil Engineering Laboratory II
CIE 415 Professional Practice Issues
CIE 441 Ecological Engineering
CIE 442 Treatment Process Engineering
CIE 444 Hydrologic Engineering
CIE 445 Groundwater Engineering
CIE 447 Environmental Engineering Practicum
CIE 448 Chemical Principles in Environmental Engineering
CIE 449 Environmental Engineering Design
CIE 469 Hazardous Waste Management
EAS 140 Engineering Solutions
EAS 207 Statics
EAS 209 Mechanics of Solids
GLY 414 Hydrogeology
MAE 177 Introduction to Engineering Drawing and CAD
MIC 301 Fundamentals of Microbiology
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 107 General Physics I
Three technical electives

Summary

Total credit hours for the major 110

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 107, EAS 140, MTH 141
Spring—CHE 108, MAE 177, MTH 142, PHY 107

SECOND YEAR
Fall—CHE 203, CIE 303, EAS 207, MTH 241
Spring—CIE 340, EAS 209, MIC 301, MTH 306

THIRD YEAR
Fall—BIO 309, CIE 354, CIE 360, CIE 441, CIE 308, GLY 414
Spring—CIE 334, CIE 343, CIE 362, CIE 415, CIE 442

FOURTH YEAR
Fall—CIE 444, CIE 447, CIE 448, CIE 469, one technical elective
Spring—CIE 445, CIE 449, two technical electives

Electives and Course Groupings

Only three credits of the informal courses (CIE 498, CIE 499, EAS 396, and EAS 496) can be counted as a technical elective toward fulfillment of degree requirements.

APPROVED TECHNICAL ELECTIVES
BIO 200 Evolutionary Biology
BIO 201 Cell Biology
BIO 452 Limnology
CE 304 Chemical Engineering Thermodynamics
CE 318 Transport Processes II
CE 429 Chemical Engineering Reaction Kinetics
CHE 204 Organic Chemistry II
CHE 214 Introduction to Analytical Chemistry
CHE 215 Introduction to Analytical Chemistry Lab
CHE 334 Physical Chemistry for Chemical Engineers
CHE 413 Instrumental Analysis
CHE 470 Analytical Chemistry of Pollutants
CIE 404 Civil Engineering Internship
CIE 406-CIE 408 Co-Op Work Experience

(Continued on next page)

CIE 458 Introduction to Geoenvironmental Engineering
CIE 461 Air Pollution
CIE 493 Project Management
EAS 230 Higher-Level Language
EAS 396 Engineering Career Institute (1 credit)
EAS 480 Technical Communications for Engineers
EAS 496 Engineering Co-op (2 credits)
ECO 405 Microeconomic Theory
ECO 407 Macroeconomic Theory
ECO 412 Environmental Economics
EE 200 EE Concepts/Nonmajors
GEO 481 Geographic Information Systems
GEO 484 GIS Applications
GEO 486 Spatial Decision-Support Systems
GLY 419 Environmental Geophysics
IE 320 Engineering Economy
MAE 204 Thermodynamics
SSC 315 Field Ecology
SSC 317 Environmental Politics
SSC 326 Great Lakes Ecology
SSC 360 Environmental Impact Statements
SSC 385 Energy, Environment and Society

Environmental Studies

Office of Interdisciplinary Degree Programs

College of Arts and Sciences

203 Clemens Hall
North Campus
Buffalo, NY 14260-4670
Phone: (716) 645-2245
Fax: (716) 645-3640
Web site: cas.buffalo.edu/programs/idp/ugrad/
E-mail: dryden@buffalo.edu

Lee Dryden
Director

About the Program

Environmental Studies is one of six concentration areas of the Social Sciences Interdisciplinary major. Designed for students who find the environmental perspective compelling, it is a field in which studies in human society overlap with basic science courses. Students study natural science and social science in order to understand environmental problems and processes. For more information please see the Social Sciences Interdisciplinary Degree Programs.

Degrees Offered

- **Undergraduate:** BA, BS, and Minor in Social Sciences Interdisciplinary
- **Concentration:** Environmental Studies

See Social Sciences Interdisciplinary for degree requirements.

Exercise Science

Department of Exercise and Nutrition Sciences

School of Public Health and Health Professions

210 Kimball Tower
South Campus
Buffalo, NY 14214-3079
Phone: (716) 829-2941
Fax: (716) 829-2428
Web site: sphhp.buffalo.edu/ens/

John X. Wilson
Chair

For a listing of Exercise Science faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The undergraduate program in exercise science (ES) is designed to give students a strong knowledge base in physiological, biomechanical, and nutritional aspects of human physical activity. Students can choose tracks in general ES, exercise nutrition or pre-physical therapy. The formal lecture/laboratory sequence of courses in the four-year program, coupled with a one-semester internship experience, prepares graduates for entry-level positions focusing on rehabilitation, prevention of injury and disease, and/or performance enhancement. Many students find employment as a direct result of the internship experience. The exercise science program is also excellent preparation for entry into professional courses of study in other health professions, such as medicine, public health, chiropractic, or physician's assistant. The ES program is also the entry point for the doctorate in physical therapy (DPT). Students complete one year of the upper-level professional sequence in the ES program before entering the DPT. In addition, a five-year combined BS in exercise science/MS in nutrition science is available.

Degrees Offered

- **Undergraduate:** BS
- **Combined Degrees:** BS/MS
- **Concentrations:** Nutrition

Acceptance Information

Students can enter the exercise science program as freshmen or transfer directly into the program from another institution; any student who meets the minimum requirements for admission into the University at Buffalo is qualified for provisional acceptance into the ES program. Students complete the ES prerequisite courses in the first two years, then undergo an academic review in the second semester of the sophomore year. To remain in ES and be permitted to take the professional sequence of courses, students must: (1) have a minimum GPA of 2.0 overall; (2) have completed all prerequisite courses with a minimum prerequisite GPA of 2.5 (this normally takes two years); and (3) submit a Promotion to Professional Sequence form. Promotion to professional sequence is competitive and is limited to 120 students.

To be eligible for the pre-PT track and BS/MS program in Exercise Science, students must have a minimum prerequisite GPA of 3.0 and no grade in prerequisite courses below C. To be eligible for the Physical Therapy program, students must have a prerequisite GPA of 3.0 and no grade below C in the prerequisite courses. Students can also be accepted into the BS/MS program in exercise and nutrition sciences as freshmen if they enter UB either in the honors or academic excellence programs. Students will still be required to complete the Promotion to Professional Sequence form and then be accepted into the upper division.

EXERCISE SCIENCE—BS

Acceptance Criteria

FOUR-YEAR PROGRAM

Minimum overall GPA of 2.0.
Minimum GPA of 2.5 in prerequisite courses (44-46 credit hours).

PRE-PT

Completion of general education requirements.
Minimum GPA of 3.0 in prerequisite courses.
Minimum grade of C in all prerequisite courses.

Advising Notes

Students are encouraged to see an academic advisor for more specific information regarding BS/MS and DPT programs.

GRADUATION REQUIREMENTS FOR BS

Completion of all general education requirements.
Minimum GPA of 2.0 overall.
Minimum GPA of 2.0 in ES courses plus 9 credits of approved electives.

Prerequisite Courses

ANA 113 Human Anatomy; or APY 345 Comparative Primate Anatomy and APY 346 Dissections in Comparative Primate Anatomy
CHE 101 General Chemistry
CHE 102 General Chemistry
ES 200 Science of Human Movement
MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I
NTR 108 Human Nutrition
PGY 300 Human Physiology
PHY 101 College Physics I
PHY 151 College Physics I Lab
PHY 102 College Physics II
PHY 152 College Physics II Lab
PSY 101 Introductory Psychology
STA 119 Statistical Methods

Required Courses

ANA 407 Gross Human Anatomy
ES 300 Theory of Athletic Injury I
ES 310 Exercise Assessment, Prescription, and Programming I
ES 330 Life Span Physiology
ES 340 Physical Activity for Special Cases
ES 341 Critical Analysis of Scientific Literature
ES 342 Neuroscience I
ES 343 Neuroscience II
ES 370 Biomechanics I
ES 380 Exercise Physiology
ES 402 Exercise Nutrition
ES 410 Exercise Assessment, Prescription, and Programming II
ES 429 Internship (must be taken for a total of 12 credit hours)
ES 442 Applications in Exercise Science
ES 450 Professional Development
Electives

Summary

Total required credit hours for the major.....107

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FOUR-YEAR PROGRAM

Note: Students are not required to follow this specific sequence. Sequencing of courses should be based on the student's strengths and individual preferences.

FIRST YEAR

Fall—CHE 101; MTH 121 or MTH 141; PSY 101
Spring—CHE 102, NTR 108, STA 119

SECOND YEAR

Fall—ANA 113*, PHY 101/PHY 151
Spring—PGY 300, PHY 102/PHY 152, ES 200

**Anatomy requirement can instead be satisfied by taking APY 345/APY 346 in the spring of the sophomore year.*

SUMMER BEFORE THIRD YEAR

ANA 407

THIRD YEAR

(YEAR 1 OF EXERCISE SCIENCE PROFESSIONAL SEQUENCE PROGRAM)

Fall—ES 300, ES 310, ES 342, ES 380, ES 341
Spring—ES 330, ES 343, ES 370, ES 442, electives

FOURTH YEAR

Fall—ES 340, ES 402, ES 410, ES 450, electives
Spring—ES 429 (must be taken for a total of 12 credit hours)

Electives and Course Groupings

Students can choose 9 credits of electives from the following:
BCH 403 Biochemical Principles
BIO 201 Cell Biology
BIO 205/BIO 215 Fundamentals of Biological Chemistry/Laboratory
CHE 201 Organic Chemistry w/Lab or CHE 203 Organic Chemistry
CHE 202 Organic Chemistry w/Lab or CHE 204 Organic Chemistry
ES 344 Neuroanatomy I
ES 345 Neuroanatomy II
ES 428 Health Promotion, Prevention and Wellness
ES 496 Practicum (maximum of 3 cr)
ES 497 Honors Research
ES 499 Independent Study
MIC 301 Fundamentals of Microbiology
MT 401 Clinical Biochemistry
NTR 401 Nutrition and Health
NTR 402 Nutrition in the Life Cycle
PGY 412 Applied Physiology
PGY 451 Human Physiology I
PGY 452 Human Physiology II
PHI 337 Social and Ethical Values in Medicine
PMY 302 Introduction to Pharmacology
PSY 322 Abnormal Psychology
PSY 325 Health Psychology
PSY 351 Biopsychology
PSY 438 Sport and Exercise Psychology

EXERCISE SCIENCE AND NUTRITION—BS/MS

Acceptance Criteria

Honors or UB scholars can be accepted as freshmen into the BS/MS in Exercise and Nutrition Science but must complete the Promotion to Professional Sequence (PPS) application for the Exercise Science - Nutrition Concentration. Other students must apply to the BS/MS Program by using the Promotion to Professional Sequence (PPS) application for the Exercise Science - Nutrition Concentration.

Prerequisite Courses

ANA 113 Human Anatomy; or APY 345 Comparative Primate Anatomy and APY 346 Dissections in Comparative Primate Anatomy
CHE 101 General Chemistry
CHE 102 General Chemistry
ES 200 Science of Human Movement
MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I
NTR 108 Human Nutrition
PGY 300 Human Physiology
PHY 101 College Physics I
PHY 151 College Physics I Lab
PHY 102 College Physics II
PHY 152 College Physics II Lab
PSY 101 Introductory Psychology
STA 119 Statistical Methods

Required Courses

ANA 407 Gross Human Anatomy
CHE 203 Organic Chemistry
CHE 204 Organic Chemistry
ES 310 Exercise Assessment and Prescription
ES 340 Physical Activity for Special Cases
ES 341 Critical Analysis of Scientific Literature
ES 342 Neuroscience I
ES 343 Neuroscience II
ES 370 Biomechanics
ES 380 Exercise Physiology
ES 410 Exercise Assessment & Prescription II
ES 496 Practicum
NTR 301 Dietary Assessment
NTR 402 Lifecycle Nutrition
One biochemistry course (one of the following: BCH 403, BIO 205, MT 401)
3 credits of Exercise Science undergraduate electives
NTR 500 Energy and Protein
NTR 501 Vitamins & Minerals
NTR 503 Nutrition and Health
NTR 505 Exercise Nutrition
NTR 600 Pathophysiology
NTR 630 Seminar (two semesters)
NTR 680 Research (2 credits)
PGY 551 Human Physiology
PGY 552 Human Physiology
One 500/600-level statistics course
9 credits of 500/600-level electives

Summary

Total required credit hours for undergraduate portion.....89
Total required credit hours for BS/MS.....125

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the Graduate School's Policies and Procedures Manual for requirements for master's degree candidates.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 101; MTH 121 or MTH 141; PSY 101
Spring—CHE 102; STA 119; NTR 108

SECOND YEAR
Fall—ANA 113*, PHY 101/PHY 151
Spring—PGY 300, PHY 102/PHY 152, ES 200

**Anatomy requirement can also be satisfied by taking APY 345/APY 346 in the spring of the sophomore year.*

SUMMER BEFORE THIRD YEAR
ANA 407

THIRD YEAR
Fall—ES 310, ES 342, ES 380, ES 341, NTR 301, CHE 203
Spring—ES 343, ES 370, CHE 204, NTR 402, ES electives (ES 442 recommended)

FOURTH YEAR
Fall—ES 340, ES 410, NTR 503, NTR 505, one of the following: MT 401, BCH 403, BIO 205)
Spring—NTR 501, NTR 600, ES 496, 500/600 level electives

FIFTH YEAR
Fall—PGY 551, NTR 500, NTR 630, one 500/600 level statistics course, 500/600 level electives
Spring—PGY 552, NTR 630, NTR 680, 500/600 level electives

Film Studies

Department of Media Study

College of Arts and Sciences

231 Center for the Arts
North Campus
Buffalo, NY 14260-6020
Phone: (716) 645-6902
Fax: (716) 645-6979
Web site: www.cas.buffalo.edu/depts/filmstudies/

Bernadette Wegenstein
Program Director

Lisa Hewitt
Program Advisor

About the Program

The film studies program (FST) program, administered by the Department of Media Study, is an interdisciplinary BA curriculum in the College of Arts and Sciences. FST offers film-related courses from the Departments of Anthropology, African American Studies, Art, Communications, Comparative Literature, English, Media Study, Romance Languages and Literatures, Sociology, and Women's Studies, as well as from the Center for the Americas, taught by thirty different CAS faculty members. Throughout the FST curriculum, students approach film critically (filmmaking will be only a minor, and elective, component). They acquire historical, theoretical, and intercultural tools to study films from around the world and become capable of reading the art of cinema as cultural critics. Screenings, film festivals, the Buffalo Film Seminars, http://csac.buffalo.edu/bfs.html), and FST conferences are offered to enrich students' critical film expertise in Buffalo.

Degrees Offered

- **Undergraduate:** BA
- **Graduate:** MAH

Degree Options

The FST program requires 120 total credit hours (46 within the major). There is the opportunity to continue on to an interdisciplinary MA in humanities (see http://pluto.fss.buffalo.edu/programs/idp/grad/humanities.html), which requires a total of 36 credit hours.

Advisement

Students who meet the acceptance criteria may arrange an appointment with the academic advisor. The advising office is located in 231 Center for the Arts. Students should bring a DARS report to each appointment.

Transfer Policy

Film studies coursework taken at another institution is evaluated for transferability to UB by the director of the FST program. Students should provide a transcript and syllabi for courses taken. For applications, please contact Lisa Hewitt in the Department of Media Study.

Transfer students and continuing students who have accumulated 50 or more credit hours overall will be able to declare the major provisionally until they are able to complete the courses within the major. This insures that students declaring the interdisciplinary major have both the breadth and the particular preparation to succeed in the FST major. To facilitate the articulation of transfer courses into the major, the program director confers with each incoming transfer student.

FILM STUDIES—BA

Acceptance Criteria

Completion of the prerequisite courses with a minimum GPA of 2.5.

Advising Notes

Admission to the major is granted at the end of the sophomore year, when students will have accumulated at least 50 overall credit hours with a minimum GPA of 2.0.

Students must meet with the director of the FST program prior to application to the major (usually at the end of the sophomore year).

No course can count twice.

Prerequisite Courses

Any three of the required courses for the major.

Required Courses

DMS 107 Film History I or DMS 108 Film History II
DMS 259 Media Analysis
ENG 379 Film Genres
ENG 441 Contemporary Cinema I or ENG 442 Contemporary Cinema II
Ten additional courses, chosen from the Electives and Course Groupings section below

Summary

Total required credit hours for the major.....46

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—DMS 259, SOC 334
Spring—DMS 108

SECOND YEAR
Fall—AAS 253, AMS 100
Spring—DMS 213, ENG 256

THIRD YEAR
Fall—DMS 305, WS 415
Spring—ENG 442, ITA 430

FOURTH YEAR
Fall—DMS 409, DMS 440
Spring—DMS 406, DMS 411

Electives and Course Groupings

Electives
Three courses* for a minimum of 9 credit hours in this category:
AAS 253 Blacks in Film I
AAS 254 Blacks in Film II
AAS 417 Contemporary Black Film Culture
AMS 100 Non-Western Images in Film
DMS 101 Basic Filmmaking
DMS 103 Basic Video or DMS 105 Basic Documentary
DMS 109 Introduction to Film Interpretation
DMS 213 Immigration & Film
DMS 405 Ethnographic Film
DMS 409 Nonfiction Film
DMS 411 Film Theory
DMS 413 Film Narrative
DMS 418 Film Comedy
DMS 440 Women Directors
DMS 484 Language Media Poetics
ENG 441 Contemporary Cinema I
ENG 442 Contemporary Cinema II
FR 341 The French Film
ITA 410 Special Topics
ITA 429 Italian Cinema I
ITA 430 Italian Cinema II
SPA 408 History of Spanish Cinema

**Or their equivalent as determined by the Director of the Film Studies program*

FILM THEORY-HISTORY-CRITICISM-ANALYSIS
Required:
DMS 107 Film History I or DMS 108 Film History II
ENG 379 Film Genres

(Continued on next page)

Select two additional courses* for a minimum of 14 credit hours in this category:
- DMS 225 Digital Literature Survey
- DMS 305 Film Analysis I
- DMS 306 Film Analysis II
- DMS 409 Nonfiction Film
- DMS 411 Film Theory
- ENG 256 Literary Types: Film
- ENG 413 Film Directors
- ENG 420 Film Theory
- ENG 426 Studies in Genre
- WS 379 Gender and Hollywood Films

CRITICAL THEORY AND CULTURAL STUDIES

Required:
- DMS 259 Media Analysis

Select three additional courses* for a minimum of 13 credit hours in this category:
- DMS 425 Visual Media Poetics
- DMS 426 Sound Media Poetics
- SOC 334 Introduction to Cultural Studies
- SOC 368 Sociology of Film
- WS 415 Media & Gender
- WS 459 Television, Gender & Society

WORLD CINEMA

Required:
- ENG 441 Contemporary Cinema I or ENG 442 Contemporary Cinema II

Select two additional courses* for a minimum of 10 credit hours in this category:
- AAS 253 Blacks in Film I
- AAS 254 Blacks in Film II
- AAS 417 Contemporary Black Film Culture
- AMS 100 Non-Western Images in Film
- DMS 333 Third World Cinema
- DMS 440 Women Directors
- FR 341 The French Film
- ITA 410 Special Topics
- ITA 429 Italian Cinema I
- ITA 430 Italian Cinema II
- SPA 408 History of Spanish Cinema

French

Department of Romance Languages and Literatures

College of Arts and Sciences

910 Clemens Hall
North Campus
Buffalo, NY 14260-4620
Phone: (716) 645-2191
Fax: (716) 645-5981
Web site: rll.buffalo.edu
E-mail: rll-info@buffalo.edu

Maureen Jameson
Chair
(716) 645-2191
jameson@buffalo.edu

Colleen Culleton
Director of Undergraduate Studies and Language Program Director
(716) 645-2191, ext. 1181
culleton@buffalo.edu

For a listing of French course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The French language is spoken by millions of people living in France, Belgium, Switzerland, Canada, the Caribbean, North and Central Africa, the Middle East, and Southeast Asia. It is a major international language of the arts, commerce, and science, a status that reflects the leading role that French culture and technology have played and continue to play. In the United States, more students study French than any other foreign language except Spanish.

The centuries-old relationship of the English-speaking and French-speaking cultures has resulted in a common heritage. Not only is there a substantial overlap in vocabulary—some 40 percent of English words are of French origin—there is also a common culture, going from the Arthurian legends through postcolonial self-examination, and students find many familiar landmarks in the study of French culture.

The French program trains students in the spoken and written language, and deepens their knowledge of and interest in the literature and culture of France and other French-speaking countries. Majors in French are encouraged to study abroad for a summer, a semester, or a full year. SUNY programs in French cities are open to UB students. For a major or minor, a minimum of four courses at the 300/400 level must be taken in residence at the Buffalo campus. Students wishing to satisfy the requirements for teacher certification should plan their programs with particular care in order to accommodate the required semester of the professional sequence during their senior year. For certification requirements, students should contact the Teacher Education Institute, Graduate School of Education, 375 Baldy Hall.

Degrees Offered

Undergraduate: BA, Minor
Graduate: MA, PhD

Degree Options

The major program leads to a BA in French. For students who have another major field, both joint majors and double majors with French are possible; these programs also lead to the BA degree. There is also a French minor program.

Advisement

Please contact Dr. Jeannette Ludwig (716-645-2191, ext. 1175; jmludwig@buffalo.edu) for advising and any questions regarding French courses or the French program.

Acceptance Information

In order to be accepted for the French major, a minimum GPA of 2.0 overall, and a minimum GPA of 2.5 in prerequisite courses or their equivalents (FR 101-FR 102 sequence or FR 104; FR 151-FR 152, and FR 211-FR 212) are ordinarily required. Early admission is available for qualified and motivated students; inquires should be addressed to the director of undergraduate studies.

In order to be accepted for the French minor, a minimum GPA of 2.0 overall, and a minimum GPA of 2.5 in prerequisite courses or their equivalents (FR 101-FR 102 sequence or FR 104; FR 151-FR 152, and FR 211-FR 212) are ordinarily required.

Academic Requirements

Graduation requirements for the French major include completion of two 200-level courses (6 credit hours) with a minimum GPA of 2.5, and ten 300/400-level courses (30 credit hours) with a minimum GPA of 2.0. Among these ten courses, the following three are required: FR 301, FR 302, and FR 343.

Graduation requirements for the double major are the same as those for the major.

Some students are interested in two fields of study, but prefer a program that does not require them to complete all requirements for both fields. These students may be interested in the joint major. Graduation requirements for the joint major include completion of two 200-level courses (6 credit hours) with a minimum GPA of 2.5, and seven 300/400-level courses (21 credit hours) with a minimum GPA of 2.0. Among these seven courses, the following three are required: FR 301, FR 302, and FR 343. In addition, the student must complete the joint major requirements for another department.

Requirements for completion of the French minor include completion of two 200-level courses (6 credit hours) with a minimum GPA of 2.5, and four 300/400-level courses with a minimum GPA of 2.0. Among these four courses, the following three are required: FR 301, FR 302, and FR 343.

FRENCH—BA

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in prerequisite coursework in French.

Prerequisite Courses
FR 101 Elementary French 1st Semester - FR 102 Elementary French 2nd Semester, or FR 104 Transitional Elementary French, or equivalent preparation
FR 151 Intermediate French 1st Semester - FR 152 Intermediate French 2nd Semester, or equivalent preparation
FR 211 Studies in French Language and Culture I*
FR 212 Studies in French Language and Culture II*

Required Courses
FR 301 Survey of French Literature I
FR 302 Survey of French Literature II
FR 343 Advanced Grammar and Composition
Seven additional 300/400-level electives

Summary
Total required credit hours for the major.....36

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—Elementary or intermediate French or FR 211*
Spring—Elementary or intermediate French or FR 212*

SECOND YEAR
Fall—FR 211 or FR 301*
Spring—FR 212 or FR 302*

THIRD YEAR
Fall—FR 301, two 300/400-level electives
Spring—FR 302, FR 343, one 300/400-level elective

FOURTH YEAR
Fall—Two 300/400-level electives
Spring—Two 300/400-level electives

**Placement is based on a student's prior training, and may be determined by a placement test and an advisement session in the department. For further information, please contact Professor Jeannette Ludwig at (716) 645-2191, ext. 1175, or jmludwig@buffalo.edu.*

Note: Different scheduling arrangements can be made for those students wishing to study abroad.

FRENCH—MINOR

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in prerequisite coursework in French.

Prerequisite Courses
FR 101 Elementary French 1st Semester - FR 102 Elementary French 2nd Semester, or FR 104 Transitional Elementary French, or equivalent preparation
FR 151 Intermediate French 1st Semester - FR 152 Intermediate French 2nd Semester, or equivalent preparation
FR 211 Studies in French Language and Culture I*
FR 212 Studies in French Language and Culture II*

Required Courses
FR 301 Survey of French Literature I
FR 302 Survey of French Literature II
FR 343 Advanced Grammar and Composition
One additional 300/400-level elective

Summary
Total required credit hours for the minor 18

**Placement is based on a student's prior training, and may be determined by a placement test and an advisement session in the department. For further information, please contact Professor Jeannette Ludwig at (716) 645-2191, ext. 1175, or jmludwig@buffalo.edu.*

General Education Program*

(formerly Undergraduate College)

College of Arts and Sciences

708 Clemens Hall
North Campus
Buffalo, NY 14260
Phone: (716) 645-3479
Fax: (716) 645-6737
Web site: gened.buffalo.edu

Jeri Jaeger
Associate Dean for Undergraduate Education
jjaeger@buffalo.edu

Patricia E. Carey
Program Administator
pec@buffalo.edu

**Not a baccalaureate degree program*

For a listing of General Education course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Courses offered with a UGC prefix meet general education program requirements. The faculty who teach these courses are drawn from many academic departments of the university, where they continue to teach courses and conduct research in their own disciplines. For more information on UB's general education requirements, see http://gened.buffalo.edu.

Geography

Department of Geography

College of Arts and Sciences

105 Wilkeson Quad
Ellicott Complex
North Campus
Buffalo, NY 14261
Phone: (716) 645-2722
Fax: (716) 645-2329
Web site: www.geog.buffalo.edu

Peter A. Rogerson
Chair

Sean J. Bennett
Director of Undergraduate Studies

For a listing of Geography faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Geography is primarily concerned with the locations and arrangements in space of human and natural phenomena, and with the interrelationships between people, businesses, public and social institutions, and their spatial environments. Geographers, therefore, are interested in such topics as human perception and behavior; the location of industry and business; mobility and transportation; urban growth and development; regional planning and policy study; physical and ecological environments; interactions of people and places over space and time; and the diffusion of information, commodities, and ideas.

Over the years, geography has developed four major traditions or approaches. The first tradition is a spatial tradition, with a focus on the importance of distance, direction, position, pattern, and movement as concepts worthy of study themselves, whatever the subject matter. The second tradition is that of area studies, which takes as its objective the characterization and differentiation of places through a thorough accounting of all of the places' aspects and attributes. The third tradition is through a human-land tradition, which, as the name implies, entails a focus upon the interrelationships and interactions between people and their environment. The fourth tradition is the earth-science tradition, which involves a focus upon the study of the earth, the atmosphere, climate, and the living world.

Geographers represent geographic space with maps, and thus geographers are very concerned with map use and design. The design of maps may often involve the application of cognitive psychology, statistics, and mathematics. The development of Geographic Information Systems has revolutionized the mapping of statistics and made possible the rapid production of specialized maps for decision makers.

Because of these wide interests, geographers must acquire training in quantitative methods, field techniques, computer technology, data handling and analysis, cartographic displays and production, and written and verbal communication skills. In addition, interdisciplinary work often is necessary in such areas as economics, computer science, psychology, geology, mathematics, marketing, statistics, information systems, and environmental sciences.

Degrees Offered

- **Undergraduate:** BA, Minor
- **Concentrations:** Geographic Information Systems, Earth Systems Science, Urban and Regional Analysis, and International Business and World Trade
- **Combined:** BA/MA in International Economic and Business Geographies
- **Graduate:** MA, MS, PhD

Degree Options

Joint and double majors with other departments in the university are encouraged. Students interested in joint programs are advised to obtain up-to-date information from the departments involved and to contact the Director of Undergraduate studies in the relevant departments.

Students interested in geography are strongly encouraged to visit the department and talk with the director of undergraduate studies. Once students have been accepted as majors, they work with a department advisor and a program is worked out to suit individual student's needs and goals.

Advisement

Students should contact the Director of Undergraduate Studies.

Transfer Policy

Prospective majors who have taken geography courses at another school that they believe are equivalent to courses offered by this department should contact the director of undergraduate studies to petition for acceptance of transfer geography credits.

GEOGRAPHY—BA

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum GPA of 2.0 in the prerequisite courses.

Prerequisite Courses

Any two geography courses.

Required Courses

GEO 101 Earth Systems Science I
GEO 102 Introduction to Human Geography or GEO 103* Geography of Economic Systems
GEO 120 Maps and Mapping
GEO 410 Univariate Statistics in Geography (or another approved statistics course)
One computer science course
One 300/400-level course from each of the following specialty areas: Earth Systems Science; GIS and cartography; International business and world trade; Urban and regional analysis

**GEO 103 is mandatory for the five-year BA/MA program.*

Summary

Total required credit hours for the major.....39

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—General education requirements
Spring—General education requirements

SECOND YEAR
Fall—Two or three lower-level geography courses (choose from GEO 101; GEO 102 or GEO 103; and GEO 120)
Spring—One computer science course, two or three geography electives

THIRD YEAR
Fall—GEO 410, two or three geography electives
Spring—Two or three geography electives

FOURTH YEAR
Fall and Spring—Remaining geography electives

Concentrations

Students pursuing a concentration complete all of the general geography requirements (above) as well as additional requirements for the concentration. To find out more about the concentrations, please see the following descriptions and/or contact the department.

Required Courses

GEOGRAPHIC INFORMATION SYSTEMS (GIS) AND CARTOGRAPHY
GEO 101; GEO 102 or GEO 103; GEO 120, GEO 381, GEO 410, GEO 411, GEO 481, and GEO 485
Two of the following: GEO 389, GEO 420, GEO 450-GEO 453, GEO 462, GEO 464, GEO 479, GEO 483, GEO 488, GEO 489
One 300/400-level course in each of the other three specialty areas
One of the following pairs of math courses: MTH 121 and MTH 122, or MTH 141 and MTH 142
Two computer courses: CSE 113 and CSE 114

INTERNATIONAL BUSINESS AND WORLD TRADE
GEO 101; GEO 102 or GEO 103; GEO 120, GEO 330, GEO 333, GEO 334, GEO 410, GEO 411, GEO 419, GEO 425, GEO 460

(Continued on next page)

One 300/400-level course in both the Earth Systems Science and GIS/cartography areas
ECO 181, ECO 182, ENG 101;
One computer science course
Two electives from the following: MGA 201, MGB 301, MGF 301, MGM 301, writing/communication courses, foreign language courses

EARTH SYSTEMS SCIENCE

GEO 101; GEO 102 or GEO 103; GEO 106, GEO 120, GEO 347 or GEO348; GEO 350; GEO 352 or GEO 356; GEO 410, GEO 435 or GEO 470, GEO 481 and two electives from GEO 200, GEO 201, GEO 345, GEO 347, GEO 348, GEO 352, GEO 356, GEO 435, GEO 440, GEO 444, GEO 445, GEO 449, GEO 454, GEO 470, GEO 479, GEO 483, GEO 499.
One 300/400-level elective from the Urban & Regional Analysis and International Business and World Trade specialization areas.
One Math course from: MTH 121 or MTH 141
One Two-course sequence from biology (BIO200-201), chemistry (CHE101-102), or physics (PHY101-102).

URBAN AND REGIONAL ANALYSIS

CSE 113 and ECO 182
GEO 101, GEO 102, GEO 103, GEO 120, GEO 366, GEO 367, GEO 410, GEO 411, GEO 419, GEO 425, and GEO 460
One 300/400-level course in both the GIS/Cartography and Earth Systems Science areas
One of the following: GEO 496, GEO 497, GEO 499

GEOGRAPHY—BA/MA

Specialization in International Economic and Business Geography

Acceptance Criteria

Minimum GPA of 3.0 in the prerequisite courses.
Two letters of recommendation from instructors of the prerequisite courses.

Advising Notes

Acceptance to the MA portion of this program requires submission of GRE scores. We recommend this be done between the third and fourth year.

Most of these courses are only offered once each year; therefore, students need to plan ahead to be certain that they enroll in the required courses during the appropriate semesters.

Students must apply to the department for full-time graduate status by fall of the fifth year.

Prerequisite Courses

GEO 103 and three additional geography courses.

Required Courses

ECO 181 Macroeconomics
ECO 182 Microeconomics
GEO 120 Maps and Mapping
GEO 330 Dynamics of International Business
GEO 333 Bases of World Commerce
GEO 334 International Environment & Commercial Problems
GEO 366 Urban Geography
GEO 389 Business Geographics
GEO 410 Univariate Statistics in Geography
GEO 411 Multivariate Statistics in Geography
GEO 419 Transportation and Society
GEO 425 Industrial Geography
GEO 497 Geography Honors Program
GEO 502 Survey Methods in Geography
GEO 531 Introduction to International Trade
GEO 625 Industrial Geography
GEO 631 Project Guidance or GEO 639 Special Topics in Trade
GEO 632 Macro Issues in Trade
GEO 634 World Regional and Cultural Systems
GEO 636 Spatial Problems of Multinational Corporations
GEO 640 Asia-Pacific Economy
GEO 680 Technology, Globalization, and Development
One approved undergraduate-level elective
Two approved graduate-level electives

Summary

Total required credit hours for the undergraduate portion.....46
Total required credit hours for the BA/MA.....79

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the Graduate School's policies and procedures manual for requirements for master's degree candidates.

Upon completion of undergraduate program requirements and all MA requirements, the combined degree is conferred at the end of the fifth year.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall—Four general education courses or electives
Spring—Four general education courses or electives

SECOND YEAR

Fall—ECO 181, GEO 103, GEO 330, two general education courses or electives
Spring—ECO 182, GEO 120, GEO 333, two general education courses or electives

THIRD YEAR

Fall—GEO 366, GEO 389, GEO 410, one general education course or elective
Spring—GEO 334, GEO 411, GEO 419, GEO 425, one general education course or elective

FOURTH YEAR

Fall—GEO 490, GEO 531, GEO 632, one general education course or approved undergraduate-level elective
Spring—GEO 625, GEO 636, one general education course or approved undergraduate-level elective, one approved graduate-level elective

FIFTH YEAR

Fall—GEO 502, GEO 634, GEO 680, one approved graduate-level elective
Spring—GEO 631 or GEO 639; GEO 640

GEOGRAPHY—MINOR

Acceptance Criteria

Minimum GPA of 2.0 overall.

MINORS

Earth Systems Science
General Geography
Geographic Information Systems (GIS) and Cartography
Geography of International Business and World Trade
Urban and Regional Analysis

For detailed information, stop in at the main office, 105 Wilkeson, or contact the director of undergraduate studies.

Geological Sciences

Department of Geology

College of Arts and Sciences

876 Natural Sciences Complex
North Campus
Buffalo, NY 14260-3050
Phone: (716) 645-6800, ext. 6100
Fax: (716) 645-3999
Web site: www.geology.buffalo.edu
E-mail: geology@buffalo.edu

Charles E. Mitchell
Chair

Matthew W. Becker
Director of Undergraduate Studies

For a listing of Geological Sciences faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Geology is the science of earth. It is primarily based on the study of material exposed at earth's surface and is therefore an outdoor science. The term 'geology' applies to numerous scientific subdisciplines (for example, environmental geology, geochemistry, geophysics, glaciology, hydrogeology, mineralogy, paleontology, planetary geology, stratigraphy, structural geology, volcanology) that interact with each other and collectively focus on increasing our knowledge of earth, the processes that shape it, and our physical and evolutionary relations to earth and to its other inhabitants.

Geologists apply their knowledge in a variety of ways. Some problems geologists work on are strictly practical: we use geophysics, geochemistry, and stratigraphic mapping skills in exploration for mineral, water, and energy resources. We gauge the extent of ground water or soil pollution and devise strategies for remediation using sophisticated hydrologic, geochemical, or geophysical computer models. We use knowledge of volcanic eruptions and slope stability to reconstruct past natural disasters and, based on this, predict and protect against future threats. We use glacial movements and sediments to reconstruct the climate of the planet. Geologists may also apply their knowledge toward problems in basic science: We analyze the magmatic activity at mid-ocean ridges that forms the ocean floor, develop hypotheses about the formation of surface features on Mars, and use computer models based on satellite images to predict large-scale Earth processes. We strive to understand the interaction of Earth systems and their linkage to the history of life through the processes of evolution to provide key insights into our own history. All of the data in both practical and theoretical aspects of geology aid us in providing information about living consciously and using our resources wisely so that governments and societies can make informed decisions about our stewardship of earth.

Degrees Offered

- **Undergraduate:** BA, BS, Minor
- **Combined:** BA/MA
- **Graduate:** MA, MS, PhD

Degree Options

The Department of Geology offers BA and BS degrees, and maintains a strong undergraduate research program. The curriculum for both degrees includes courses of instruction in the major areas of modern geology, with emphasis on field and laboratory studies and their quantitative interpretation. The department also conducts a comprehensive month-long summer geological mapping course—with field sites located in Colorado, Utah, and Wyoming—to integrate all that students have learned.

Our BS program is designed for students who enter directly into geology-related employment upon graduation (e.g., energy resources, environmental consulting, state or national geological surveys), as well as for those who continue on to graduate school. The BA program offers more flexibility in coursework and is designed for students interested in careers outside of geology that require a strong geological background, such as environmental law, high school earth-science teaching, government policy, and nature writing.

The geology department also offers a combined BA/MA program designed to be completed in five years, compared to the six years needed for completion of a conventional BA followed by an MA. This program is designed for students interested in careers outside of geology but requiring graduate-level schooling. Any geology major who meets the requirements (see the combined BA/MA program chart) may apply to the combined program during the second semester of their junior year in the BA program.

Advisement

At the time of a student's acceptance into the Geology department, the Director of Undergraduate Studies becomes the student's academic advisor. When the student reaches junior status in the department, he/she may be reassigned to an advisor whose specialty coincides with that student's interests.

Students must meet with their advisor at least once a semester prior to registering for the following semester. At the time of the advisement appointment, the student's academic record (all university, general education, and departmental requirements) is reviewed and any concerns are discussed.

Transfer Policy

The Department of Geology has articulation agreements with several colleges in the region. Students should consult with the advisement office at their present college for more details. The College of Arts and Sciences Student Advisement and Services Office at UB also may be consulted. To request a transfer of credit for a geology course not listed at either advisement office, submit a request to the director of undergraduate studies along with a course description from the college catalog and a course syllabus.

GEOLOGICAL SCIENCES—BS

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.0 in the prerequisite courses.

Advising Note
To graduate, minimum GPA of 2.3 in all courses required for the degree.

Prerequisite Courses
GLY 101 Global Environmental Science or GLY 103 Evolution of the Earth and Solar System

Required Courses
CHE 101 General Chemistry
CHE 102 General Chemistry
GLY 102 Global Environmental Science or GLY 104 Evolution of the Earth and Solar System
GLY 106 Geological Mapping Techniques
GLY 215 Soft Rock I: Sedimentology
GLY 216 Soft Rock II: Paleontology and Stratigraphy
GLY 305 Mineralogy
GLY 306 Petrology
GLY 312 Surface Processes and Hydrology I
GLY 313 Surface Processes and Hydrology II
GLY 325 Structure-Geophysics-Tectonics I
GLY 326 Structure-Geophysics-Tectonics II
GLY 407 Geological Field Training (minimum GPA of 2.0 in geology courses required to attend this required summer field camp)
MTH 121 Survey of Calculus and Its Applications I
MTH 122 Survey of Calculus and Its Applications II
PHY 101 College Physics I
PHY 102 College Physics II
PHY 151 College Physics I Lab
PHY 152 College Physics II Lab
Two 400-level GLY courses (not GLY 493 or GLY 499)

Summary
Total required credit hours for the major.....82

See Baccalaureate Degree Requirements for general education and remaining university requirements.

(Continued on next page)

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 101; GLY 101 or GLY 103; MTH 121
Spring—CHE 102; GLY 102 or GLY 104; MTH 122

SECOND YEAR
Fall—GLY 215, PHY 101, PHY 151
Spring—GLY 106, GLY 216, PHY 102, PHY 152

THIRD YEAR
Fall—GLY 305, GLY 325
Spring—GLY 306, GLY 326
Summer—GLY 407 (minimum GPA of 2.0 in geology courses required to attend this required summer field camp)

FOURTH YEAR
Fall—GLY 312, one 400 level GLY course (not GLY 493 or GLY 499)
Spring—GLY 313, one 400 level GLY course (not GLY 493 or GLY 499)

GEOLOGICAL SCIENCES—BA

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.0 in the prerequisite courses.

Advising Note
To graduate, minimum GPA of 2.3 in all courses required for the degree.

Prerequisite Courses
GLY 101 Global Environmental Science or GLY 103 Evolution of the Earth and the Solar System

Required Courses
CHE 101 General Chemistry
GLY 102 Global Environmental Science or GLY 104 Evolution of the Earth and Solar System
GLY 106 Geological Mapping Techniques
MTH 121 Survey of Calculus and Its Applications I
PHY 101 College Physics I
PHY 151 College Physics I Lab
Two GLY courses from Group A
Six GLY courses from Group B

Summary
Total required credit hours for the major.....48

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MTH 121, PHY 101,PHY 151, one GLY course from Group A
Spring—One GLY course from Group A

SECOND YEAR
Fall—CHE 101, one GLY course from Group B
Spring—GLY 106, one GLY course from Group B

THIRD YEAR
Fall—Two GLY courses from Group B
Spring—Two GLY courses from Group B
Summer—GLY 407 (recommended; minimum GPA of 2.0 in geology courses required to attend this summer field camp)

FOURTH YEAR
Fall and Spring—Any GLY courses (optional)

Electives and Course Groupings

GROUP A: INTRODUCTORY SEQUENCES
One of the following two-semester sequences:
- GLY 101 and GLY 102 Global Environmental Science
- GLY 103 and GLY 104 Evolution of the Earth and Solar System

GROUP B: SEMESTER SEQUENCES
Three of the following two-semester sequences:
- GLY 215 Soft Rock I: Sedimentology and GLY 216 Soft Rock II: Paleontology and Stratigraphy
- GLY 305 Mineralogy and GLY 306 Petrology
- GLY 312 Surface Processes and Hydrology I and GLY 313 Surface Processes and Hydrology II
- GLY 325 Structure-Geophysics-Tectonics I and GLY 326 Structure-Geophysics-Tectonics II

GEOLOGICAL SCIENCES—BA/MA

Acceptance Criteria
Minimum GPA of 3.0 in all courses required for the major.
Completion of the prerequisite courses.
Two letters of recommendation from faculty members.

Prerequisite Courses
Any two of the following: GLY 215, GLY 305, GLY 312, GLY 325.

Required Courses
CHE 101 General Chemistry
GLY 106 Geological Mapping Techniques
MTH 121 Survey of Calculus and Its Applications I
PHY 101 College Physics I
PHY 151 College Physics I Lab
Two GLY courses from Group A
Six GLY courses from Group B

Summary
Total required credit hours for the undergraduate portion.....48
Total required credit hours for the BA/MA 76

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MTH 121, PHY 101, PHY 151, one GLY course from Group A
Spring—one GLY course from Group A

SECOND YEAR
Fall—CHE 101, one GLY course from Group B
Spring—GLY 106, one GLY course from Group B

THIRD YEAR
Fall—Two GLY courses from Group B
Spring—Two GLY courses from Group B
Summer—GLY 407 (minimum GPA of 2.0 in geology courses required to attend this summer field camp)

FOURTH YEAR
Fall and Spring—Graduate course work approved by the graduate committee

FIFTH YEAR
Fall and Spring—Graduate course work approved by the graduate committee, successful completion of a project

Electives and Course Groupings

GROUP A: INTRODUCTORY SEQUENCES
One of the following two-semester sequences:
- GLY 101 and GLY 102 Global Environmental Science
- GLY 103 and GLY 104 Evolution of the Earth and Solar System

GROUP B: SEMESTER SEQUENCES
Three of the following two-semester sequences:
- GLY 215 Soft Rock I: Sedimentology and GLY 216 Soft Rock II: Paleontology and Stratigraphy
- GLY 305 Mineralogy and GLY 306 Petrology
- GLY 312 Surface Processes and Hydrology I and GLY 313 Surface Processes and Hydrology II
- GLY 325 Structure-Geophysics-Tectonics I and GLY 326 Structure-Geophysics-Tectonics II

GEOLOGICAL SCIENCES—MINOR

Acceptance Criteria
Minimum GPA of 2.0 in GLY 101 or GLY 103.

Required Courses
GLY 101 Global Environmental Science or GLY 103 Evolution of the Earth and Solar System
GLY 102 Global Environmental Science or GLY 104 Evolution of the Earth and Solar System
GLY 106 Geological Mapping Techniques
GLY 215 Soft Rock I: Sedimentology
GLY 216 Soft Rock II: Paleontology and Stratigraphy
GLY 312 Surface Processes and Hydrology I or GLY 325 Structure-Geophysics-Tectonics I
GLY 313 Surface Processes and Hydrology II or GLY 326 Structure-Geophysics-Tectonics II
GLY 407 Geological Field Training (recommended)

Summary

Total required credit hours for the minor 26

German

Department of Linguistics

College of Arts and Sciences

609 Baldy Hall
North Campus
Buffalo, NY 14260-1030
Phone: (716) 645-2177
Fax: (716) 645-3825
Web site: german.buffalo.edu

Karin Michelson
Chair

David Fertig
Program Director
fertig@buffalo.edu

Robert Hoeing
Director of Undergraduate Studies
rghoeing@buffalo.edu

For a listing of German course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

Note: See Professor Fertig for matters regarding first and second year language instruction; see Professor Hoeing for matters concerning the German major and minor.

About the Program

With more than 100 million speakers in Germany, Austria, Switzerland, and throughout the world, German is a major international language of business, diplomacy, science, and popular culture, with an extraordinarily rich heritage in literature, philosophy, and music.

Germany is the largest and wealthiest country in the European Union, and the importance of German in Europe continues to grow with the integration of Eastern European countries where German has always played an important role.

Degrees Offered

- **Undergraduate:** BA, Minor

Advisement

The German program offers a focused yet varied curriculum designed to provide students with the linguistic skills and cultural knowledge necessary for a BA degree. The program offers many options of study beyond elementary and intermediate language instruction, including courses in literature, linguistics, culture, and business German. Many students combine a major in German studies with another major, thus improving their chances for career opportunities in an increasingly international marketplace.

GERMAN—BA

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in the prerequisite courses or their equivalents.

Advising Notes
Minimum GPA of 2.0 in required courses.

Students may substitute three or four courses taken in other departments that are relevant to Germanic studies with the approval of the director of undergraduate studies in German.

Up to five 300/400-level courses (15 credit hours) may be taken through the study abroad program.

300-level courses require intermediate-level proficiency.

Prerequisite Courses
GER 101-GER 102 Elementary German 1st-2nd semester* or GER 104 Transitional Elementary German*
GER 151-GER 152 Intermediate German I-II*

Required Courses
Ten 300/400-level GER courses, in addition to prerequisite elementary or intermediate German language courses, as necessary*

Summary
Total required credit hours for the major 30

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—Elementary or intermediate German*
Spring—Elementary or intermediate German*

SECOND YEAR
Fall—Elementary or intermediate German*; one or two 300/400-level GER courses
Spring—Elementary or intermediate German*; one or two 300/400-level GER courses (on completion of GER 152)

THIRD YEAR
Fall—Two or three 300/400-level GER courses
Spring—Two or three 300/400-level GER courses

FOURTH YEAR
Fall—Two 300/400-level GER courses
Spring—Two 300/400-level GER courses

**Appropriate level is based upon placement and/or previous experience, unless exempted. For clarification, contact Professor Robert G. Hoeing at (716) 645-2177, ext. 739 or rghoeing@buffalo.edu; or Professor David Fertig at (716) 645-2177, ext. 738 or fertig@buffalo.edu.*

GERMAN—MINOR

Acceptance Criteria
Minimum GPA of 2.0 overall. Minimum GPA of 2.5 in the prerequisite courses or their equivalents.

Advising Notes
Substitutions are subject to approval by the director of undergraduate studies in German. 300-level courses require intermediate-level proficiency.

Prerequisite Courses
GER 101-GER 102 Elementary German 1st-2nd semester* or GER 104 Transitional Elementary German*
GER 151-GER 152 Intermediate German I-II*

Required Courses
Six 300/400-level GER courses with a minimum GPA of 2.0.

**Appropriate level is based upon placement and/or previous experience, unless exempted. For clarification, contact Professor Robert G. Hoeing at (716) 645-2177, ext. 739 or rghoeing@buffalo.edu; or Professor David Fertig at (716) 645-2177, ext. 738 or fertig@buffalo.edu.*

Summary
Total required credit hours for the minor 18

Global Gender Studies

Global Gender Studies

College of Arts and Sciences

North Campus
Buffalo, NY 14260-4600
Phone: (716) 645-2327
Fax: (716) 645-6569
Web site: womensstudies.buffalo.edu

Alexis DeVeaux
Director of Undergraduate Studies

Barbara Wejnert
Chair

For a listing of Global Gender Studies faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Global Gender Studies offers today's women and men courses in three areas: Cultures and Identities, Women and Global Citizenship, and Gender and Public Policy. The courses within each area recognize developing trends in studies of gender in Asia, Africa, the Caribbean, Latin America, Europe, and the United States. Our objective is to link local and global knowledge so as to prepare students with the capacity to link gender and history, literature and policy, and to be able to apply these to graduate work and practical employment.

Advisement

Students interested in pursuing a BA, joint major, or minor in Global Gender Studies must speak with the department's Director of Undergraduate Studies to discuss their interests in the department, as well as to plan their sequencing of courses to meet all criteria.

Degrees Offered

- **Undergraduate:** BA (Major, Double Major, and Joint Major), **Minor Areas:** Cultures and Identities, Gender and Public Policy, Women and Global Citizenship
- **Graduate:** MA, PhD through the Department of American Studies. **Note:** the application to offer MA and PhD degrees in Global Gender Studies through the Department of Global Gender Studies is currently pending.

Degree Options

Cultures and Identities. This area links examinations of culture, creativity, and popular media to broad perspectives on the discourses of difference (such as race, ethnicity, class, sexuality, subjectivity and geographic location) in the construction of women's identities. It recognizes the ways in which artifacts, practices and texts work to construct identity.

Women and Global Citizenship. This area exposes students to key areas of research and knowledge: the regional transnational mobilizations of women's labor, the alignment of women's movements with new postcolonial histories, international organizations, human disaster, international migration, world-wide democratization and gender, contemporary globalization and gender issues, and environmental issues. Students study individual's lives in the United States, East Asia, the Caribbean, and Africa and participate in our research agenda, which incorporates labor struggles, immigration, and women's engagement in national and transnational movements.

Gender and Public Policy. This area introduces Global Gender Studies students to new visions of policy intervention at the community, regional, and global levels of action. Students study the ways in which gender and social discourses help pattern social conflicts and their resolution, incarceration and war, and new ways of thinking about women's health and effective development and implementation of human rights.

GLOBAL GENDER STUDIES—BA

Acceptance Criteria
Minimum GPA of 2.0 overall.

Required Courses
Major and Double Major Requirements
Core Curriculum
WS 101 Introduction to Gender and Women's Studies
WS 205 Women in the Global System OR WS 241 Women in Developing Countries: Socio-economic and Political Perspectives
WS 228 Introduction to Feminist Theory
WS 330 Global Women's Voices OR WS 414 Contemporary Global and Gender Issues
WS 490 Senior Thesis OR WS 497 Department Honors Thesis OR WS 498 UG Research and Creative Activities

The Global Gender Studies Department offers courses across three inter-related areas. Students must complete one course in each of the three areas. Choose from the following:

CULTURES AND IDENTITIES
WS 265 Sexuality and Orientation
WS 308 Images of Women and Men in the Changing World
WS 379 Sex: Gender and Popular Culture
WS 415 Media and Gender

WOMEN AND GLOBAL CITIZENSHIP
WS 240 Women in Contemporary Asia
WS 247 Women in Latin America
WS 350 Gender Issues in Contemporary Africa
WS 421 Democracy and Gender
WS 425 Women's Movement
WS 466 Women Work and Social Change

GENDER AND PUBLIC POLICY
WS 225 Violence in a Gender World
WS 260 Women's Health: Problems and Practices
WS 353 Law Interprets Gender
WS 487 International Organizations, Gender and Development
Students are required to take an additional 12 credit hours of electives in the Department of Global Gender Studies. Students must get permission from the Director of Undergraduate Studies to substitute elective courses taken outside of the department. In addition, 15 of

(Continued on next page)

the 36 total credit hours needed for the GGS Major/Double Major must be upper-level (i.e., 300 or 400 level). These 15 credits may include courses taken in fulfillment of the major requirements.

Summary
Total required credit hours for the major 36

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Joint Major Requirements
Core Curriculum
WS 101 Introduction to Gender and Women's Studies
WS 205 Women in the Global System OR WS 241 Women in Developing Countries: Socio-economic and Political Perspectives
WS 228 Introduction to Feminist Theory
WS 330 Global Women's Voices OR WS 414 Contemporary Global and Gender Issues
One course from each area (Cultures and Identities, Women and Global Citizenship, and Gender and Public Policy) and one additional elective.

Summary
Total required credit hours for the joint major 24

See Baccalaureate Degree Requirements for general education and remaining university requirements.

GLOBAL GENDER STUDIES—MINOR

Acceptance Criteria
Minimum GPA of 2.0 overall.

Required Courses
WS 101 Introduction to Gender and Women's Studies
WS 205 Women in the Global System OR WS 241 Women in Developing Countries: Socio-economic and Political Perspectives
WS 228 Introduction to Feminist Theory
WS 330 Global Women's Voices OR WS 414 Contemporary Global and Gender Issues
Electives: Two additional Global Gender Studies courses required.

Summary
Total required credit hours for the minor 18

Health and Human Services

Office of Interdisciplinary Degree Programs

College of Arts and Sciences

203 Clemens Hall
North Campus
Buffalo, NY 14260-4670
Phone: (716) 645-2245
Fax: (716) 645-3640
Web site: cas.buffalo.edu/programs/idp/ugrad/
E-mail: dryden@buffalo.edu

Lee Dryden
Director

About the Program

Health and Human Services is one of six concentration areas in the Social Sciences Interdisciplinary major. It is an academic program designed for students interested in using an interdisciplinary approach to study health and human service delivery systems. Students focus their upper level coursework in early childhood studies, community mental health, or social gerontology. Each specialization features an internship or practicum. For more information please see the Social Sciences Interdisciplinary Degree Programs.

Social Gerontology: The field of aging is rewarding and expanding rapidly. Coursework in this area and two semesters of fieldwork provide students with the foundation needed for a wide variety of career options working with the elderly or for advanced studies in the field.

Community Mental Health: Coursework for this area surveys the diverse needs of mental health clients and numerous issues in the mental health field. During two semesters of fieldwork, students do internships in mental health agencies, interact with clients and learn about resources available to help these clients improve the quality of their lives.

Early Childhood: This area of study is ideal for students who are preparing for careers with children. Professional options include careers in such areas as social work, psychology, and education. The Social Sciences Interdisciplinary programs major in Health and Human Services/Early Childhood is one of the approved majors for acceptance to UB's Graduate School of Education for early childhood/childhood education.

Degrees Offered

- **Undergraduate:** BA in Social Sciences Interdisciplinary
- **Concentration:** Health and Human Services (Community Mental Health, Early Childhood, Social Gerontology)
- **Combined:** BA/MSW
- **Concentration:** Health and Human Services/Graduate School of Social Work

See Social Sciences Interdisciplinary for degree requirements.

Health and Wellness

Department of Social and Preventive Medicine

School of Public Health and Health Professions

405 Kimball Tower
South Campus
Buffalo, NY 14214
Phone: (716) 829-2941, ext. 238
Fax: (716) 829-2428
Web site: sphhp.buffalo.edu/spm/wellness

Dr. Jo Freudenheim
Chair

Mary Dedrick
Clinical Instructor

About the Program

The Health and Wellness minor is an interdisciplinary program that gives students a foundation in the concepts of health promotion and wellness education. Courses in the minor are offered through the departments of Social and Preventive Medicine, Exercise and Nutrition Sciences, Health Behavior, Psychology, Counseling and Educational Psychology, Student Affairs, and Nursing. The program will examine theories and research related to health promotion in order to provide a foundation in the concepts of healthy living and prepare students for careers in health and wellness. The Health and Wellness minor includes courses related to prevention, health maintenance and health education, within the context of health and wellness promotion for diverse populations. A variety of issues will be addressed, including obesity, tobacco use, sexual health, violence prevention, alcohol use, exercise and nutrition. The minor requires a practicum or internship experience to provide an opportunity for application of knowledge. These clinical experiences offer emphasis in the areas of: wellness in the campus environment, corporate or community health promotion.

Degrees Offered

- **Undergraduate:** Minor

Degree Options

Minor in Health and Wellness.

Advisement

Contact the Exercise & Nutrition Science department advisors ((716) 829-2941, ext. 238 or ext. 261) or School of Public Health and Health Professions advisors ((716) 829-3434, ext. 410 or ext. 287).

Acceptance Information

Applications are available online at: sphhp.buffalo.edu/spm/wellness
Application deadlines: Applications are accepted on an on-going basis. Enrollment to the minor may be limited (10-15 students/year).

Academic Requirements

A minimum GPA of 2.0 overall in required and elective courses must be maintained for successful completion of the minor.

HEALTH AND WELLNESS—MINOR

Acceptance Criteria

A minimum GPA of 2.5 overall is required for acceptance.

Advising Notes

Applications are accepted on an on-going basis. Applications are available online at: www.sphhp.buffalo.edu/spm/wellness.

Required Courses

ES 102 Fundamentals of Wellness
UBE 110 (Section WES) Introduction to Peer Education
ES 428 Health Promotion, Prevention & Wellness
UBE 496 (Section WE2) Special Projects in Wellness Promotion or ES 496 (Section CAD) Practicum
Three health and wellness electives

Summary

Total required credit hours for the minor 18-20

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—ES 102
Spring—UBE 110 (Section WES)

SECOND YEAR
Fall—UBE 496 (Section WE2) or ES 496 (Section CAD)
Spring—Elective

THIRD YEAR
Fall—ES 428 and elective
Spring—Elective

Electives and Course Groupings

CEP 401 Introduction to Counseling
CEP 404 Introduction to the Rehabilitation of Substance Abuse and Addiction
ES 200 Introduction to Human Movement* or NUR 102 Careers in the Health Sciences
NTR 402 Nutrition and the Lifecycle
PSY 322 Abnormal Psychology
PSY 325 Health Psychology
PSY 404 Alcohol and Health
PSY 438 Sport & Exercise Psychology
HB 527 Study of Health Behaviors** or
HB 528 The Public Health Practice of Tobacco Control** or
SPM 538 Community Health Assessment and Surveillance**
UBE 496 (Section WE1) Health & Wellness Peer Education
WS 323 Cultures of Biology, Medicine, Gender and Race

* *ES students must take a different elective*

** *Only one 500-level course can be taken for undergraduate credit*

History

Department of History

College of Arts and Sciences

546 Park Hall
North Campus
Buffalo, NY 14260-4130
Phone: (716) 645-2181
Fax: (716) 645-5954
Web site: www.cas.buffalo.edu/depts/history
E-mail: ubhistor@acsu.buffalo.edu

David Gerber
Chair

Erik R. Seeman
Director of Undergraduate Studies

For a listing of History faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

History explores how people have lived, thought, and tried to make sense of their worlds. It is cross-cultural and multidimensional, addressing the breadth of human experience and uncovering patterns that are essential in situating ourselves in the present and in preparing ourselves for the future. History deals with both continuity and change, examining, for example, what is novel and what is recurrent in human efforts to deal with such enduring matters as religion, ethnicity, class, and gender. The History department offers a wide array of courses, and stresses the development of research and communication skills, which are vital for many different careers.

History graduates work in such fields as business, law, government, and journalism, as well as in librarianship, archival and museum management, and teaching at all levels. They are trained to serve wherever careful reading, critical thinking, and clear writing are recognized assets.

Degrees Offered

- **Undergraduate:** BA, Minor
- **Graduate:** MA, PhD

Advisement

For more information, including current course descriptions, please drop by the office of the director of undergraduate studies at 540 Park Hall, visit us on the Web at http://www.cas.buffalo.edu/depts/history, call us at (716) 645-2181, ext. 540, or e-mail us at ubhistor@acsu.buffalo.edu. This office handles all advising of undergraduate students.

Transfer Policy

Transfer students majoring in history may receive credit for up to five history courses (15 credit hours) but must take five upper-level history courses, including the two 400-level seminars, at UB. Whenever possible, transfer courses are articulated with existing UB history courses. Acceptance criteria and all other requirements are the same as for regular majors.

HISTORY—BA

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum grade of C in two history courses.

Advising Notes

Minimum grade of C- required in any course to count toward graduation requirements.

A minimum GPA of 2.15 in history courses is required to graduate.

Prerequisite Courses

Any two history courses (with a minimum grade of C in both).

Required Courses

Twelve history courses (36 credit hours) distributed in accordance with the level and breadth requirements described below are required.
A minimum of five of those must be upper-division courses (300-400 level), including a minimum of two 400-level seminars.

Level and Breadth

To ensure a broad knowledge of history, all history majors must take at least one course, at any level, in each of the following areas:

a) Early or early modern history of any civilization to 1800
b) Asian, African continent, or Latin American history of any period
c) Modern European history since 1800
d) U.S. history of any period

1. World Civilization courses cannot be used to satisfy a breadth requirement, but may be used as part of the 36 required credit hours.
2. A course that seems to fall into two breadth areas may be used to satisfy the requirement of one. (For example, HIS 275 Vietnam and the Vietnam War may be counted under b or d above, but not both.).
3. Advanced Placement (with a score of 3 or better) and International Baccalaureate credit can fulfill breadth requirements, but will not count toward the 36 credit hours required for the major.

Note: There are no prerequisites for progression through the history major, but history students are encouraged to take lower introductory courses (e.g. HIS 182 Asian Civilizations) prior to taking upper-level courses (e.g. HIS 391 China and the World). Students in doubt about what courses to take are invited to consult with the director of the undergraduate program and/or with relevant faculty.

Summary

Total required credit hours for the major.....36

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—UGC 111*, HIS 161*
Spring—UGC 112*, HIS 162*

SECOND YEAR
Fall—One 100/200-level HIS course
Spring—One 200-level HIS course

THIRD YEAR
Fall—Two 300-level HIS courses
Spring—One 300-level HIS course, one 400-level HIS course

FOURTH YEAR
Fall—One 400-level HIS course
Spring—One 300-level HIS course

**Up to seven history courses at the 100/200 level (including World Civilizations) may be counted toward the major requirements. Recommended courses include HIS 111, HIS 142, HIS 151, HIS 152, HIS 161, HIS 162, and HIS 182. It is recommended that these courses be taken in either the first or second year.*

Concentrations

In selecting courses, majors may wish to focus on a particular age, area, or theme of particular interest to them.

HISTORY—MINOR

Acceptance Criteria
Minimum GPA of 2.0 overall.

Advising Notes
A minimum grade of C- is required in any course intended to count toward graduation requirements.

Only one World Civilization course (UGC 111 or UGC 112) may be used as part of the six required courses

Courses with grades of Satisfactory under the S/U option (designated by the student) or Pass under P/F option (designated by the student) are not acceptable in fulfillment of the course requirements for history majors.

Required Courses
18 credit hours (normally six, 3-credit courses) must be completed with a minimum grade of C- required in each course intended to count toward graduation requirements.

A minimum of 3 of these must be upper-division courses. (300-400 level)

Note: There are no prerequisites for progression through the history minor, but history students are encouraged to take lower introductory courses (e.g. HIS 182 Asian Civilizations) prior to taking upper-level courses (e.g. HIS 391 China and the World). Students in doubt about what courses to take are invited to consult with the director of the undergraduate program and/or with relevant faculty.

Up to three history courses at the 100/200 level (including World Civilizations) may be counted toward the minor requirements. Recommended courses include HIS 111, HIS 142, HIS 151, HIS 152, HIS 161, HIS 162, and HIS 182. It is recommended that these courses be taken in either the first or second year.

Summary

Total required credit hours for the minor 18

Humanities*

Department of Romance Languages and Literatures

College of Arts and Sciences

910 Clemens Hall
North Campus
Buffalo, NY 14260-4620
Phone: (716) 645-2191
Fax: (716) 645-5981
Web site: http://rll.buffalo.edu

Maureen Jameson
Chair
(716) 645-2191
jameson@buffalo.edu

**Not a baccalaureate degree program*

For a listing of Humanities course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The College of Arts and Sciences has developed a number of humanities courses designed to introduce students to literature and the arts, and to illustrate the interrelationship of the humanities and various other disciplines and professions, such as the natural and social sciences, law, medicine, and engineering. Some of the courses are team-taught by faculty in the College of Arts and Sciences. These courses are designed to be of interest to majors in a wide variety of disciplines.

Industrial Engineering

Department of Industrial and Systems Engineering

School of Engineering and Applied Sciences

438 Bell Hall
North Campus
Buffalo, NY 14260-2050
Phone: (716) 645-2357
Fax: (716) 645-3302
Web site: www.ie.buffalo.edu

Rakesh Nagi
Chair

Ann Bisantz
Director of Undergraduate Studies

For a listing of Industrial Engineering faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Industrial and Systems Engineering (ISE) department at UB offers a full range of undergraduate and graduate programs in industrial and systems engineering, including an accredited bachelor of science degree in Industrial Engineering (BSIE).

Graduates from UB's BSIE program will achieve the following professional goals:

- Think critically and creatively to identify, define, and solve important and relevant industrial engineering problems through careers in industry, government, and academia
- Engage in life-long learning through professional development and further graduate education
- Function effectively, at all levels of an organization, in settings that are diverse, global and multi-disciplinary
- Communicate effectively to diverse audiences, through all appropriate formats
- Promote the Industrial Engineering profession through participation in outreach, civic, educational, or professional society activities.

Industrial engineers apply knowledge from mathematical, physical, information and human sciences to study, design and improve systems which combine people, computers, automation, transportation, energy, and information. A BS degree in industrial engineering from UB leads to fascinating careers in industries as diverse as airline operations, automotive manufacturing, health services, military operations, and financial services. IE graduates have maximum flexibility to pursue their goals for advancement in management as well as systems design.

At UB, students are taught by award-winning faculty, and can learn about and participate in cutting-edge research in areas such as biomedical prototyping, human-computer interaction, design for disabled individuals, hazardous materials routing, aviation safety and security, and data mining.

IEs are well suited to solve modern management problems, using sophisticated quantitative analysis, and dealing with highly technical issues. With the rapid infusion of computer technology into manufacturing processes and service systems, coupled with the demand for higher product quality in a competitive marketplace, IEs are in a special position to tackle many corporate challenges.

All undergraduate IE students are required to complete a faculty supervised, industry based internship or co-op—we make sure students have the job skills they will need.

At our departmental Web site, http://www.ie.buffalo.edu, there is a complete description of the department, profiles of current students and faculty, and exciting news and events about the students, faculty, and research programs in IE.

Degrees Offered

- **Undergraduate:** BS
- **Combined:** BS/MBA, BS/MEng, BS/MS
- **Graduate:** MS, MEng, PhD
- **Special Programs:** Six Sigma Certification is available with completion of additional work experiences and examinations (see department Web site for details).

Advisement

Interested students are encouraged to seek advice on course registration from the engineering advisors in Bonner Hall, or from the IE Director of Undergraduate Studies, Dr. Ann Bisantz (bisantz@buffalo.edu). Once admitted to the IE major, all students are assigned a faculty advisor.

Acceptance Information

Students admitted to the School of Engineering and Applied Sciences may select IE as a major (current students in SEAS must be in good standing to transfer to IE). See the School of Engineering and Applied Sciences Acceptance Information

Transfer Policy

Transfer students must first apply to the university and meet the university transfer admission requirements. For admission of transfer students to engineering, see the School of Engineering and Applied Sciences Transfer Policy

INDUSTRIAL ENGINEERING—BS

Acceptance Criteria

See the School of Engineering and Applied Sciences Acceptance Information.

Note: Please see the School of Engineering and Applied Sciences entry in this catalog for additional requirements.

Advising Notes

Students must meet minimum GPA requirements in engineering as specified by the Dean of Engineering to graduate from the program. See School of Engineering and Applied Sciences Academic Requirements

Required Courses

Basic science elective (CHE 108, PHY 207, BIO 200 or BIO 201)
CHE 107 General Chemistry for Engineers
EAS 140 Engineering Solutions
EAS 207 Statics
EAS 208 Dynamics or EAS 209 Mechanics of Solids
EAS 230 Higher-Level Language
EAS 305 Applied Probability
IE 306 Statistical Methods for Engineering
IE 320 Engineering Economy
IE 323 Ergonomics
IE 326 Planning for Production
IE 327 Facilities Design
IE 373 Introduction to Operations Research: Deterministic Models
IE 374 Introduction to Operations Research: Probabilistic Models
IE 408 Quality Assurance
IE 420 Industrial and Systems Laboratory
IE 477 Digital Simulation
IE 496 Industrial Engineering Internship
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
MTH 309 Linear Algebra
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 Physics II Lab
One engineering science elective; must be chosen from EE 200, EAS 204, EAS 209 (if EAS 208 is taken), or EE 202.
One free elective
Five technical electives (three must be IE courses including one of either IE 441 or IE 435; other choices are restricted to those approved by the department)

Summary

Total required credit hours for the major.....114

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 107, EAS 140, MTH 141
Spring—MTH 142, PHY 107, basic science elective; IE 101 (optional)

SECOND YEAR
Fall—EAS 207, EAS 230, MTH 241, PHY 108, PHY 158
Spring—EAS 208 or EAS 209; IE 320, MTH 306, one engineering science elective

THIRD YEAR
Fall—EAS 305, MTH 309, IE 326, IE 323
Spring—IE 306, IE 373, IE 327, IE 374

FOURTH YEAR
Fall—IE 420, IE 477, 3 technical electives
Spring—IE 408, IE 496, 2 technical electives, 1 free elective

Electives and Course Groupings

Five technical electives are required (three must be IE courses including one of either IE 441 or IE 435; other choices are restricted to those approved by the department).

Other technical electives (TEs) may be drawn from 400 level electives from the Industrial and Systems Engineering Department, 300/400/500-level courses offered by other engineering departments or approved departments in the College of Arts and Sciences or in the School of Medicine and Biomedical Sciences (see the IE director of undergraduate studies for details on departments meeting this criterion). Note that electives which substantively duplicate coursework required for the IE degree, or other electives taken, can NOT be applied to the degree. (Generally, for instance, this precludes using EAS 308 or similar courses for a TE).

Technical electives may also be selected from the list below. **

(Note: Limited space may be available for nonmajors in many of the following courses.)
CSE 114 Introduction to Computer Science II
CSE 241 Digital Systems
CSE 250 Algorithms and Data Structures
EAS 480 Technical Communication or EAS 483 Engineering Procedure Writing (both may not be applied)
ECO 405 Microeconomic Theory
ECO 406 Topics in Microeconomic Theory
ECO 407 Macroeconomic Theory
MGA 201 Introduction to Accounting 1
MGA 202 Introduction to Accounting 2
PSY 333 Psychology of Work in Organizations
PSY 341 Cognitive Psychology
PSY 342 Cognitive Science
PSY 343 Sensory Processes and Perception
Some 300/400-level management school courses (with approval of the IE Director of Undergraduate Studies)

***Additional courses in management, economics, and psychology may be applied; please see the IE department for additional information and explicit permission to use the course for a technical elective.*

INDUSTRIAL ENGINEERING/BUSINESS ADMINISTRATION—BS/MBA

Acceptance Criteria

Good standing as an industrial engineering student and acceptance as a graduate student by the School of Management.

Advising Notes

Students apply directly to the management school during their junior year to be admitted to the MBA program. The MBA courses listed below are representative of those that have been required but may change prior to a students' acceptance into the MBA program. Students should confirm MBA program requirements upon their application and acceptance to that program directly with the School of Management.

Required Courses

Basic science elective (CHE 108, PHY 207, BIO 200 or BIO 201)
CHE 107 General Chemistry for Engineers
EAS 140 Engineering Solutions
EAS 207 Statics
EAS 208 Dynamics or EAS 209 Mechanics of Solids
EAS 230 Higher-Level Language
EAS 305 Applied Probability
IE 306 Statistical Methods for Engineers
IE 320 Engineering Economy
IE 323 Ergonomics
IE 326 Planning for Production
IE 327 Facilities Design
IE 373 Introduction to Operations Research: Deterministic Models
IE 374 Introduction to Operations Research: Probabilistic Models
IE 408 Quality Assurance
IE 420 Industrial and Systems Laboratory
IE 477 Digital Simulation
IE 496 Industrial Engineering Internship
MGA 604 Introduction to Financial Accounting
MGA 609 Management Accounting
MGB 601 Behavioral and Organizational Concepts for Management
MGE 601 Economics for Managers
MGF 631 Financial Management
MGG 635 Business Communications
MGM 625 Marketing Management
MGO 630 Operations and Service Management
MGO 641 Strategic Management
MGT 601 Ethics & Corporate Finance
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
MTH 309 Linear Algebra
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 Physics II Lab
One engineering science elective; must be chosen from EE 200, EE 202, EAS 204, or EAS 209 (if EAS 208 is taken)
One free elective
Two IE technical electives (selected from the IE department), including one from IE 435 or IE 441
Six MBA electives
One MBA Practicum

Summary

Total required credit hours for IE portion of the degree 114

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the School of Management's handbook for requirements for MBA candidates.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 107, EAS 140, MTH 141
Spring—MTH 142, PHY 107, basic science elective; IE 101 (optional)

SECOND YEAR
Fall—EAS 207, EAS 230, MTH 241, PHY 108, PHY 158
Spring—EAS 208 or EAS 209; IE 320, MTH 306, one engineering science elective

THIRD YEAR
Fall—EAS 305, MTH 309, IE 326, IE 323
Spring—IE 306, IE 373, IE 327, IE 374

FOURTH YEAR
Fall—IE 477, MGA 604, MGB 601, MGE 601, MGT 601, MGF 631, IE technical elective
Spring—MGS 641, MGM 625, MGS 630, MGF 631, MGG 635, IE 408
Summer—Students can lighten their course load by taking a technical or MBA elective.

FIFTH YEAR
Fall—IE 420, IE technical elective; three MBA electives, MBA Practicum
Spring—MGA 609, three MBA electives, IE 496

Contact School of Management for flex core course and elective options.

Note: It may be possible to take an MBA elective to the spring semester, in order to take an IE elective in the fall semester. Students should consult with MBA and IE advisors in choosing their electives if there are any questions.

Upon completion of undergraduate program requirements and all management requirements,the BS/MBA is conferred at the end of the fifth year.

Informatics

Informatics Program

College of Arts and Sciences

354 Baldy Hall
North Campus
Buffalo, NY 14260
Phone: (716) 645-6481
Fax: (716) 645-3775
Web site: www.cas.buffalo.edu/informatics

Logan Scott
Director, Undergraduate Program

For a listing of Informatics course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Informatics program is an interdisciplinary study of the design, application, and use of information and communication technologies (ICTs). It goes beyond purely technical aspects to provide a human-centered perspective, which takes into account the social, organizational, and cultural contexts of ICT design and use.

Degrees Offered

- **Undergraduate:** BS
- **Graduate:** MA

Advisement

All prospective majors and accepted majors are expected to seek ongoing advisement regarding their informatics curriculum. Prospective majors are encouraged to contact the Informatics academic advisor at the College of Arts and Sciences Student Advisement and Services (CASSAS) office as soon as possible for initial advisement and explanation of the curriculum and degree requirements. An appointment can be made by visiting the CASSAS office in 275 Park Hall, by calling 645-6883 or by emailing casadvisor@buffalo.edu. Accepted and intended majors are encouraged to seek academic advisement once each semester concerning their progress in the program.

INFORMATICS—BS

Acceptance Criteria

Students must earn a GPA of 2.5 or better in each of the 3 prerequisite courses before full acceptance into the major. A minimum GPA of 2.5 in UB Informatics courses is required for graduation. Minors and/or joint majors are encouraged (see the Program Director).

Prerequisite Courses

INF 102 Introduction to Informatics
INF 125 Intro to the Internet as an Informatics Resource
INF 215 Programming for the Web I

Required Courses

COM 217 Communication in Organizations
INF 216 Programming for the Web 2
INF 223 Usability Research
INF 311 Information Architecture
INF 410 Information Visualization
INF 420 Cognitive Principles of Human-Computer Interaction
INF 430 Applied Informatics Research
INF 494 Informatics Capstone
Two 3-Cr courses (at the 300 level or above, with the exception of Special Topics courses) in Informatics or an Informatics related field e.g. INF 496 Internship.
Two ART or DMS courses in Visual Communication/Human-Computer Interface Development e.g. ART 150 Visual Theory, Aesthetics, And Criticism; ART 250 Introduction To Computer Art And Design; DMS 155 Introduction to New Media.
One writing course (choose from the following):
- COM 317 Business & Professional Communication
- ENG 202 Adv Writing: Technical

One statistics course (choose from the following):
- MGQ 201 Intro To Computer & Stats
- PSY 207 Psychological Statistics
- SOC 294 Basic Statistics for Social Sciences

One research methods course (choose from the following):
- COM 205 Research Methods
- PSC 200 Empirical Political Science
- PSY 250 Scientific Inquiry
- SOC 293 Introduction to Research Methods
- SSC 213 Social Research Methods

One introductory or higher-level computer course such as:
- CSE 111 Great Ideas in Computer Science
- CSE 113 Introduction to Computer Science I

Four social science courses, including:
- COM 101 Principles of Communication
- PSY 101 Introduction to Psychology
- SOC 101 Introduction to Sociology
- AND any one of the following:
- COM 225 Interpersonal Communication
- PSY 331 Social Psychology
- PSY 333 Organizational Psychology
- PSY 323 Community Psychology
- PSY 341 Cognitive Psychology
- SOC 371 Individual and Society

Summary

Total required credit hours for the major.....69

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—INF 102
Spring—INF 125, PSY 101
Fall or Spring—one computer course, COM 101

SECOND YEAR
Fall—INF 215, two social science courses, one statistics course
Spring—INF 216, INF 223
Fall or Spring—one research methods course, one statistics course, one ART or DMS course

THIRD YEAR
Fall—INF 311
Spring—COM 217
Fall or Spring—one technical or professional writing course, one ART or DMS course, two INF or related field electives

FOURTH YEAR
Fall—INF 420, INF 430
Spring—INF 410, INF 494

International Studies

Office of Interdisciplinary Degree Programs

College of Arts and Sciences

203 Clemens Hall
North Campus
Buffalo, NY 14260-4670
Phone: (716) 645-2245
Fax: (716) 645-3640
Web site: cas.buffalo.edu/programs/idp/ugrad/
E-mail: dryden@buffalo.edu

Lee Dryden
Director

About the Program

International Studies is one of six concentration areas in the Social Sciences Interdisciplinary major. It combines the study of international politics, history, and culture with advanced study in a foreign language. Study abroad is encouraged. For more information please see the Social Sciences Interdisciplinary Degree Programs.

Degrees Offered

- **Undergraduate:** BA in Social Sciences Interdisciplinary
- **Concentration:** International Studies

See Social Sciences Interdisciplinary for degree requirements

Italian

Department of Romance Languages and Literatures

College of Arts and Sciences

910 Clemens Hall
North Campus
Buffalo, NY 14260-4620
Phone: (716) 645-2191
Fax: (716) 645-5981
Web site: rll.buffalo.edu
E-mail: rll-info@buffalo.edu

Maureen Jameson
Chair
Jameson@buffalo.edu

Collen Culleton
Director of Undergraduate Studies and Language Program Director
(716) 645.2191, ext. 1181
culleton@buffalo.edu

For a listing of Italian course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Italian is spoken by more than 60 million people, mainly in Italy but also in Switzerland where it is one of the four official languages (Canton Ticino). Italian is also spoken by the large Italian communities in the United States, Canada, Germany, Australia, and South America (specifically in Argentina and in the south of Brazil where almost half of the population is of Italian origin). Our program develops an appreciation of world cultures through the study of language, literature, and film.

Students who study Italian at the advanced level acquire language proficiency, explore various aspects of Italian culture, and obtain knowledge of Italian literature.

Degrees Offered

- **Undergraduate:** BA, Minor

Degree Options

The major program leads to a BA in Italian. The Italian program also offers a four-course minor.

Students frequently combine a program in Italian with concentrations in other humanities programs, such as another language or history. Others concentrate in unrelated fields, such as management or science. Requirements for Italian as part of a joint major include acceptance as an Italian major and completion of five courses at the 300-400 level.

Advisement

Please contact Dr. Emanuele Licastro (716-645-2191, ext. 1170; licastro@buffalo.edu) for advising and any questions regarding Italian courses or the Italian program.

Academic Requirements

Students who choose to major in Italian take eight courses at the 300-400 level.

The department strongly encourages Italian majors to study art history, music, history, English, classics, and women's studies.

ITALIAN—BA

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in the prerequisite courses.

Advising Notes
ITA 152 or its equivalent is required for admission into the major.

Students are advised to learn a second foreign language and to take electives in such relevant fields as art, history, music, and philosophy. Electives may also be used to arrange joint or double-major programs.

Prerequisite Courses
ITA 101 Elementary Italian 1st Semester*
ITA 102 Elementary Italian 2nd Semester*
ITA 151 Intermediate Italian 1st Semester*
ITA 152 Intermediate Italian 2nd Semester*

Required Courses
ITA 321 Advanced Italian Grammar, Composition, and Conversation I
ITA 322 Advanced Italian Grammar, Composition, and Conversation II
Six additional 400-level electives

Summary
Total required credit hours for the major.....24

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—ITA 101*
Spring—ITA 102*

SECOND YEAR
Fall—ITA 151*
Spring—ITA 152*

THIRD YEAR
Fall—ITA 321, one 400-level course
Spring—ITA 322, one 400-level course

FOURTH YEAR
Fall—Two 400-level courses
Spring—Two 400-level courses

**Appropriate level is based on placement and/or previous experience, unless exempted. For clarification, contact Professor Emanuele Licastro at (716) 645-2191, ext. 1170, or licastro@buffalo.edu.*

ITALIAN—MINOR

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in the prerequisite courses.

Prerequisite Courses
ITA 101 Elementary Italian 1st Semester*
ITA 102 Elementary Italian 2nd Semester*
ITA 151 Intermediate Italian 1st Semester*
ITA 152 Intermediate Italian 2nd Semester*

Required Courses
ITA 321 Advanced Italian Grammar, Composition & Conversation I
ITA 322 Advanced Italian Grammar, Composition & Conversation II
Two 400-level ITA courses

**Unless exempted. For clarification contact Professor Emanuele Licastro at (716) 645-2191, ext. 1170, or licastro@buffalo.edu.*

Summary

Total required credit hours for the minor 12

Japanese**

Department of Linguistics

College of Arts and Sciences

609 Baldy Hall
North Campus
Buffalo, NY 14260-1030
Phone: (716) 645-2177
Fax: (716) 645-3825
Web site: japanese.buffalo.edu

Karin Michelson
Chair

Mitsuaki Shimojo
Program Director
shimojo@buffalo.edu

***This area of study is available as a special major through the College of Arts and Sciences. It is not a separately registered degree program. Refer to the Special Majors section (http://undergrad-catalog.buffalo.edu/academicprograms/spma.shtml) for more information. For information on the minor, contact the department.*

For a listing of Japanese course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

While English continues to be the primary language for international communication, the Japanese language is acquiring status as a major foreign language, particularly for those who aspire to pursue relationships with East Asia as well as Japan. The Japanese language is spoken by the entire population of Japan—about 125 million—and ranks sixth among the languages of the world in terms of the number of native speakers. It is also studied widely as a foreign language in East Asia. Contrary to a common belief that asserts the uniqueness of the Japanese language, it is a very typical human language with respect to grammatical structure.

The Japanese curriculum provides a solid foundation for an understanding and appreciation of the rich and diverse culture of Japan. The language, culture, linguistics, and pedagogy courses offered are useful to students who aspire to an East Asia-related academic or professional career in education, government, communications, or business, as well as in other fields in the United States and abroad.

The curriculum of the Japanese program includes:

- Courses designed to develop or improve competence in spoken and written Japanese through the advanced level
- Courses on Japanese culture, linguistics and pedagogy
- Courses that examine Japanese business culture and vocabulary

Degrees Offered

- **Undergraduate:** Minor

Degree Options

Many students opt to combine a minor in Japanese with a major in social sciences, engineering, the humanities, the sciences, or management. A special major in Japanese studies can be arranged in consultation with the program director and the director of special majors (in the College of Arts and Sciences Student Advisement and Services office). Students interested in Japanese linguistics may want to pursue a special major in language and linguistics with a concentration in Japanese. For more information, contact the program director, Mitsuaki Shimojo, in the Department of Linguistics, (716) 645-2177.

Advisement

Students with advanced Japanese proficiency should consult with the program advisor to arrange an appropriate program.

JAPANESE—MINOR

Acceptance Criteria
Minimum GPA of 2.0 in prerequisite and required courses.

Advising Note
Application should be made after the prerequisite courses have been completed or during the semester in which they are completed.

Students with advanced Japanese language proficiency should consult with the program director to arrange an appropriate program.

Prerequisite Courses
JPN 101 First-year Japanese (or equivalent proficiency)
JPN 102 First-year Japanese (or equivalent proficiency)

Required Courses
JPN 201 Second-year Japanese
JPN 202 Second-year Japanese
JPN 301 Third-year Japanese
JPN 302 Third-year Japanese
Two Japan-related or Japanese language courses, which may include one course from another department.

Journalism Certificate Program*

Journalism—Department of Communication

College of Arts and Sciences

359 Baldy Hall
North Campus
Buffalo, NY 14260-1060
Phone: (716) 645-2086
Web site: www.informatics.buffalo.edu

Journalism—Department of English

College of Arts and Sciences

306 Clemens Hall
North Campus
Buffalo, NY 14260-4610
Phone: (716) 645-2575
Fax: (716) 645-5980
Web site: www.cas.buffalo.edu

Journalism—Department of Media Study

College of Arts and Sciences

231 Center for the Arts
North Campus
Buffalo, NY 14260-6020
Phone: (716) 645-6902
Fax: (716) 645-6979
Web site: wings.buffalo.edu/mediastudy

Journalism Certificate Program

321 Clemens Hall
North Campus
Buffalo, NY 14260-4610
Phone: (716) 6450-2575, ext. 1007
Fax: (716) 645-5980
E-mail: ub-journalism@buffalo.edu

Professor Dimitri Anastasopoulos

Dr. Charity Vogel and Andrew Galarneau
Co-Directors

**Not a baccalaureate degree program*

About the Program

Today's media recruiters want candidates with more than solid reporting and story-writing skills. They want applicants with specialized knowledge in complicated subject areas—plus the ability to delve into those areas and provide meaningful analysis and contexts for readers and viewers.

The journalism certificate program at UB provides students with an educational foundation in writing and reporting for publication, emphasizing hands-on workshops and internships designed to help students enter the professional world. Classes concentrate on journalistic skills including feature writing, news reporting, and opinion writing.

In addition, the program fosters an understanding of U.S. and global media, journalism ethics, and integrity standards associated with the journalism profession. It is an interdisciplinary course of study comprised of core coursework offered by the Departments of English, Communication, and Media Study. The certificate should be viewed as an accompaniment to a student's major course of studies.

The journalism certificate is not a baccalaureate degree program. It's designed to help students master the tools of journalism while offering the freedom to concentrate on a variety of knowledge areas—putting students on the right track to succeed in the professional media world.

Degrees Offered

This is not a degree program. Being awarded the Journalism Certificate is contingent upon successful completion of an undergraduate degree program at UB. The Journalism Certificate must be completed concurrently with the student's undergraduate degree program.

Degree Options

Certificate in Journalism.

Note: The certificate is awarded upon completion of all program requirements and completion of a bachelor's degree at the University at Buffalo.

Advisement

Students interested in the Journalism Certificate Program should seek advisement on course selection from Professor Dimitri Anastasopoulos or the directors of the program, Dr. Charity Vogel or Andrew Galarneau, English Department, 321 Clemens Hall.

A minimum GPA of 2.5 overall, and a minimum of 2.5 in all electives and core courses within the program, are required to earn the certificate.

JOURNALISM CERTIFICATE PROGRAM—CERTIFICATE

Acceptance Criteria

Minimum GPA of 2.5 overall.
Completion of the certificate program prerequisites, with a minimum GPA of 2.5.

Advising Notes

Students must maintain a minimum GPA of 2.5 overall in required and elective Certificate courses in order to remain in the program.

Prerequisite Courses

ENG 101 Writing 1 and ENG 201 Advanced Writing, or ENG 102 Writing 2, as placed, unless exempted
ENG 193 Fundamentals of Journalism

Required Courses

Students may take one of two tracks:

I. THROUGH ENGLISH AND MEDIA STUDY

DMS 259 Introduction to Media Analysis
ENG 393 Ethics in Journalism
ENG 398/ENG 399 Journalism (several areas of focus are available; see directors for advisement.)
Two internship courses (at student media on campus, other opportunities on campus or off campus, as approved by certificate directors): Choose from: ENG 395/ENG 396 Writing Workshop or ENG 496 Writing Internship
Electives (two courses): to be selected from the list below or in consultation with the program advisor.
Recommended electives: New Journalism, Literary Journalism, Social Web Media (DMS), Advanced Writing Non-Fiction and appropriate courses in English, Media Study, Communication, or subject areas useful to journalism.

II. THROUGH COMMUNICATION

COM 101 Principles of Communication
COM 240 Survey of Mass Communications
COM 353 Communication Ethics
COM 398 Journalism
COM 496 Internship in Communication (two semesters; Fall and Spring)
Electives (two courses): to be selected from the list below or in consultation with the program advisor.
Recommended electives: New Journalism, Literary Journalism, Social Web Media (DMS), Advanced Writing Non-Fiction and appropriate courses in English, Media Study, Communication, or subject areas useful to journalism.

Summary

Total required credit hours for the certificate 31-33

Note: The certificate is awarded upon completion of all program requirements and completion of a bachelor's degree at the University at Buffalo.

Judaic Studies**

Department of Classics

College of Arts and Sciences

338 Millard Fillmore Academic Center
Ellicott Complex
North Campus
Buffalo, NY 14261-0026
Phone: (716) 645-2154, ext. 108
Fax: (716) 645-2225
Web site: www.classics.buffalo.edu

Samuel M. Paley
Director

***This area of study is available as a special major or minor through the College of Arts and Sciences. It is not a separately registered degree program. Refer to the Special Majors section for more information.*

For a listing of Judaic Studies course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Judaic studies provides undergraduate students with a comprehensive view of the development of Jewish life since its beginning 3,300 years ago. The courses explore the history, culture, and accomplishments of world Jewry in particular, while seeking in general to discover how a religion can survive for more than three millennia. Because the experience of the Jews has spanned many cultures, students must develop interdisciplinary tools for analyzing Jewish lifestyles, both ancient and modern, while pursuing this major.

The interdisciplinary nature of Judaic studies, and the fact that it is currently available as a special major, means that creative, motivated students can develop an individualized course of study to suit their own needs and interests. The Special Major Committee must approve a special major in Judaic studies.

Degree Options

A minimum of twelve courses is required to fulfill this major, half of which must be in one of the subject areas.

Korean*

Department of Linguistics

College of Arts and Sciences

609 Baldy Hall
North Campus
Buffalo, NY 14260-1030
Phone: (716) 645-2177
Fax: (716) 645-3825
Web site: korean.buffalo.edu

Karin Michelson
Chair

EunHee Lee
Program Director

**Not a baccalaureate degree program*

For a listing of Korean course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

North and South Korea have a combined population of 68 million. Except for a small Chinese minority in South Korea, most of the people are ethnic Koreans, making Korea one of the most homogeneous countries in the world. The Korean language plays an important role in the identity of the Korean people. Korean is spoken in both North and South Korea and is written in Hangul, a phonetic alphabet created in 1446. South Korea has experienced rapid economic growth and development and is considered an Asian economic powerhouse.

The Korean curriculum provides a solid foundation for an understanding and appreciation of the rich culture of Korea. The language and culture courses offered are useful to students who aspire to an East Asia-related academic or professional career in education, government, communications, or business, as well as in other fields in the United States or abroad.

The curriculum of the Korean program includes:

- Courses designed to develop or improve competence in written and spoken Korean through the advanced level
- Courses on Korean culture (taught in English)
- Courses for the advanced study of Korean literature (taught in English)
- Courses that examine Korean language teaching, and Korean linguistics

Degrees Offered

- **Undergraduate:** Minor
- **Special Major:** For students who want to further their studies in East Asian languages, a special major in Chinese, Japanese, or Korean can be arranged in consultation with the Language Program director and Special Major Services (275 Park Hall). For more information, see Special Major Services.

Advisement

The Korean language program offers three years of classroom instruction, from elementary Korean to advanced Korean. There are also courses in literature, culture, linguistics, and Korean pedagogy. Students interested in a career that combines Korean and another field may choose a special major in Korean, which can be arranged in consultation with the program coordinator and the undergraduate advising office.

Students with advanced Korean proficiency should consult with the program advisor to arrange an appropriate program.

KOREAN—MINOR

Acceptance Criteria
Minimum GPA of 2.0 in prerequisite courses.

Advising Notes
Application should be made after completion of the prerequisite courses or during the semester in which they are completed.

Minimum GPA of 2.0 in required courses is necessary to earn the minor.

Students with advanced Korean proficiency should consult with the program advisor to arrange appropriate program.

Prerequisite Courses
KOR 101-KOR 102 Elementary Korean I-II (or equivalent proficiency)

Required Courses
KOR 201 Intermediate Korean I
KOR 202 Intermediate Korean II
KOR 301 Third-year Korean I
KOR 302 Third-year Korean II
Two Korea-related or Korean language courses, which may include one course from another department.

Latina/Latino Studies*

Department of Romance Languages and Literatures

College of Arts and Sciences

910 Clemens Hall
North Campus
Buffalo, NY 14260-4620
Phone: (716) 645-2191
Fax: (716) 645-5981
Web site: http://rll.buffalo.edu
E-mail: rll-info@buffalo.edu

Maureen Jameson
Chair

Ramón E. Soto-Crespo
Program Director
(716) 645-2191, ext. 1199
rs55@buffalo.edu

**Not a baccalaureate degree program*

For a listing of Latina/Latino course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Latina/Latino studies is an interdisciplinary program, comprising courses that focus on various aspects of the U.S. Latina/Latino, as well as the Latin American, experience.

The term Latino is inclusive of the diverse Hispanic communities in the United States, such as Chicano, Puerto Rican, Dominican, and others. The program offers an interdisciplinary minor. The course of study combines its Latino courses with offerings from history, sociology, philosophy, anthropology, literature, and language.

Degrees Offered

- **Undergraduate:** Minor

Advisement

Please contact Dr. Soto-Crespo (716-645-2191, ext. 1199; rs55@buffalo.edu) for advising.

LATINA/LATINO STUDIES—MINOR

Acceptance Criteria
Consultation with the director of the Latina/Latino Studies program and completion of a formal application.
Completion of the prerequisite courses.

Advising Notes
A minimum GPA of 2.0 in all courses that count toward the minor in Latina/Latino studies is required.

No more than two courses, used to satisfy the requirements of another major/minor, can be used to also satisfy the requirements of a minor in Latina/Latino studies.

The courses listed are offered on a regular basis to enable students to complete a minor in a timely fashion.

Prerequisite Courses
ENG 277 Introduction to U.S. Latino Literature or LLS 204 Introduction to Puerto Rican Culture

Required Courses

ONE LOWER-DIVISION COURSE*
APY 283 Peasant Societies and Cultures
LLS 200 Black Roots in Spanish American Literature
LLS 204 Introduction to Puerto Rican Culture
LLS 208 Twentieth-Century Puerto Rican Literature
SPA 241 Spanish for Bilinguals
WS 219 Women of Color and the American Experience
WS 247 Women in Latin America

FOUR UPPER-DIVISION COURSES*
APY 331 Archaeology of the New World
HIS 322 Latin America: Culture and History
HIS 414 Cuban Revolution
HMN 321 Youth Culture in Latin America
HMN 453 Mexican American Anthology
LLS 301 Ethnicity and the Puerto Rican Experience
LLS 303 Mainland Puerto Rican Experiences
LLS 305 Contemporary Afro-Caribbean Religion
LLS 307 History of Ideas in Puerto Rico
LLS 308 Black Presence in Latin America
LLS 401 Seminar in Puerto Rican Studies
LLS 402 Puerto Rican Literature
LLS 404 Havana: City and Culture
PHI 356 Latino-Hispanic Thought
PHI 385 Latin American Thought
PSC329 U.S. Latin American Relations
PSC 372 Latin American Politics
SPA 320 Contemporary Spanish American Literature
SPA 328 Spanish American Culture and Civilization
SPA 330 Spanish American Themes
SPA 360 Spanish American Literature in Translation
SPA 416 Spanish American Theatre
SPA 449 Special Topics I (with a Latina/Latino component)
TH 411 Theatre Workshop (with a Latina/Latino component)
WS 315 Cross-Cultural Study of Women (with a Latina/Latino component)

**Courses with appropriate content may be substituted with permission of the program director.*

Summary
Total required credit hours for the minor 18

Learning Center

Thomas J. Edwards Learning Center

217 Baldy Hall
North Campus
Buffalo, NY 14260-1000
Phone: (716) 645-2394
Fax: (716) 645-6143
Web site: tlc.buffalo.edu
E-mail: ulc-learningcenter@buffalo.edu

Javier Bustillos
Director

**Not a baccalaureate degree program*

For a listing of Learning Center course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Thomas J. Edwards Learning Center offers students an opportunity to develop their learning skills through credit-bearing courses in the areas of reading, writing, and mathematics. Instructors trained in their particular areas present courses in a personalized atmosphere enhanced by tutorial assistance.

Learning Center courses are open to any undergraduate student enrolled in the university. While the center is not a degree-awarding program, it does offer courses that carry regular academic credit.

Legal Studies

Office of Interdisciplinary Degree Programs

College of Arts and Sciences

203 Clemens Hall
North Campus
Buffalo, NY 14260-4670
Phone: (716) 645-2245
Fax: (716) 645-3640
Web site: cas.buffalo.edu/programs/idp/ugrad/
E-mail: dryden@buffalo.edu

Lee Dryden
Director

University at Buffalo Law School

304 O'Brian Hall
North Campus
Buffalo, NY 14260
Phone: (716) 645-2060
Fax: (716) 645-6378
Web site: www.law.buffalo.edu/site/index.html

For a listing of Legal Studies course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Legal Studies is one of six concentration areas in the Social Sciences Interdisciplinary major. The major is designed for students who are interested in studying the political, social and philosophical development of law and the legal process and in examining the law as an instrument of social order and a means of social change. The major has an academic rather than vocational emphasis. For more information please see the Social Sciences Interdisciplinary Degree Programs.

The School of Law at the University at Buffalo is not directly affiliated with the Legal Studies concentration of the Social Sciences Interdisciplinary Programs. However, the Law School does have a small offering of undergraduate courses on the American legal system which students from across the disciplines find interesting, some of which are used in the Legal Studies curriculum.

Degrees Offered

- **Undergraduate:** BA in Social Sciences Interdisciplinary
- **Concentration:** Legal Studies

Linguistics

Department of Linguistics

College of Arts and Sciences

609 Baldy Hall
North Campus
Buffalo, NY 14260-1030
Phone: (716) 645-2177
Fax: (716) 645.3825
Web site: linguistics.buffalo.edu

Karin Michelson
Chair

Matthew S. Dryer
Director of Undergraduate Studies
dryer@buffalo.edu

For a listing of Linguistics faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Linguistics is the scientific study of the function and structure of language, and is concerned with language as a general aspect of human knowledge and behavior. The department offers three major tracks-Applied Linguistics; Language, Society, and Communication; and Language and Cognition. Two honors programs are also available. In addition, the department offers a joint major and a minor.

The Department of Linguistics offers courses in the following languages: American Sign Language, Arabic, Chinese, German, Greek (Modern), Hindi, Irish, Japanese, Korean, Polish, Russian, and Ukrainian.

Degrees Offered

- **Undergraduate:** BA, Minor
- **Concentrations:** Applied Linguistics; Language, Society, and Communication; Language and Cognition
- **Graduate:** MA, PhD
- **Concentrations (MA):** General Linguistics, Germanic Linguistics, Sociolinguistics and Contact Linguistics

Degree Options

The Applied Linguistics Track prepares students for careers in Teaching English to Speakers of Other Languages (TESOL), bilingual education, and language education; the program includes electives in education and a teaching internship. The BA can be a terminal degree, or can qualify the student for MA programs in applied linguistics/TESOL. Majors receive a thorough grounding in the structure of English and its function in American society, as well as practical teaching experience.

The Language, Society, and Communication Track prepares students for careers in the media, public relations, business, and industry. Majors explore the central role that language plays in society, social interaction, and communication. Required courses focus on basic issues of the structure and use of language. Electives focus on specific social and cultural contexts cross-linguistically, and on methods for studying the use of language in distinctive social contexts.

The Language and Cognition Track prepares students for careers and advanced training in linguistics, cognitive science, language education, child development, and adult language disorders. It is designed for students interested in exploring the interface between language structure and use and other human cognitive processes. Courses focus on the acquisition of language, language production and comprehension, the construction and conveyance of meaning, and the representation of language in the brain. Students may take this track as either an honors or non-honors program.

The honors programs prepare students for graduate study in linguistics, cognitive science, and fields related to cognitive science, such as psychology. Majors become proficient at all levels of linguistic analysis, and gain an overview of theoretical issues. The honors programs involve a more intensive examination of current theoretical issues in linguistics.

The special major in language and linguistics combines the study of a specific language with a deeper understanding of how language functions. The program is flexible and practical, and provides an excellent opportunity to develop students' research interests and professional plans by working directly with a faculty member of the student's choice. Students who choose this option may prepare for careers in TESOL, translation, or advanced language research.

Note: For specific information about this special major, contact the director of undergraduate studies.

Related major: Cognitive Science (see Social Sciences Interdisciplinary).

Honors Programs

The Department of Linguistics offers two honors programs—one in Language, Structure, and Theory, and one in Language and Cognition.

- **Language Structure and Theory:** Required courses are LIN 205, LIN 207, LIN 415, LIN 432, and LIN 497 Honors Thesis (3-6 credit hours), and two or three additional upper-division courses in theoretical linguistics (24 credit hours total). Electives from department courses; may apply one course with approved linguistic content from another department (12 credit hours).
- **Language and Cognition:** LIN 205, LIN 207, LIN 415, and LIN 432; two of LIN 320, LIN 342, LIN 355, LIN 417, LIN 455; two of LIN 356, LIN 413, LIN 421, LIN 438; LIN 497 Honors Thesis (3 credit hours) (27 credit hours total). Electives from department courses, and one course with language and cognition content from another department (9 credit hours).

LINGUISTICS—BA

Concentration in Applied Linguistics

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in the prerequisite courses.

Advising Notes

Students are required to apply to the director of undergraduate studies for acceptance into the major. Students may apply to the major at any time, and are encouraged to discuss their academic plans with the director as early as possible. Students who have not completed the prerequisite courses may be accepted into the major on a provisional basis, pending successful completion of LIN 205 and LIN 207.

Prerequisite Courses

LIN 205 Introduction to Linguistic Analysis
LIN 207 Language, Society, and the Individual

Required Courses

LIN 301 Structure of English: The Sound System
LIN 302 Structure of English: Grammar and Lexicon
One of the following: LIN 315 Language in Its Social Setting, LIN 355 Child Language Development, or LIN 356 An Introduction to Contemporary Theories of Metaphor
One of the following: LIN 405 Bilingualism and Language Contact, LIN 421 Linguistic Anthropology, or LIN 493 Sociolinguistics
LIN 496 Internship (6 credits)
Four LIN electives (may apply one course with approved linguistic content from another department)

Summary

Total required credit hours for the major.....36

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall or Spring—LIN 205, LIN 207

SECOND YEAR
Fall or Spring—LIN 301, LIN 302; one of the following: LIN 315, LIN 355, LIN 356

THIRD YEAR
Fall—Two LIN elective courses
Spring—LIN 405, LIN 421 or LIN 493

FOURTH YEAR
Fall—One 300/400-level LIN elective course

(Continued on next page)

Spring—One 300/400-level LIN elective course
Fall and Spring—LIN 496

Concentration in Language and Cognition (L&C)

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in the prerequisite courses.

Advising Notes
Students are required to apply to the director of undergraduate studies for acceptance into the major. Students may apply to the major at any time, and are encouraged to discuss their academic plans with the director as early as possible. Students who have not completed the prerequisite courses may be accepted into the major on a provisional basis, pending successful completion of LIN 205 and LIN 207.

Prerequisite Courses
LIN 205 Introduction to Linguistic Analysis
LIN 207 Language, Society, and the Individual

Required Courses
LIN 301 Structure of English: The Sound System
LIN 302 Structure of English: Grammar and Lexicon
Two of the following: LIN 320 Language and the Brain, LIN 355 Child Language Development, LIN 342 Introduction to Cognitive Science, LIN 417 Psycholinguistics, LIN 455 Language Acquisition
Two of the following: LIN 356 An Introduction to Contemporary Theories of Metaphor, LIN 413 Language and Cognition, LIN 421 Linguistic Anthropology, LIN 438 Semantics
Three LIN electives and one course with approved language and cognition content from another department.

Summary
Total required credit hours for the major.....36

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall or Spring—LIN 205, LIN 207

SECOND YEAR
Fall or Spring—LIN 301, LIN 302, one L&C required course

THIRD YEAR
Fall—Two L&C required courses (or one L&C course from Linguistics and one course with language and cognition content from another department)
Spring—Two L&C required courses (or one L&C course from Linguistics and one course with language and cognition content from another department)

FOURTH YEAR
Fall—Two LIN electives, or one elective and one L&C required course
Spring—One LIN elective course

Concentration in Language, Society, and Communication

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in the prerequisite courses.

Advising Notes
Students are required to apply to the director of undergraduate studies for acceptance into the major. Students may apply to the major at any time, and are encouraged to discuss their academic plans with the director as early as possible. Students who have not completed the prerequisite courses may be accepted into the major on a provisional basis, pending successful completion of LIN 205 and LIN 207.

Prerequisite Courses
LIN 205 Introduction to Linguistic Analysis
LIN 207 Language, Society, and the Individual

Required Courses
LIN 301 Structure of English: The Sound System
LIN 302 Structure of English: Grammar and Lexicon
Four additional LIN courses with sociolinguistics, communication, or cultural content
Four LIN electives (may apply one course with approved linguistic content from another department)

Summary
Total required credit hours for the major.....36

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall or Spring—LIN 205, LIN 207

SECOND YEAR
Fall or Spring—LIN 301, LIN 302, one LIN required course

THIRD YEAR
Fall—Two LIN required/elective courses (one may be from another department)
Spring—Two LIN required/elective courses

FOURTH YEAR
Fall—Two 300/400-level LIN elective courses
Spring—One 300/400-level LIN elective course

LINGUISTICS—MINOR

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in the prerequisite courses.

Prerequisite Courses
LIN 205 Introduction to Linguistic Analysis
LIN 207 Language, Society, and the Individual

Required Courses
LIN301 Structure of English: Grammar and Lexicon
LIN302 Structure of English: The Sound System
Two additional linguistics courses

Summary
Total required credit hours for the minor 18

Mathematics

Department of Mathematics

College of Arts and Sciences

244 Mathematics Building
North Campus
Buffalo, NY 14260
Phone: (716) 645-6284
Fax: (716) 645-5039
Web site: www.math.buffalo.edu

Brian Hassard
Chair

John Ringland
Director of Undergraduate Studies
UndergraduateStudies@math.buffalo.edu

For a listing of Mathematics faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Mathematics is a broad discipline with many diverse applications in social, managerial, and life sciences, as well as in the physical sciences and engineering. The Department of Mathematics provides a variety of concentrations leading to a baccalaureate degree.

Degrees Offered

- **Undergraduate:** BA, BS, Minor
- **Concentrations:** General Curriculum (BA), Computing and Applied Mathematics (BA), Preparation for Graduate Study in Mathematics (BA and BS), Preparation for Graduate Study in Applied Mathematics (BA and BS), and Preparation for Teacher Certification (BA)
- **Combined:** BA/MA
- **Graduate:** MA, PhD
- **Other programs:** Joint programs with other departments including Economics (BA), Physics (BS), and Bioinformatics and Computational Biology (BS)

Degree Options

BA in Mathematics

- **General Curriculum in Mathematics**—Basic liberal arts major program in mathematics; not tied to a specific career direction, but rather provides a general background for students interested in a variety of careers that require mathematical expertise. Well suited to students pursuing multiple majors.
- **Concentration C**—Mathematics major with a concentration in computing and applied mathematics; designed for students interested in careers in applying mathematics or doing scientific programming.
- **Concentration GS/ED**—For the student whose career goal is to attain a master's degree for professional certification in adolescent mathematics education; may be coupled with a minor in teacher education.
- **Concentration GS**—Basic theoretical course of study for mathematics majors intending graduate study in mathematics, or intending careers in such fields as actuarial science, financial analysis or cryptography.
- **Concentration GS/AM**—Mathematics major for intended graduate study in applied mathematics; a basic theoretical course of study for students planning a career and/or graduate study in applied mathematics.

BS in Mathematics

- **Concentration BSc**—Same as Program GS with four additional electives.
- **Concentration BSc/AM**—Same as Program GS/AM with four additional electives.

BA in Mathematics/Economics

- **Program M/E**—Joint major with economics, for students intending graduate study in economics.

BS in Mathematical Physics

- **Program M/P**—Joint major with physics, for students intending graduate study in mathematical physics.

BS in Bioinformatics and Computational Biology

- Concentration in Mathematics—The university offers a bachelor of science degree in bioinformatics and computational biology, with options for a concentration in biology, biophysics, computer science and engineering, or mathematics. Please refer to the Bioinformatics and Computational Biology program for further details.

BA/MA in Mathematics

Five-year, 138-credit combined degree program. Admission requires a minimum GPA of 3.0 in courses through differential equations and linear algebra, as well as letters of recommendation. For program details, contact the director of undergraduate studies.

Advisement

Students intending or contemplating a mathematics major are encouraged to talk with the undergraduate director ((716) 645-6284, ext. 108) at the earliest opportunity.

Acceptance Information

Applicants to the mathematics program should bring a copy of their current UB DARS reports directly to the Department of Mathematics. Formal application to the major can be made at any time after they have completed the three-course calculus sequence MTH 141-MTH 142-MTH 241 or the equivalent at a transfer institution, but regular advisement is available and recommended to all students intending or contemplating a mathematics major.

The department's requirement for admission is a minimum GPA of 2.5 in the three calculus courses. Students who have taken more than these three courses usually need a minimum grade of C in any additional required courses they have completed.

Note: Admittance to the department guarantees admittance to the General Curriculum Program only—all other concentrations or programs require specific approval from the director of undergraduate studies. Students who expect difficulty in being admitted to the department should follow the requirements for the General Curriculum Program or see the director of undergraduate studies for advice on which concentration to follow, pending admittance.

Academic Requirements

Departmental Probation. Students whose math GPA drops below 2.0 are placed on departmental probation for one semester. If their GPA remains below 2.0 at the end of the probationary semester, they are dropped from the department. They may reapply after one semester.

Departmental Requirements for Graduation. After a student has been accepted as a major, progress toward fulfillment of the degree requirements is monitored by the department. A student is recommended for a baccalaureate degree in mathematics only if:

1. the program has been approved by the director of undergraduate studies,
2. all required/approved courses have been completed, and
3. a minimum departmental GPA of 2.0 has been attained in the specific program except in the General Curriculum Program where the minimum is 2.5.

Transfer Policy

Transfer students who intend to major in mathematics are urged to consult the director of undergraduate studies before or very early in their first semester at the University at Buffalo to determine equivalency of transferred mathematics courses. Transfer students are required to complete at least four upper-division courses in the Department of Mathematics at the University at Buffalo.

MATHEMATICS—BS

Concentration BSc: General Study in Mathematics

About the Concentration
This concentration provides a basic theoretical course of study for mathematics majors intending graduate study in mathematics. Admission to this concentration is by departmental approval only. See the director of undergraduate studies regarding approval.

Acceptance Criteria
Minimum GPA of 2.5 in the prerequisite courses.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III

Required Courses
MTH 311 Introduction to Higher Mathematics
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
MTH 419 Introduction to Algebra I
MTH 420 Introduction to Algebra II
MTH 431 Introduction to Real Variables I
MTH 432 Introduction to Real Variables II
Three 300/400-level mathematics courses (not MTH 417)
Four 300/400-level courses in mathematics or computer science (not MTH 417)

Summary
Total required credit hours for the major (concentration BSc) .. 64-68

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST - THIRD YEARS
Follow first three years of concentration GS

FOURTH YEAR
Three 300/400 level mathematics courses (not MTH 417)
Four 300/400 level courses in mathematics or computer science (not MTH 417)

Note: Not all seven electives need to be taken in the senior year.

MATHEMATICS—BS

Concentration BSc/AM: General Study in Applied Mathematics

About the Concentration
This concentration provides a course of study for mathematics majors intending to pursue graduate study in applied mathematics. Admission to this concentration is by departmental approval only. See the director of undergraduate studies regarding approval.

Acceptance Criteria
Minimum GPA of 2.5 in the prerequisite courses.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III

Required Courses
CSE 115 Introduction to Computer Science for Majors I
CSE 116 Introduction to Computer Science for Majors II
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
MTH 311 Introduction to Higher Mathematics
MTH 418 Survey of Partial Differential Equations
MTH 419 Introduction to Algebra I or MTH 420 Introduction to Algebra II
MTH 431 Introduction to Real Variables I
MTH 432 Introduction to Real Variables II
Three 300/400-level mathematics courses (not MTH 417)
Four 300/400-level courses in mathematics or computer science (not MTH 417)
PHY 107 General Physics I
PHY 108 General Physics II

Summary
Total required credit hours for the major (concentration BSc/AM) 77-83

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CSE 115, MTH 141, PHY 107
Spring—CSE 116, MTH 142, PHY 108

SECOND YEAR
Fall—MTH 241, MTH 309
Spring—MTH 306, MTH 311

THIRD YEAR
Fall—MTH 418; MTH 431
Spring—MTH 419 or MTH 420; MTH 432

FOURTH YEAR
Three 300/400 level mathematics courses (not MTH 417)
Four 300/400 level courses in mathematics or computer science (not MTH 417)

Note: Not all seven electives need to be taken in the senior year.

MATHEMATICAL PHYSICS-BS

Acceptance Criteria
Minimum GPA of 2.5 in the prerequisite courses.

Advising Notes
Students should consult with the undergraduate director in each department regarding approved electives.

This is a joint program. A student who follows this program but does not complete it will have difficulty completing a math major without substantial additional coursework.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I or PHY 117 Honors Physics I
PHY 108 General Physics II or PHY 118 Honors Physics II
PHY 158 General Physics II Lab

Required Courses
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
MTH 417 Survey of Multivariable Calculus
MTH 418 Survey of Partial Differential Equations
MTH 419 Introduction to Algebra I or MTH 420 Introduction to Algebra II
MTH 424 Fourier Series
MTH 425 Introduction to Complex Variables I
PHY 207 General Physics III or PHY 217 Honors Physics III
PHY 208 General Physics IV
PHY 257 General Physics III Lab
PHY 301 Intermediate Mechanics I
PHY 307 Modern Physics Lab
PHY 401 Modern Physics I
PHY 403 Electricity and Magnetism I
PHY 405 Thermal and Statistical Physics I
PHY 407 Advanced Laboratory or PHY 408 Advanced Laboratory
One 300/400-level MTH elective
One PHY elective (one of the following: PHY 302 Intermediate Mechanics II, PHY 402 Modern Physics II, PHY 404 Electricity and Magnetism II, or PHY 406 Thermal and Statistical Physics II)

Summary
Total required credit hours for the major.....81

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MTH 141
Spring—MTH 142; PHY 107 or PHY 117

SECOND YEAR
Fall—MTH 241; PHY 108 or PHY 118; PHY 158
Spring—MTH 306, MTH 309; PHY 207 or PHY 217; PHY 208, PHY 257

THIRD YEAR
Fall—MTH 417, PHY 301, PHY 307, PHY 401
Spring—MTH 418, one PHY elective

FOURTH YEAR
Fall—MTH 419 or MTH 420; MTH 425, PHY 403, PHY 405
Spring—MTH 424; PHY 407 or PHY 408; one 300/400 level MTH elective

MATHEMATICS—BA

General Curriculum in Mathematics

General Curriculum in Mathematics
This is the basic liberal arts major program in mathematics, and allows for freedom in course choice by the students. A total of nine mathematics (MTH) courses are required: five core courses (MTH 141, MTH 142, MTH 241, MTH 306, MTH 309) and four electives. An overall GPA of 2.5 in these nine mathematics courses is required to graduate in this program. Several concentrations requiring additional coursework are available for students with specific career goals.

Acceptance Criteria
Minimum GPA of 2.5 in the prerequisite courses (or transfer equivalents).

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III

Required Courses
MTH 306 Introduction to Differential Equations
MTH 309 Introduction to Linear Algebra
One of the following: MTH 311 Introduction to Higher Mathematics, MTH 313 Elements of Set Theory, MTH 335 Elements of Geometry, MTH 419 Introduction to Algebra I, MTH 420 Introduction to Algebra II, MTH 431 Introduction to Real Variables I, or other proofs course approved by the director of undergraduate studies in mathematics
Three 300/400-level mathematics courses. For students transferring a non-computer-based differential equations course, one of these three courses must be a computer applications course approved by the director of undergraduate studies.

Summary
Total required credit hours for the major (basic curriculum) 33-36

The requirement of an overall GPA of at least 2.5 in the nine mathematics courses will be strictly enforced. Students who fail to meet this requirement with their first nine courses may take additional mathematics courses approved by the director of undergraduate studies to achieve a package of nine in which a 2.5 GPA is earned.

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MTH 141
Spring—MTH 142

SECOND YEAR
Fall—MTH 241
Spring—MTH 309

THIRD YEAR
Fall—MTH 306
Spring—One of the following: MTH 311, MTH 313, MTH 335, MTH 419, MTH 420, MTH 431, or other mathematical proofs course approved by the director of undergraduate studies in mathematics

(Note: selections above must be made in consultation with the director of undergraduate studies in mathematics.)

FOURTH YEAR
Fall and Spring—Three 300/400 level-mathematics courses

Each elective must be pre-approved by the director of undergraduate studies in mathematics

MATHEMATICS—BA

Concentration C: Computing and Applied Mathematics

About the Concentration
This concentration is designed to serve those students interested in careers as applied mathematicians or scientific applications programmers.

The courses in this concentration are like the calculus and computing courses, though more difficult. A student who can handle MTH 141, MTH 142, MTH 241, CSE 115, and CSE 116 should be able to handle concentration C.

Acceptance Criteria
Minimum GPA of 2.5 in the prerequisite courses.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III

Required Courses
CSE 115 Introduction to Computer Science for Majors I
CSE 116 Introduction to Computer Science for Majors II
CSE 241 Digital Systems
CSE 250 Algorithms and Data Structures
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
MTH 417 Survey of Multivariable Calculus and MTH 418 Survey of Partial Differential Equation or MTH 431 Introduction to Real Variables I and MTH 432 Introduction to Real Variables II*
MTH 437 Introduction to Numerical Analysis I
MTH 438 Introduction to Numerical Analysis II
Two 300/400-level mathematics courses
Two 300/400-level courses in mathematics or computer science

Summary
Total required credit hours for the major (concentration C) 64-68

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CSE 115, MTH 141
Spring—CSE 116, MTH 142

SECOND YEAR
Fall—CSE 241, MTH 241
Spring—CSE 250, MTH 306

THIRD YEAR
Fall—MTH 309; MTH 417 or MTH 431*
Spring—MTH 418 or MTH 432*

FOURTH YEAR
Fall—MTH 437
Spring—MTH 438
Fall or Spring—Two 300/400-level mathematics courses, two 300/400-level courses in mathematics or computer science

**MTH 311 is a prerequisite for MTH 431. Students must take one complete sequence MTH 417-MTH 418 or MTH 431-MTH 432. Students intending to go to graduate school in applied mathematics should take MTH 311-MTH 431-MTH 432 instead of MTH 417-MTH 418. MTH 311 would then count as a technical elective.*

Approved Technical Electives
Any 300/400-level MTH course is acceptable. Note that MTH 431-MTH 432 and MTH 419-MTH 420 are designed for students who want intensive preparation in analysis and modern algebra, and are not good choices to just fill out a schedule. MTH 431-MTH 432 may be taken as electives (in addition to MTH 417 or MTH 418) or as requirements (in place of MTH 417 and MTH 418).
Approved technical electives outside the Mathematics department: any 300 or 400 level CSE course.

MATHEMATICS—BA

Concentration GS: General Study in Mathematics

About the Concentration
This concentration describes a basic theoretical course of study for mathematics majors intending to pursue graduate study in mathematics, or intending careers in such fields as actuarial science, financial analysis, or cryptography.

Admission to this concentration is by departmental approval only. See the director of undergraduate studies regarding approval.

Acceptance Criteria
Minimum GPA of 2.5 in the prerequisite courses.

Advising Notes
Concentration GS has the fewest courses of any of the math concentrations except General Curriculum, but many courses are quite difficult; MTH 311, MTH 431-MTH 432, and MTH 419-MTH 420 are abstract theoretical courses emphasizing proofs. A student must do well in MTH 311 to enter this program.

Students planning to go to graduate school should meet with the director of undergraduate studies in mathematics in the fall semester of their junior year. They should plan to take the GREs in either spring of the junior year or fall of the senior year.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III

Required Courses
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
MTH 311 Introduction to Higher Mathematics
MTH 419 Introduction to Algebra I
MTH 420 Introduction to Algebra II
MTH 431 Introduction to Real Variables I
MTH 432 Introduction to Real Variables II
One 300/400-level mathematics course (not MTH 417)
Two 300/400-level courses in mathematics or computer science (not MTH 417)

Summary
Total required credit hours for the major (concentration GS) 49-52
(thirteen courses in math and related areas)

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MTH 141
Spring—MTH 142

SECOND YEAR
Fall—MTH 241, MTH 309
Spring—MTH 306, MTH 311

THIRD YEAR
Fall—MTH 419, MTH 431
Spring—MTH 420, MTH 432

FOURTH YEAR
Fall or Spring—One 300/400-level mathematics course (not MTH 417), two 300/400-level courses in mathematics or computer science (not MTH 417)

MATHEMATICS—BA

Concentration GS/AM: General Study in Applied Mathematics

About the Concentration
This concentration describes a course of study for mathematics majors intending to pursue graduate study in applied mathematics. Admission to this concentration is by departmental approval only. See the director of undergraduate studies regarding approval.

Acceptance Criteria
A minimum GPA of 2.5 in the prerequisite courses.

Advising Notes
MTH 311-MTH 431-MTH 432 and MTH 419 are abstract theoretical courses emphasizing proofs. A student must do well in MTH 311 to enter this program.

Students planning to go to graduate school should meet with the director of undergraduate studies in mathematics in the fall semester of their junior year. They should plan to take the GREs in either spring of the junior year, or fall of the senior year.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III

Required Courses
CSE 115 Introduction to Computer Science for Majors I
CSE 116 Introduction to Computer Science for Majors II
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
MTH 311 Introduction to Higher Mathematics
MTH 418 Survey of Partial Differential Equations
MTH 419 Introduction to Algebra I or MTH 420 Introduction to Algebra II
MTH 431 Introduction to Real Variables I
MTH 432 Introduction to Real Variables II
Three 300/400-level courses in mathematics or computer science (not MTH 417)
PHY 107 General Physics I
PHY 108 General Physics II

Summary
Total required credit hours for the major (concentration GS/AM):..... 65-67
(seventeen courses in math and related areas)

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CSE 115, MTH 141, PHY 107
Spring—CSE 116, MTH 142, PHY 108

SECOND YEAR
Fall—MTH 241, MTH 309
Spring—MTH 306, MTH 311

THIRD YEAR
Fall—MTH 419 or MTH 420; MTH 431
Spring—MTH 418; MTH 432

FOURTH YEAR
Fall or Spring—Three 300/400-level courses in mathematics or computer science (not MTH 417)

MATHEMATICS - ECONOMICS—BA

Program M/E: Joint Major in Mathematics/Economics

About the Concentration
This is a program for students intending graduate study in economics. Acceptance into this program requires a minimum GPA of 2.5 in both the mathematics and economics courses during the first year. Separate applications must be submitted to both the Department of Mathematics and the Department of Economics. Admission to this program is by departmental approval only. See the director of undergraduate studies regarding approval.

Acceptance Criteria
A minimum GPA of 2.5 in the prerequisite courses.

Advising Notes
A student must be able to handle MTH 311 to enter this program. Students should consult the advisor in each department concerning senior-level courses. Exceptions in the curriculum may be allowed through consultation with the appropriate department. Interested students should contact the departments upon application for up-to-date information on possible changes.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III

Required Courses
ECO 405 Microeconomic Theory
ECO 407 Macroeconomic Theory or ECO 337 Honors Macroeconomic Theory
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
MTH 311 Introduction to Higher Mathematics
MTH 411 Probability Theory
MTH 412 Introduction to Statistical Inference
MTH 419 Introduction to Algebra I or MTH 420 Introduction to Algebra II
MTH 431 Introduction to Real Variables I
One 300/400-level mathematics course (not MTH 417)
Two 300/400-level courses in economics (not ECO 480 or ECO 481)

Summary
Total required credit hours for the major (program M/E)..... 58-61
(fifteen courses in math and economics)

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MTH 141
Spring—MTH 142

SECOND YEAR
Fall—ECO 407 or ECO 337; MTH 241
Spring—ECO 405, MTH 306, MTH 309, MTH 311

THIRD YEAR
Fall—MTH 411, MTH 431
Spring—MTH 419 or MTH 420, one 300/400-level mathematics course (not MTH 417)

FOURTH YEAR
Fall—One 300/400-level courses in economics (not ECO 480 or ECO 481)
Spring—MTH 412; one 300/400-level course in economics (not ECO 480 or ECO 481)

MATHEMATICS—BA

Concentration GS/ED: General Study in Mathematics and Education

About the Concentration

This concentration is designed for the student whose career goal is to attain a master's degree for professional certification in adolescent mathematics education. Students interested in this concentration should obtain advisement from the director of undergraduate studies in mathematics, 233 Mathematics Building, and, for questions related to the education courses, from the Teacher Education Institute (TEI), 375 Baldy Hall.

Admission to the major must be sought from the Department of Mathematics, usually in the student's second year. For advice on prerequisites for required courses in education and selection of general education courses fulfilling the State Education Department (SED) requirement for prospective teachers, students should consult with TEI as early as their freshman year.

Completion of the major concentration (including the required education courses) provides advanced status toward initial New York State teacher certification, accomplished through one year of subsequent coursework at the graduate level through the Graduate School of Education. It is then possible to complete, within the state-mandated three years, the master's degree required for a professional teaching certificate, provided that all NYS requirements have been successfully completed.

Acceptance Criteria

A minimum GPA of 2.5 in the prerequisite courses.

Advising Notes

The courses in this concentration are more theoretical than those in concentration C; MTH 311, MTH 419, and MTH 431 are difficult. A student must be able to handle MTH 311 in order to enter this concentration. Warning: In order to graduate with a degree in mathematics in concentration GS/ED, a student must complete all the required education courses, as well as the required mathematics courses. Students who complete concentration GS/ED math requirements but do not complete the education requirements must change to the basic curriculum or to another concentration in order to graduate. It is recommended that students interested in this concentration contact the department upon application for up-to-date information on possible changes in requirements.

Prerequisite Courses

MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III

Required Courses

CEP 400 Educational Psychology
CSE 113 Introduction to Computer Science I or CSE 115 Introduction to Computer Science for Majors I
CSE 114 Introduction to Computer Science II or CSE 116 Introduction to Computer Science for Majors II
ELP 405 Sociology of Education
LAI 350 Introduction to Education
LAI 414 Language, Cognition & Writing
MTH 191 Introduction to Discrete Mathematics or CSE 191 Discrete Structures
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
MTH 311 Introduction to Higher Mathematics
MTH 335 Elements of Geometry
MTH 411 Probability Theory
MTH 419 Introduction to Algebra I
MTH 431 Introduction to Real Variables I
One 300/400-level mathematics elective (not MTH 417)
Two 300/400-level electives from the Educational Leadership and Policy department or the Counseling, School, and Educational Psychology department, or one education-related College of Arts and Sciences course

Summary

Total required credit hours for the major..... 74-75
(fourteen courses in math and related areas)

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CSE 113 or CSE 115; MTH 141
Spring—CSE 114 or CSE 116; MTH 142

SECOND YEAR
Fall—MTH 241, MTH 191 or CSE 191
Spring—LAI 350, MTH 311, MTH 306

THIRD YEAR
Fall—MTH 309, MTH 431
Spring—CEP 400, ELP 405, MTH 335

FOURTH YEAR
Fall—LAI 414, MTH 411, MTH 419
Spring—One 300/400-level mathematics elective (not MTH 417); two 300/400-level electives from the Educational Leadership and Policy or Counseling, School, and Educational Psychology departments, or one education-related College of Arts and Sciences course

MATHEMATICS—BA/MA

About the Program
This program is designed for students who demonstrate, in their first two years of mathematical study, a high level of competence and motivation. Upon admission to the BA/MA program, students follow an integrated course of study leading to a combined degree. Admission to this program is by departmental approval only and requires a minimum GPA of 3.0 in mathematics courses (calculus, differential equations, linear algebra) as well as letters of recommendation.

Acceptance Criteria
A minimum GPA of 2.5 in the prerequisite courses.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III

Required Courses
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
MTH 311 Introduction to Higher Mathematics
MTH 519 Introduction to Algebra I
MTH 520 Introduction to Algebra II
MTH 531 Introduction to Real Variables I
MTH 532 Introduction to Real Variables II
Three 300/400-level courses in mathematics or computer science. At least one of these must be a mathematics course other than MTH 417. Electives require approval by the director of undergraduate studies.
Six graduate-level courses, including at least 12 credits in mathematics. Included must be at least one year-long sequence in mathematics at the 500 level or above (other than 519-520 or 531-532). Electives require approval by the director of graduate studies.

Summary
Total required credit hours for the undergraduate portion..... 33-36
Total required credit hours for the BA/MA 63-66

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the Graduate School's Policies and Procedures Manual for Master's Candidate Requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MTH 141
Spring—MTH 142

SECOND YEAR
Fall—MTH 241, MTH 309
Spring—MTH 306, MTH 311

THIRD YEAR
Fall and Spring—Three 300/400-level courses in mathematics or computer science. At least one of these must be a mathematics course other than MTH 417. Electives require approval by the director of undergraduate studies in mathematics.

FOURTH YEAR
Fall—MTH 519, MTH 531
Spring—MTH 520, MTH 532

FIFTH YEAR
Fall and Spring—Six graduate-level math electives, including at least 12 credits in mathematics. Included must be at least one year-long sequence in mathematics at the 500 level or above (other than MTH 519-MTH 520 or MTH 531-MTH 532). Electives require approval by the director of graduate studies.

Project or thesis (up to 6 credits of the 18 credits of graduate level electives may be used for MTH 800 Thesis Guidance.)

MATHEMATICS—MINOR

Acceptance Criteria
Minimum GPA of 2.5 in the prerequisite courses (or approved transfer equivalent).

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III

Required Courses
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
Two additional 300/400-level mathematics electives from within the Department of Mathematics

Note: A minimum GPA of 2.0 is required in these courses for departmental recommendation for a minor in mathematics.

Summary
Total required credit hours for the minor 26-28
(7 courses from within the Mathematics department)

Mechanical Engineering

Department of Mechanical and Aerospace Engineering

School of Engineering and Applied Sciences

309 Furnas Hall
North Campus
Buffalo, NY 14260-4400
Phone: (716) 645-2593, ext. 2200
Fax: (716) 645-2883
Web site: www.mae.buffalo.edu/

Andres Soom
Chair

Robert C. Wetherhold
Director of Undergraduate Studies

For a listing of Mechanical Engineering faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Mechanical engineering is one of the broadest of the engineering disciplines. Mechanical engineers are involved in research and development, design, manufacturing, and technical sales of a variety of products. Specific areas include computer-aided design and manufacturing; robotics; power plants; engines; machine tools; construction equipment; materials; agricultural implements; automotive vehicles and systems of transportation; domestic and industrial appliances; control and measurement devices; instrumentation; biomedical devices; apparatus for the control of air, water, noise, refuse, and other types of pollution; underwater technology; space flight equipment; safety devices; and food processing machinery. The objectives of our program are as follows:

- To prepare graduates for a career or advanced studies in mechanical engineering or related disciplines, applying the concepts and principles of mathematics, science and engineering.
- To provide graduates with the technical skills necessary to begin a career or advanced studies in mechanical engineering.
- To provide graduates with the professional skills and societal awareness expected in modern engineering practice.

Based on the objectives above, our program presents students with the

knowledge and skills of the profession that will be useful as they begin their careers and/or prepare for advanced studies. We offer a comprehensive program that is well balanced among the technical areas of the thermal-fluid sciences, mechanics, materials, systems and design.

Degrees Offered

- **Undergraduate:** BS
- **Combined:** BS/MBA
- **Graduate:** MS, PhD

Advisement

Students are normally assigned a faculty mentor when they enter their freshman year. All engineering students are also encouraged to take advantage of advisement offered by the SEAS Office of Undergraduate Education in 410 Bonner Hall. Entering freshmen are offered a wide range of special advisement opportunities and academic help sessions by the Office of Undergraduate Education.

Transfer Policy

Transfer students must apply to the university and meet the university transfer admission requirements. For admission of transfer students to engineering, see the Transfer Policy of the School of Engineering and Applied Sciences.

MECHANICAL ENGINEERING—BS

Acceptance Criteria

See the School of Engineering and Applied Sciences for acceptance information. Students may apply for admission to Mechanical Engineering when they enter the University as freshmen, as transfer students, or later in their academic careers. To remain in Mechanical Engineering and to be permitted to take upper-level (300/400 level) Mechanical Engineering Courses, students must satisfy the following requirements:

1. Successful completion of the following five courses with at least a 2.2 GPA: MTH 141, MTH 142, PHY 107, MAE 204, EAS 207. If a course is repeated, the grade that is counted is the grade earned the second time, even if this grade is lower than the grade earned the first time.
2. Minimum overall and UB GPA of 2.0 to be considered in academic good standing with the University.

Advising Notes

Students must meet minimum GPA requirements in engineering coursework to remain in good standing and to graduate from the program. See the Academic Requirements section of the School of Engineering and Applied Sciences for additional information.

Required Courses

CHE 107 General Chemistry for Engineers
EAS 140 Engineering Solutions
EAS 207 Statics
EAS 208 Dynamics
EAS 209 Mechanics of Solids
EAS 230 Higher-Level Language
EE 200 EE Concepts/Nonmajors
MAE 177 Introduction to Engineering Drawing and CAD
MAE 204 Thermodynamics
MAE 277 Introduction to Mechanical and Aerospace Engineering Practice
MAE 311 Machines and Mechanisms I
MAE 334 Introduction to Instrumentation and Computers
MAE 335 Fluid Mechanics
MAE 336 Heat Transfer
MAE 338 Fluid and Heat Transfer Laboratory
MAE 340 Systems Analysis
MAE 364 Manufacturing Processes
MAE 376 Applied Math for Mechanical and Aerospace Engineers
MAE 377 Product Design in a CAD Environment
MAE 381 Engineering Materials
MAE 385 Engineering Materials Laboratory
MAE 451 Design Process and Methods
MAE 494 Design Project
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 General Physics II Lab
One applied math elective
One science elective
Four technical electives

Summary

Total required credit hours for the major.....110

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 107, EAS 140, MTH 141
Spring—EAS 230, MAE 177, MTH 142, PHY 107

SECOND YEAR
Fall—EAS 207, MAE 204, MAE 277, MTH 241, PHY 108/PHY 158
Spring—EAS 208, EAS 209, EE 200, MTH 306, one science elective

THIRD YEAR
Fall—MAE 334, MAE 335, MAE 376, MAE 377, MAE 381
Spring—MAE 311, MAE 336, MAE 340, MAE 364, MAE 385

FOURTH YEAR
Fall—MAE 338, MAE 451, two technical electives
Spring—MAE 494, one applied math elective, two technical electives

Electives and Course Groupings

TECHNICAL ELECTIVES
Engineering, mathematics, or science courses at the 300/400 level that are not required courses. Three of the four technical elective courses must be MAE courses. Any exemption from this three-course requirement must be approved in advance by the director of undergraduate studies. Any course that substantially duplicates the material presented in another course that is being counted toward the degree cannot be used to satisfy the TE requirement.

APPLIED MATH ELECTIVE
EAS 305 Applied Probability
CIE 308 Engineering Statistics
MAE 428 Analytical Methods
MTH 309 Introductory Linear Algebra
MTH 417 Survey of Multivariable Calculus
MTH 418 Survey of Partial Differential Equations

SCIENCE ELECTIVE
CHE 108 with lab
PHY 207 with lab
For students with bioengineering interests: an appropriate biology course and laboratory experience to be selected and approved in advance.

MECHANICAL ENGINEERING/BUSINESS ADMINISTRATION—BS/MBA

Acceptance Crteria

Good standing as a mechanical engineering undergraduate and acceptance as a graduate student by the School of Management.

Advising Notes

Students apply directly to the School of Management during their junior year to be admitted to the MBA Program. The MBA courses shown below are representative of those currently required but may change prior to a student's acceptance into the MBA Program. Students should confirm MBA program requirements with the School of Management upon their application and acceptance to that program.

Required Courses

CHE 107 General Chemistry for Engineers
CIE 308 Engineering Statistics
EAS 140 Engineering Solutions
EAS 207 Statics
EAS 208 Dynamics
EAS 209 Mechanics of Solids
EAS 230 Higher-Level Language
EE 200 EE Concepts/Nonmajors
MAE 177 Introduction to Engineering Drawing and CAD
MAE 204 Thermodynamics
MAE 277 Introduction to Mechanical and Aerospace Engineering Practice
MAE 311 Machines and Mechanisms I
MAE 334 Introduction to Instrumentation and Computers
MAE 335 Fluid Mechanics
MAE 336 Heat Transfer
MAE 338 Fluid and Heat Transfer Laboratory
MAE 340 Systems Analysis
MAE 364 Manufacturing Processes
MAE 376 Applied Math for Mechanical and Aerospace Engineers
MAE 377 Product Design in a CAD Environment
MAE 381 Engineering Materials
MAE 385 Engineering Materials Laboratory
MAE 451 Design Process and Methods
MAE 494 Design Project
MGA 604 Financial Analysis and Reporting
MGB 601 Behavioral and Organizational Concepts for Management
MGT 601 Ethics and Corporate Finance
MGF 631 Financial Management
MGM 625 Marketing Management
MGO 630 Operations and Service Management
MGO 641 Strategic Management
MGA 609 Management Accounting
MGG 635 Business Communications
MGE 601 Economics for Managers
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 General Physics II Lab
Three MAE technical electives
One science elective
Six MBA electives
One MBA practicum

Summary

Total required credit hours for the undergraduate portion.....107
Total required credit hours for the BS/MBA 155

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the graduate school's policies and procedures manual for requirements for MBA candidates.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 107, EAS 140, MTH 141
Spring—EAS 230, MAE 177, MTH 142, PHY 107

SECOND YEAR
Fall—EAS 207, MAE 204, MAE 277, MTH 241, PHY 108/PHY 158
Spring—EAS 208, EAS 209, EE 200, MTH 306, one science elective

THIRD YEAR
Fall—MAE 334, MAE 335, MAE 376, MAE 377, MAE 381
Spring—MAE 311, MAE 336, MAE 340, MAE 364, MAE 385, one MAE technical elective

FOURTH YEAR
Fall—CIE 308, MAE 338, MAE 451, MGA 604, MGB 601, MGT 601, MGF 631
Spring—MGF 631, MGM 625, MGO 630, MGO 641, MGA 609, MGG 635

FIFTH YEAR
Fall—One MAE technical elective, three MBA electives, MGE 601, one MBA practicum
Spring—MAE 494, three MBA electives, one MAE technical elective

Contact the School of Management for elective options.

Upon completion, you will be awarded a BS diploma and an MBA diploma, with a transcript notation that these degrees were awarded as part of a combined degree program.

Media Study

Department of Media Study

College of Arts and Sciences

231 Center for the Arts
North Campus
Buffalo, NY 14260-6020
Phone: (716) 645-6902
Fax: (716) 645-6979
Web site: www.mediastudy.buffalo.edu

Vibeke Sorenson
Chair

For a listing of Media Study faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The department offers degree programs in media production and critical studies. Courses taught in the production of media cover 16 mm film camera work and editing, video camera use, nonlinear (computer) editing, documentary making, virtual reality creation, robotics, computer animation, web-based art, interactive software development, digital poetics, and sound. Students also take courses in the history, theory, and social effects of media.

Degrees Offered

- **Undergraduate:** BA, Minor
- **Concentrations:** Production, Critical Studies
- **Graduate:** MFA

Degree Options

Students who meet the acceptance criteria may arrange an appointment with the academic advisor. The advising office is located in 231 Center for the Arts. Students should bring a DARS report to each appointment.

Advisement

Students who meet the acceptance criteria may arrange an appointment with the academic advisor. The advising office is located in 231 Center for the Arts. Students should bring a DARS report to each appointment.

Transfer Policy

Media coursework taken at another institution is evaluated by faculty for credit in the media study program. Students should provide a transcript and syllabi for courses taken; tapes or film may be required for evaluation of production courses. A meeting with the departmental undergraduate advisor is recommended prior to registering. Transfer students who transfer in 50 credit hours or more and have college-level coursework in media production—film, video or digital arts—are required to submit their work for acceptance into this concentration. Transfers who fall short of 50 credit hours or who do not have experience in their chosen concentration are not required to submit a portfolio until they have completed 50 credit hours or a course that allows them to prepare appropriate material for the review. For applications, please contact the Department of Media Study.

MEDIA STUDY—BA

Production and Critical Studies

Production and Critical Studies Concentrations

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in the prerequisite courses.
Completion of a minimum of 50 credit hours.

Advising Notes

Students in all areas of concentration must take 18 credit hours of electives in one discipline or a set of disciplines outside media study that indicate a coherence, breadth, and depth of general advanced study, to be approved by the faculty of media study. Four of the six electives must be 300/400-level courses; two electives may be 200-level courses. Students can elect to pursue a traditional minor or double major in another department to fulfill this requirement.

48 credit hours in media study (a total of twelve courses) are required.

Students must receive a C- or higher in all media study courses.

Each course taken may be counted only once and applied to only one requirement.

All required courses are 4 credit hours unless otherwise noted.

Students choose to pursue either the production concentration or the critical studies concentration.

Prerequisite Courses

Any three media study courses.

Production Concentration

Required Courses

Three basic production courses (group A)
Two intermediate production courses (group B); at least one course must be a starred (*) course
One advanced production course (group C); prerequisite course must have been completed
One media and culture course (group D)
Two introduction to interpretation courses (group E)
One advanced analysis course (group F)
Two electives courses from group B, C, D, E, F, or G

Portfolio Review

Students interested in pursuing the Production Concentration are required to pass a portfolio review of work completed in the basic production classes. If a portfolio is declined by the department, the student is allowed to submit it a second time. If declined twice, the student may pursue either the Critical Studies concentration or the Film Studies concentration. Students must pass portfolio review in order to enroll in the starred (*) intermediate production courses in group B. Portfolio reviews are conducted each Fall and Spring. Please contact the undergraduate student advisor for further information on the portfolio review. Students should have completed at minimum two basic production and two introduction to interpretation courses before submitting to their portfolio review.

Summary

Total required credit hours for the major..... 66-84

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall—One introduction to interpretation course from group E
Spring—One basic production course from group A or one introduction to interpretation course from group E

SECOND YEAR

Fall—One basic production course from group A, one introduction to interpretation course from Group E
Spring—One media & culture course from group D, one basic production course from group A

THIRD YEAR

Fall—One intermediate production course from group B, and one advanced analysis course from group E
Spring—One intermediate production course from group B, one elective from group G

FOURTH YEAR

Fall—One elective from group G
Spring—One advanced production course from group C

(Continued on next page)

Electives and Course Groupings

A. BASIC PRODUCTION
DMS 101 Basic Filmmaking
DMS 103 Basic Video or DMS 105 Basic Documentary
DMS 121 Basic Digital Arts or DMS 155 New Media or DMS 110 Programming for Digital Art

Note: Students can take either DMS 103 or DMS 105 and either DMS 121 or DMS 155 or DMS 110, but not both.

B. INTERMEDIATE PRODUCTION
DMS 231 3D Character Animation
DMS 400 Film Workshop I*
DMS 341 Intermediate Video Workshop*
DMS 343 Digital Video
DMS 388 Screenwriting
DMS 419 Intermediate Digital Arts*
DMS 423 Programming Graphics I*
DMS 438 Virtual Reality Art Project I (prerequisite junior/senior standing)*
DMS 446 Interface Design
DMS 450 Film & Development of Contemporary Art
DMS 485 Media Robotics I*

C. ADVANCED PRODUCTION
DMS 401 Advanced Film Production (prerequisite DMS 400)
DMS 403 Advanced Documentary (prerequisite DMS 341)
DMS 420 Advanced Digital Arts (prerequisite DMS 419)
DMS 424 Programming Graphics II (prerequisite DMS 423)
DMS 439 Building a Virtual Reality Art Project II (prerequisite DMS 438)
DMS 441 Advanced Video Production (prerequisite DMS 341)
DMS 447 Sound Design (prerequisite junior/senior standing)
DMS 486 Media Robotics II

D. MEDIA AND CULTURE
DMS 213 Immigration & Film
DMS 303 Video Analysis I
DMS 304 Video Analysis II
DMS 405 Ethnographic Film
DMS 409 Nonfiction Film
DMS 426 Sound Media Poetics
DMS 440 Women Directors

E. INTRODUCTION TO INTERPRETATION
DMS 107 Film History I
DMS 108 Film History II
DMS 109 Introduction to Film Interpretation
DMS 225 Digital Literature Survey
DMS 259 Media Analysis

F. ADVANCED ANALYSIS
DMS 303 Video Analysis I
DMS 304 Video Analysis II
DMS 305 Film Analysis I
DMS 306 Film Analysis II
DMS 350 Information Theories
DMS 409 Nonfiction Film
DMS 411 Film Theory
DMS 412 Theory of Film Narrative
DMS 425 Visual Media Poetics
DMS 461 Elements of Machine Culture
DMS 474 Seminar on Postmodernism

G. ELECTIVES
DMS 110 Programming for Digital Art
DMS 155 New Media
DMS 213 Immigration & Film
DMS 215 Special Topics
DMS 216 Special Topics
DMS 303 Video Analysis I
DMS 304 Video Analysis II
DMS 350 Information Theories
DMS 381 Film Comedy
DMS 405 Ethnographic Film
DMS 409 Nonfiction Film
DMS 411 Film Theory
DMS 413 Film Narrative
DMS 415 Special Topics
DMS 416 Special Topics
DMS 417 Special Topics
DMS 418 Special Topics
DMS 455 Special Topics
DMS 461 Elements of Machine Culture
DMS 474 Seminar on Postmodernism
DMS 484 Language Media Poetics
DMS 490 Media Arts Internship
DMS 499 Independent Study

**Requires a portfolio for acceptance*

Critical Studies Concentration

Required Courses
Three introduction to interpretation courses (group A)
Four advanced analysis courses (group B)
One media and culture course (group C)
One new media theory course (group D)
One production course (group E)
Two elective courses (group F)

Summary
Total required credit hours for the major..... 66-84

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—One introduction to analysis course from group A
Spring—One introduction to analysis course from group A

SECOND YEAR
Fall—One media and culture course from group C
Spring—One production course from group E, one introduction to analysis course from group A

THIRD YEAR
Fall—One advanced analysis course from group B, one new media theory course from group C
Spring—One advanced analysis course from group B

FOURTH YEAR
Fall—One advanced analysis course from group B, one elective from group F
Spring—One advanced analysis course from group B, one elective from group F

Electives and Course Groupings

A. INTRODUCTION TO INTERPRETATION
DMS 107 Film History I
DMS 108 Film History II
DMS 109 Introduction to Film Interpretation
DMS 225 Digital Literature Survey
DMS 259 Media Analysis

B. ADVANCED ANALYSIS
DMS 303 Video Analysis I or DMS 304 Video Analysis II
DMS 305 Film Analysis I or DMS 306 Film Analysis II
DMS 409 Nonfiction Film Analysis
DMS 411 Film Theory

Note: Students can take either DMS 303 or DMS 304 and either DMS 305 or DMS 306, but not both.

C. MEDIA AND CULTURE
DMS 213 Immigration & Film
DMS 331 Urban Media
DMS 333 Third World Cinema
DMS 405 Ethnographic Film

(Continued on next page)

DMS 409 Nonfiction Film Analysis
DMS 440 Women Directors
DMS 452 Films of the Civil Rights Era

D. NEW MEDIA THEORY
DMS 350 Information Theories
DMS 415 Special Topics
DMS 425 Visual Media Poetics
DMS 426 Sound Media Poetics
DMS 461 Cyber Theory
DMS 480 Bodyworks
DMS 484 Language Media Poetics

E. PRODUCTION
DMS 101 Basic Filmmaking
DMS 103 Basic Video
DMS 105 Basic Documentary
DMS 121 Basic Digital Arts
DMS 155 New Media

F. ELECTIVES
DMS 109 Introduction to Film Interpretation
DMS 211 Symbolism & Film
DMS 213 Immigration & Film
DMS 215 Special Topics
DMS 216 Special Topics
DMS 303 Video Analysis I
DMS 304 Video Analysis II
DMS 305 Film Analysis I
DMS 306 Film Analysis II
DMS 329 Italian Cinema
DMS 331 Urban Media
DMS 333 Third World Cinema
DMS 350 Information Theories
DMS 381 Film Comedy
DMS 405 Ethnographic Film
DMS 409 Nonfiction Film
DMS 412 Theory of Film Narrative
DMS 415 Special Topics
DMS 416 Special Topics
DMS 417 Special Topics
DMS 418 Special Topics
DMS 430 The Dream in Film & TV
DMS 440 Women Directors
DMS 450 Film & Development of Contemporary Art
DMS 452 Films of the Civil Rights Era
DMS 455 Special Topics
DMS 461 Elements of Machine Culture
DMS 474 Seminar on Postmodernism
DMS 480 Bodyworks
DMS 490 Media Arts Internship
DMS 499 Independent Study

MEDIA STUDY—MINOR

Acceptance Criteria

Minimum GPA of 2.0.
Minimum grade of C+ in any course applied to the minor.

Required Courses

BASIC PRODUCTION (CHOOSE ONE)
DMS 101 Basic Filmmaking
DMS 103 Basic Video
DMS 105 Basic Documentary
DMS 121 Basic Digital Arts
DMS 155 New Media

INTERPRETATION (CHOOSE ONE)
DMS 107 Film History I
DMS 108 Film History II
DMS 109 Introduction to Film Interpretation
DMS 225 Digital Literature Survey
DMS 259 Media Analysis

MEDIA AND CULTURE (CHOOSE ONE)
DMS 331 Urban Media
DMS 333 Third World Cinema
DMS 405 Ethnographic Film
DMS 409 Nonfiction Film
DMS 440 Women Directors
DMS 452 Films of the Civil Rights Era

ADVANCED ANALYSIS (CHOOSE ONE)
DMS 303 Video Analysis
DMS 304 Video Analysis
DMS 305 Film Analysis
DMS 306 Film Analysis
DMS 350 Information Theories
DMS 409 Nonfiction Film
DMS 411 Film Theory
DMS 412 Theory of Film Narrative
DMS 461 Elements of Machine Culture
DMS 474 Seminar on Postmodernism

Summary

Total required credit hours for the minor 24

Electives and Course Groupings (choose two)

Students can choose from DMS courses. Students who desire to take intermediate and advanced production courses must submit a portfolio. Four of the six classes must be at the 300 or 400 level.

Medical Technology

Department of Biotechnical and Clinical Laboratory Sciences

School of Medicine and Biomedical Sciences

26 Cary Hall
South Campus
Buffalo, NY 14214-3005
Phone: (716) 829-3630
Fax: (716) 829-3601
Web site: www.smbs.buffalo.edu/cls
E-mail: dohertyl@buffalo.edu

Paul J. Kostyniak
Chair

Robert L. Klick
Program Director

Leah Doherty
Undergraduate Program Advisor

For a listing of Medical Technology faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Medical technology, also known as clinical laboratory science, deals with the diagnosis and treatment of disease. It is a field of applied biology and chemistry and is appropriate for students interested in the delivery of health-care services. The course of study is interdisciplinary, drawing heavily upon the resources of both the natural sciences and the health sciences faculties. Once admitted into the program, students spend three academic semesters at the university taking program courses covering the areas of biochemistry, immunology, instrumentation, clinical chemistry, microbiology, blood banking, hematology, coagulation, parasitology, mycology, urinalysis, biomolecular techniques, medical genetics, and management. The last semester of the senior year is spent rotating through laboratories in area hospitals with which the program has affiliation agreements.

Degrees Offered

- **Undergraduate:** BS
- **Graduate:** MS

Advisement

Information regarding the profession of medical technology and admission to the program can be obtained from the undergraduate program advisor. Individual advising meetings are scheduled on the South Campus by appointment only.

Credit is given based on individual advanced placement courses and is now only accepted as Pass credit. Students must have a 4 or 5 on the AP exam for the course to be counted in place of a prerequisite.

Transfer Policy

Transfer students must first be accepted by the university and must complete an application from the Office of Admissions and submit official transcripts. These documents must be received well in advance by the university to meet the program deadline of February 1. These dates may be extended based on space availability. Upon university admission, the evaluated transcripts are sent to the program for further review.

The program in medical technology has transfer agreements with SUNY Morrisville, Niagara County Community College, and the medical laboratory technology program at Erie Community College North, and prerequisite course equivalencies have been established. Students with an AAS in medical laboratory technology are encouraged to have their transcripts evaluated by the program. Students from other institutions should contact the undergraduate program advisor for prerequisite course equivalencies. Course descriptions and syllabi may be required in order to establish equivalencies.

Courses from other institutions may not be used to satisfy any upper-division program course requirements.

MEDICAL TECHNOLOGY—BS

Acceptance Criteria

Completion of all prerequisite courses (some exceptions considered).
Minimum GPA of 2.0 overall.
Minimum GPA of 2.0 in prerequisite courses.
Submission of a departmental application and a current copy of UB DARS report to the department.

Advising Notes

Application deadline is February 1. This date may be extended based on space availability. Applications are available at the department office, 26 Cary Hall, South Campus, or online at www.smbs.buffalo.edu/cls. Up to thirty-five full-time students are admitted each fall semester; part-time study is also available.

Prerequisite Courses

BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry
CHE 102 General Chemistry
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
CSE 101 Computers: A General Introduction
MIC 301 Fundamentals of Microbiology
PGY 300 Human Physiology
PSY 207 Psychological Statistics or STA 119 Statistical Methods
One of: PHI 337 Social and Ethical Values in Medicine, PHI 107 Ethics or PHI 117 Professional Ethics

Required Courses

MT 302 Instrumental Analysis
MT 401 Clinical Biochemistry
MT 402 Fundamentals of Immunology
MT 405 Clinical Immunohematology
MT 407 Clinical Chemistry
MT 408 Hospital Chemistry
MT 409 Clinical Microbiology
MT 410 Hospital Microbiology
MT 411 Clinical Hematology
MT 412 Hospital Hematology
MT 413 Clinical Elective
MT 414 Hospital Blood Bank
MT 416 Clinical Parasitology
MT 417 Laboratory Education and Seminar
MT 419 Phlebotomy
MT 420 Clinical Correlations
MT 421 Clinical Urinalysis and Body Fluids
MT 422 Biomolecular Technology and Diagnostics
MT 423 Laboratory Management
MT 429 Clinical Mycology
MT 431 Clinical Hemostasis
MT 432 Introduction to Medical Genetics

Summary

Total required credit hours for the major.....105

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—BIO 200, CHE 101
Spring—BIO 201, CHE 102

SECOND YEAR
Fall—CHE 201
Spring—CHE 202, MIC 301
Fall or Spring—CSE 101, PGY 300; PSY 207 or STA 119; and PHI 337, PHI 107, or PHI 117

THIRD YEAR
Fall—MT 302, MT 401, MT 402
Spring—MT 405, MT 407, MT 409

FOURTH YEAR
Fall—MT 411, MT 416, MT 417, MT 421, MT 422, MT 429, MT 431, MT 432
Spring—MT 408, MT 410, MT 412, MT 413, MT 414, MT 419, MT 420, MT 423

Electives and Course Groupings

Courses Recommended but Not Required
ANA 113 Human Anatomy
APY 248 Human Genetics
MT 101 Introduction to Medical Technology I
MT 150 The Human Body in Health and Disease
MT 201 Medical Terminology or CL 151 Medical Terminology

Medicinal Chemistry

Department of Chemistry

College of Arts and Sciences

363 Natural Sciences Building
North Campus
Buffalo, NY 14260-3000
Phone: (716) 645-6800, ext. 2035
Fax: (716) 645-6963
Web site: www.chem.buffalo.edu
E-mail: chemug@buffalo.edu

Frank Bright
Chair

James W. McIver
Director of Undergraduate Studies

For a listing of Medicinal Chemistry faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The bachelor of science degree program in medicinal chemistry provides (1) a basic chemical understanding of life processes and biological control; (2) a chemical basis for the rational design, synthesis, and mechanism of action of drugs, and selective metabolic inhibition; (3) the basic laboratory skills necessary for research in medicinal chemistry; (4) an appreciation of medicinal chemistry and the chemical aspects of pharmacology; and (5) a chemically oriented foundation for postbaccalaureate research and study in medicinal chemistry and professional studies in the health sciences.

Depending upon the choice of electives, this program can provide an optimum background for employment as a BS-level medicinal chemist in research institutes, industry, and government; for entrance to graduate school in this or related areas; and for entrance to professional school in the health sciences.

Degrees Offered

- **Undergraduate:** BS, Minor
- **Combined:** BS/MS
- **Graduate:** MS, PhD

Advisement

Students may be referred to Dr. James McIver, the director of undergraduate studies, for advisement regarding the prerequisite courses and any other aspect of the program and discipline. Students are advised to meet with him at least once every semester to discuss career goals and curriculum. Academic progress is evaluated at the end of each semester. Students should apply for admission to the department as early as possible in their academic career.

Transfer Policy

Prerequisite courses taken by students at other institutions are generally accepted as equivalent to University at Buffalo courses that have comparable titles (e.g., general chemistry, organic chemistry, calculus).

MEDICINAL CHEMISTRY—BS

Acceptance Criteria
Minimum GPA of 2.0 overall.

Required Courses
BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry or CHE 105 Chemistry: Principles and Applications (recommended)
CHE 102 General Chemistry or CHE 106 Chemistry: Principles and Applications (recommended)
CHE 201 Organic Chemistry or CHE 251 Contemporary Organic Chemistry (recommended)
CHE 202 Organic Chemistry or CHE 252 Contemporary Organic Chemistry (recommended)
CHE 214 and CHE 215 Analytical Chemistry
CHE 301 Intermediate Organic Chemistry Laboratory
CHE 312 Chemistry of Biological Systems (recommended) or BCH 403 Principles of Biochemistry
CHE 349 Physical Chemistry for Life Sciences (recommended) or CHE 319 Physical Chemistry
CHE 455 Synthetic Organic Chemistry
MCH 401 Principles of Med Chem I
MCH 402 Principles of Med Chem II
MCH 498 Undergraduate Research Participation in Medicinal Chemistry*
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 General Physics II Lab
10 credit hours of science electives (approximately 5 courses—see advisor for details)

Summary
Total required credit hours for the major..... 82-84

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—BIO 200; CHE 101 or CHE 105; MTH 141
Spring—BIO 201; CHE 102 or CHE 106; MTH 142

SECOND YEAR
Fall—CHE 201 or CHE 251; PHY 107
Spring—CHE 202 or CHE 252; PHY 108, PHY 158

THIRD YEAR
Fall—CHE 301; CHE 319 or CHE 349; one science elective
Spring—CHE 312, two science electives

FOURTH YEAR
Fall—MCH 401, one science elective
Spring—CHE 455, MCH 402, MCH 498, one science elective (if necessary)

Students should take BCH 403 in the fall semester of the fourth year, if CHE 312 was not taken in the third year.

MEDICINAL CHEMISTRY—MINOR

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.0 in prerequisite courses.

Prerequisite Courses
CHE 201-CHE 202 Organic Chemistry

Required Courses
BCH 403 Principles of Biochemistry or CHE 312 Chemistry of Biological Systems
CHE 301 Intermediate Organic Chemistry Laboratory
MCH 311 The Chemistry of Drug Action
MCH 401 Principles of Medicinal Chemistry I

MEDICINAL CHEMISTRY—BS/MS

Acceptance Criteria

Students must see the graduate secretary ([716] 645-6800, ext. 2030) of the Department of Chemistry for admission to the program.

Required Courses

BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry or CHE 105 Chemistry: Principles and Applications
CHE 102 General Chemistry or CHE 106 Chemistry: Principles and Applications
CHE 201 Organic Chemistry or CHE 251 Contemporary Organic Chemistry
CHE 202 Organic Chemistry or CHE 252 Contemporary Organic Chemistry
CHE 214 and CHE 215 Analytical Chemistry
CHE 301 Intermediate Organic Chemistry Laboratory
CHE 312 The Chemistry of Biological Systems or BCH 403 Principles of Biochemistry
CHE 349 Physical Chemistry for Life Sciences
CHE 350 Physical Chemistry for Life Sciences Laboratory
CHE 455 Synthetic Organic Chemistry
MCH 498 Undergraduate Research Participation in Medicinal Chemistry*
MCH 501 Medicinal Chemistry
MCH 524 Mechanisms of Drug Action
MCH 615-MCH 616 Graduate Research
MCH 622 Seminar
MCH 700 Thesis Guidance
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I
PHY 108 General Physics II
PHY 158 General Physics II Lab
5 credits of science electives

Summary

Total required credit hours for the undergraduate portion..... 72-74

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the Graduate School's policies and procedures manual for requirements for master's degree candidates.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—BIO 200; CHE 101 or CHE 105; MTH 141
Spring—BIO 201; CHE 102 or CHE 106; MTH 142

SECOND YEAR
Fall—CHE 201 or CHE 251; CHE 214, PHY 107, one science elective
Spring—CHE 202 or CHE 252; CHE 215, PHY 108/PHY 158, two science electives

THIRD YEAR
Fall—CHE 301, CHE 349, CHE 350
Spring—CHE 312, MCH 498, one science elective

FOURTH YEAR
Fall—MCH 498, MCH 501, graduate science elective
Spring—CHE 455, CHE 502, MCH 524, graduate science electives

Students should take BCH 403 in the fall semester of the fourth year, if CHE 312 was not taken in the third year.

FIFTH YEAR
Fall—MCH 615, MCH 622, graduate science elective
Spring—MCH 616, MCH 700, graduate science elective

Methods of Inquiry*

Methods of Inquiry

Graduate School of Education

B30 Lockwood Library
North Campus
Buffalo, NY 14260-2200
Phone: (716) 645-3448
Fax: (716) 645-2479
Web site: www.gse.buffalo.edu/cap/moi

Kelly H. Ahuna
Director
kha@buffalo.edu

Christine Gray Tinnesz
Associate Director
cmgray@buffalo.edu

**Not a baccalaureate degree program*

For a listing of Methods of Inquiry faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

This program blends insights from philosophy and cognitive psychology to offer an undergraduate interdisciplinary course in critical thinking. All activities in the course explore the theoretical foundations of effective learning, but the main emphasis is on (1) the use of active learning strategies to ensure thorough understanding and (2) the implementation of frameworks to assist in reaching well-reasoned judgments. In the end, students in Methods of Inquiry strive to take control of their academic and personal lives and to write for themselves a winning script—a script that reflects understanding, purposeful thought, and sound judgment.

Microbiology and Immunology*

Department of Microbiology and Immunology

School of Medicine and Biomedical Sciences

138 Farber Hall
South Campus
Buffalo, NY 14214-3000
Phone: (716) 829-2907
Fax: (716) 829-2158
Web site: www.smbs.buffalo.edu/microb/

John Hay
Chair

Harshad R. Thacore
Director of Undergraduate Studies

**Not a baccalaureate degree program*

For a listing of Microbiology and Immunology faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Department of Microbiology and Immunology does not offer an undergraduate major; however, courses in microbiology and immunology are offered to undergraduate students.

Millard Fillmore College*

Millard Fillmore College

3435 Main Street
South Campus
Buffalo, NY 14214-3007
Phone: (716) 829-3131
Fax: (716) 829-2475
Web site: www.mfc.buffalo.edu
E-mail: mfcadmin@buffalo.edu

Larry Gingrich
Associate Dean

**Not a baccalaureate degree program*

For a listing of Millard Fillmore College course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Certificates of Completion.

Several short programs leading to a Certificate of Completion are available through Millard Fillmore College. These programs may be used as free electives by students pursuing undergraduate degrees in other disciplines, or may be taken independently by persons seeking to meet specific job requirements or career advancement. Certificates of Completion are currently offered in the following areas:

- Computing and network management (tracks I, II, and III)
- Contract management
- Entrepreneurship
- Health and human services
- Health-care administration
- Human resources administration
- International trade
- Paralegal studies
- Public relations/Advertising

Degree Options

Computing and Network Management

These programs offer practical, business-oriented computer education. Course offerings draw upon the University at Buffalo's state of the art computer facilities, including IBM and UNIX mainframes and PC microcomputer labs. Network management expertise can be gained through compilation of courses in telecommunications, voice, data and local area networking, and project analysis and design. Students may choose from three short programs.

Track I—Microcomputer Business Applications

This program focuses on the use and design of microcomputer based systems for today's automated office.

Requirements: MFC 118, MFC 218, MFC 318

Track II—Systems Analysis and Design

Systems analysts work with end users and technicians to build and maintain effective systems that support the needs of modern organizations.

Requirements: MFC 310; four courses from MFC 301, MFC 303, MFC 307, MFC 312, MFC 318

Track III - Network Management

This program prepares individuals to make more informed network management decisions. It examines the history and future of communications, hardware and software used in voice data systems, network services, regulatory policy issues, social and organizational impacts, and new applications and services.

Requirements: MFC 301, MFC 303, MFC 305, MFC 307, MFC 310

Entrepreneurship: Establishing and Managing a Successful Small Business

The success of a small business is usually dependent upon the vision and energies of one individual. Because most small businesses have very limited resources, their owners must be versatile enough to perform all necessary business functions themselves, or else be adept in the use of consultants, such as accountants and lawyers. Above all, owners must have a well-considered plan, and be disciplined about directing all of their energies and resources toward what will advance this plan.

Millard Fillmore College offers a program in entrepreneurship for persons interested in starting a small business or a new enterprise within an existing organization. This certificate of completion program emphasizes activities necessary to achieve success and ways of performing these activities with limited resources. It also examines personal characteristics of successful entrepreneurs and, thus, seeks to help students decide if they should become involved in establishing their own small business.

Requirements: MFC 330, MFC 331, MFC 335, MFC 338

Health and Human Services

The certificate program in health and human services introduces the professional field of health and human services, explores relevant issues, and strengthens the skills needed for effective delivery of services. Courses in this program are useful to persons currently employed by human services organizations or to persons who seek employment opportunities in this field, such as child welfare, social services, or community health.

Requirements: COM 223; MFC 101 or MFC 118; MFC 250 or SSC 103; SSC 390, SSC 428

Health Care Administration

The program is intended for clinicians who find themselves responsible for administrative matters for which they have limited prior training, as well as for middle managers in health care administration who wish to develop further management skills. Conducted with awareness of the critical issues facing health care administrators today, it teaches practical techniques and problem solving skills for managing day-to-day responsibilities. Its primary concern is to develop hands on skills to improve job performance. The program curriculum continues to evolve. All courses are offered at least once during any two year period.

Requirements: MFC 250, MFC 450, MFC 451, MFC 452, plus an additional 6 credit hours selected from MFC 354-MFC 361

International Trade

The Niagara frontier, a binational region, is well situated as a locus for international trade. Many regional companies are widely engaged in world markets. The evening program in international trade is a brief version of more extensive programs offered by the university's Department of Geography at both the undergraduate and the graduate levels. The for-credit courses offered in the certificate of completion program may be useful to practitioners, persons working in the related fields of marketing and international purchasing, and to students in such programs as management and foreign languages.

Requirements: ECO 182, GEO 103 (formerly GEO 112), GEO 330, GEO 334, MGM 301

Paralegal Studies

The certificate in paralegal studies helps prepare students for one of the fastest-growing careers in the country. This program provides students with a unique opportunity to earn a certificate in paralegal studies with the option of receiving college credit. Designed with a practical orientation, and with assignments that are applicable in real-life work situations, the program challenges students to apply knowledge as it pertains to different fact situations. The MFC certificate in paralegal studies is an intensive program designed for working adults who are looking to upgrade their skills or make career changes.

Requirements: The certificate in paralegal studies consists of one course, MFC 332 Paralegal Principles and Procedures.

Students may enhance the program by taking electives. These electives are for students pursuing a career as a paralegal and for pre-law students. Electives include: MFC 334, MFC 336, and MFC 365.

Suggested courses that complement the certificate include: JLS 130, JLS 131, JLS 132, JLS 133, and JLS 201.

Note: Electives and suggested courses listed above must be taken for college credit.

Public Relations/Advertising

This program is designed to develop entry-level competencies in public relations and advertising for the private or public sector. It is intended to train generalists, rather than specialists, by providing practical knowledge, applications, and evaluative ability in a wide range of areas.

Requirements: COM 441, COM 443, MFC 274; One course from Group 1: COM 447, COM 453, COM 455; Two courses from Group 2 (or the two remaining courses from Group 1): COM 231, COM 398, COM 449, COM 490

Advisement

Course Substitutions/Waivers

Due to the brevity of these programs, no more than one course may be substituted or accepted in transfer toward a certificate program. To waive a certificate requirement, an MFC Certificate Program—Waiver Form should be submitted for approval to Millard Fillmore College. A complete course description and unofficial transcript should be attached for any course completed at another institution. Students should contact Millard Fillmore College at (716) 829-3131 to request an MFC Certificate Program—Waiver Form.

Conferral of Certificate

Certificates of completion are awarded only by written request to Millard Fillmore College during the semester in which the final course requirements are being completed. Students should contact Millard Fillmore College at (716) 829-3131 to request an MFC Certificate of Completion Request Form. All certificate courses must have been completed for conventional letter grades, and an overall average of C must have been earned in the program.

Grandfather Clause

Students who start a program and are continuously enrolled (one course per academic year) will be bound by the requirements under which they began the program.

Future Changes Clause

Millard Fillmore College certificate programs meet the changing environment of the marketplace. Changes may be made to certificate programs listed here without notice to accommodate market demand.

Music

Department of Music

College of Arts and Sciences

222 Baird Hall
North Campus
Buffalo, NY 14260-4700
Phone: (716) 645-2758
Fax: (716) 645-3824
Web site: www.music.buffalo.edu

Charles J. Smith
Chair
Office of the Chair
(716) 645-2764, ext. 1245

Karen A. Sausner
Director of Student Programs
(716) 645-2758, ext. 1249

For a listing of Music faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Department of Music offers performers and scholars a stimulating environment in which to develop their talents and pursue various careers in music. Our goal is to provide a diverse array of courses for music majors, minors, and non-majors which will help them to build a strong foundation in many areas of music.

New music plays an important role in the activity of the department, allowing music students a unique opportunity to start their careers on music's leading edge. The department offers more than 150 public performances each year as an extension of the academic programs. A wide range of performance opportunities is available to students. These include participation in UB Symphony Orchestra, Opera Studio, University Chorus, University Choir, UB Concert Band, Percussion Ensemble, UB Jazz Ensemble, UB Marching Band, UB Pep Band, Student Noon Recitals, Contemporary Ensemble, and numerous other small ensembles.

Degrees Offered

- **Undergraduate:** MusB in Performance and BA in Music

Degree Options

The Department of Music offers two degree programs: The Bachelor of Music in Performance (MusB) and the Bachelor of Arts (BA). Both programs offer a strong liberal arts curriculum as well as the opportunity to pursue creative, academic and interdisciplinary studies in music. These programs are designed to prepare students for a diverse array of career possibilities as well as continuing on to graduate study. A minor is offered for students who wish to complement their major course of study with performance and academic classes in the Department of Music.

A major in music theatre is available through the Department of Theatre and Dance.

Advisement

Students interested in the music degree programs should prepare by taking private voice or instrument lessons prior to and throughout high school. While in junior and senior high school, students are advised to participate in ensembles and enroll in theory courses, if available.

Students may also prepare by obtaining the theory book *Scales, Intervals, Keys, Triads, Rhythm, and Meter* (3rd Edition) by Clough, Conley and Boge (W.W. Norton & Company). This book is excellent preparation for the diagnostic music theory examination.

Acceptance Information

Application for admission must be made both to the university and separately to the Department of Music. For music department applications, contact the Student Program Office, 226 Baird Hall, North Campus, (716) 645-2758, ext. 1249 or email mus-info@buffalo.edu. All students should be prepared to take a theory placement exam before beginning undergraduate music studies; students are encouraged to take this exam during their spring auditions.

Applicants requesting the MusB in Performance degree must pass an evaluation audition and as determined by the theory diagnostic examination. Applicants requesting to enter the BA major in music must be accepted for MUS 105 as determined by the theory diagnostic examination. Completion of MUS 105 with a minimum grade of C constitutes acceptance into both degree programs.

Applicants for the BA degree in music are not required to perform an audition unless they wish to include instrument or voice study as part of their music electives.

Academic Requirements

The academic requirements for admission to the Department of Music are the same as those for admission to the university. A GPA of 2.0 in each area of Music Theory and Music History with no grades below C must be maintained to graduate from this degree program.

Transfer Policy

Transfer students must apply to the department as well as to the university. The Office of Student Programs will evaluate the transfer credits in music. Up to one-half of the departmental requirements in the areas of music history, theory (determined by examination), performance (determined by audition), and ensemble can be accepted. Grades of D do not fulfill departmental requirements. Performance credits are transferred for degree fulfillment only if the candidate has been accepted as a performance major at the initial audition for admission. Theory credits transfer into the program based on the results of the transfer theory placement exam. Music history credits transfer into the program upon the approval of the coordinator of history.

MUSIC—BA

Acceptance Criteria
Passing the freshman theory exam and successfully completing MUS 105 are required for conditional departmental acceptance.

Advising Note
Four music major free electives are chosen by advisement with the Director of Student Programs (226 Baird Hall) and the faculty advisor.

Prerequisite Courses
MUS 105 Elementary Harmony and Counterpoint I
MUS 106 Elementary Harmony and Counterpoint II
MUS 213 Music History Survey I

Required Courses
MUS 211 Intermediate Harmony and Counterpoint I
MUS 212 Intermediate Harmony and Counterpoint II
MUS 214 Music History Survey II
MUS 450 Senior Thesis Seminar
Two ensemble courses
Two upper-level music history electives
Four music major free electives
Foreign language courses, as necessary*

Summary
Total required credit hours for the major..... 54-58

See Baccalaureate Degree Requirements for general education and remaining university requirements.

**Proficiency in a foreign language through the second semester of the second year or its equivalent, to be demonstrated through classroom courses or through alternatives. Please see the Director of Student Programs for more information. (S/U grading may not be selected for courses taken to fulfill this departmental requirement.)*

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MUS 105, ensemble
Spring—MUS 106, ensemble

SECOND YEAR
Fall—MUS 211, MUS 213
Spring—MUS 212, MUS 214

THIRD YEAR
Fall—One upper-level music history elective, one music major free elective
Spring—One upper-level music history elective, one music major free elective

FOURTH YEAR
Fall—MUS 450, one music major free elective
Spring—MUS 450, one music major free elective

Electives and Course Groupings

MUSIC ELECTIVES
MUS 205 Jazz Theory
MUS 300 American Classical Music since 1900
MUS 305 Counterpoint 16th Century
MUS 311 Master Composer
MUS 400 Composition Seminar
MUS 401 Introduction to Electronic Music 1
MUS 402 Introduction to Electronic Music 2
MUS 404 Acoustics, Audio, and Computer Systems
MUS 407 Composition
MUS 408 Genres of Music
MUS 409 Music of the Middle Ages
MUS 410 Music of the Renaissance
MUS 411 Music of the Baroque Era
MUS 412 Music of the Classical Period
MUS 413 Music of the Romantic Period
MUS 414 Music of the 20th Century
MUS 416 Counterpoint 18th Century
MUS 418 Music and MIDI
MUS 437 Analysis of Tonal Music
MUS 438 Analysis of 20th-Century Music
MUS 439 Seminar in Music History
MUS 440 Seminar in Music History

Emphasis Areas
19th-Century Music
20th-Century Music
Composition (with faculty permission)
Music & Aesthetics
Music & Literature
Music & Technology
Music Management
Music History
Music Theory

MUSIC PERFORMANCE—MUSB

Acceptance Criteria
Successful audition for primary study on an instrument or in voice and successful completion of MUS 105 with a minimum grade of 2.0 (C) for official departmental acceptance.

Advising Notes
Performance majors receive weekly hour lessons for 4 credit hours each semester. A minimum of six semesters of ensemble must be chosen with faculty advisement. Transfer students are required to complete a minimum of six semesters of weekly hour lessons for 4 credit hours each semester. All performance majors must pass a keyboard proficiency examination. A pre-recital jury and senior recital are to be completed in the senior year.
Piano major requirement: MUS 324 Piano Literature.
Voice major requirement: MUS 221 Vocal Diction (2 semesters).

Required Courses
MUS 105 Elementary Harmony and Counterpoint I
MUS 106 Elementary Harmony and Counterpoint II
MUS 211 Intermediate Harmony and Counterpoint I
MUS 212 Intermediate Harmony and Counterpoint II
MUS 213 Music History Survey I
MUS 214 Music History Survey II
MUS 221 Vocal Diction (voice majors/2 semesters)
MUS 324 Piano Literature (if available; otherwise, students take individual instruction)
Eight 400-level applied instrument or voice courses
Six ensemble courses
Three upper-level music history electives
One upper-level music theory elective
Foreign Language courses, as necessary*

(Continued on next page)

Summary
Total required credit hours for the major 83-88

See Baccalaureate Degree Requirements for general education and remaining university requirements.

**Proficiency in a foreign language through the second semester of the second year or its equivalent, to be demonstrated through classroom courses or through alternatives. Please see the Director of Student Programs for more information. (S/U grading may not be selected for courses taken to fulfill this departmental requirement.)*

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MUS 105; one 400-level applied instrument or voice course; MUS 221 (voice majors), ensemble
Spring—MUS 106; one 400-level applied instrument or voice course; MUS 221 (voice majors), ensemble

SECOND YEAR
Fall—MUS 211, MUS 213; one 400-level applied instrument or voice course; ensemble
Spring—MUS 212, MUS 214; one 400-level applied instrument or voice course; ensemble

THIRD YEAR
Fall—One upper-level music history elective; one upper-level music theory elective, one 400-level applied instrument or voice course; ensemble
Spring—One upper-level music history elective; one 400-level applied instrument or voice course; ensemble

FOURTH YEAR
Fall—One upper-level music history elective; one 400-level applied instrument or voice course; ensemble (optional)
Spring—One 400-level applied instrument or voice course; ensemble (optional)

Electives and Course Groupings

MUSIC ELECTIVES
MUS 300 American Classical Music since 1900
MUS 305 Counterpoint 16th Century
MUS 311 Master Composer
MUS 400 Composition Seminar
MUS 401 Introduction to Electronic Music 1
MUS 402 Introduction to Electronic Music 2
MUS 404 Acoustics, Audio, and Computer Systems
MUS 407 Composition
MUS 408 Genres of Music
MUS 409 Music of the Middle Ages
MUS 410 Music of the Renaissance
MUS 411 Music of the Baroque Era
MUS 412 Music of the Classical Period
MUS 413 Music of the Romantic Period
MUS 414 Music of the 20th Century
MUS 416 Counterpoint 18th Century
MUS 418 Music and MIDI
MUS 437 Analysis of Tonal Music
MUS 438 Analysis of 20th-Century Music
MUS 439 Seminar in Music History
MUS 440 Seminar in Music History

MUSIC—MINOR

Acceptance Criteria

A minimum GPA of 2.0 is required for acceptance. Applicants for the performance minor must pass an audition. All minors must be accepted for MUS 105 as determined by the theory diagnostic examination.

Required Courses

PERFORMANCE MINOR
MUS 105-MUS 106 Elementary Harmony and Counterpoint I-II
MUS 213-MUS 214 Music History Survey I-II
Two semesters in any ensemble
Four semesters of applied instrument or voice courses (2 credit hours per semester)

Total required credit hours for the minor 28

ACADEMIC MINOR
MUS 105-MUS 106 Elementary Harmony and Counterpoint I-II
MUS 213-MUS 214 Music History Survey I-II
Four music major free electives

**Music Electives (see BA chart above)*

Summary

Total required credit hours for the minor 28

Music Theatre

Department of Theatre & Dance

College of Arts and Sciences

285 Alumni Arena
North Campus
Buffalo, NY 14260-5030
Phone: (716) 645-6898
Fax: (716) 645-6992
Web site: www.cas.buffalo.edu/depts/theatredance

Robert Knopf
Chair

Nathan Matthews
Director, Music Theatre

M. A. Casarella
Assistant to the Chair and Coordinator, Undergraduate Studies

For a listing of Music Theatre course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The BFA in music theatre is a performance degree that encompasses courses from three disciplines: music, theatre, and dance. The objective of its comprehensive studies is to create the well-rounded professional able to succeed in an increasingly competitive and exciting field. Performance opportunities range from musicals and dance companies to dramas and operas mounted in state-of-the-art facilities. Prospective majors should meet with the director of music theatre and an undergraduate advisor as soon as possible.

Auditions in dance and music are required. For students with prior training, course requirements may be adjusted, based on placement auditions. If lower-level courses are waived, additional courses may be assigned. This policy applies to all majors.

Degrees Offered

- **Undergraduate:** BFA

Advisement

First-semester students are required to meet with the Director of Undergraduate Advising.

Acceptance Information

Acceptance into the BFA program requires an audition.

MUSIC THEATRE—BFA

Acceptance Criteria

Audition.
Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in required music theatre courses.
Minimum grade of C+ in all required courses.

Prerequisite Courses

MTR 220 Musical Theatre Dance I
MTR 460 Applied Voice for Music Theatre
MUS 105 Elementary Harmony and Counterpoint I*
TH 101 Introduction to Theatre
TH 106 Introduction to Technical Theatre with
TH 135 or TH 136 Practicum
TH 109 Basic Acting 2
THD 201 Modern Dance 1 or THD 263 Jazz Dance 1
THD 210 Tap Dance 1
THD 213 Ballet 1

Required Courses

MTR 210 Music Theatre Repertory
MTR 302 Musical Theatre History
MTR 305 Musical Theatre Workshop
MTR 320 Music Theatre Dance II
MTR 401 Musical Theatre Dance III
MTR 410 Music Theatre Repertory II
MTR 420 Musical Theatre Scene Study
MUS 106 Elementary Harmony and Counterpoint II
TH 208 Method Acting 1
TH 209 Method Acting 2
TH 227 Voice Training 1
TH 235 or TH 236 Production Practicum, or TH 335 or TH 336 Production Practicum (3 credit hours total)
TH 301 Theatre History and Literature 1
TH 308 Poetic Text
TH 309 Mime/Movement for Actors
THD 202 Modern Dance 2* or THD 264 Jazz Dance 2*
THD 211 Tap Dance 2*
THD 214 Ballet 2*
THD 264 Jazz Dance 2*
THD 381 Social Dance Forms 1
THD 415 Mind-Body Integration
Five performance requirements:
Two semesters of MTR 405 GEMMS Musical Theatre Company and three others from the following: MTR 405 GEMMS, TH 341-TH 344 Theatre Studio, THD 337/THD 338 Dance Studio-Zodiaque, THD 340 Dance Studio, MUS 151 University Choir, MUS 321 University Chorus, MUS 350 Music Theatre Workshop

Summary

Total required credit hours for the major..... 88-95

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

Placement in dance, music theatre, and performance courses is based upon auditions. Performance is an option each semester. Vocal training is an option each semester.

FIRST YEAR

Fall—MTR 460, MUS 105*, TH 101; THD 201* or THD 263*; THD 213*
Spring—MTR 460, MUS 106, TH 109; THD 202* or THD 264*; THD 214*, MTR 220

SECOND YEAR

Fall—MTR 210, MTR 405, MTR 460, TH 106/TH 135, TH 208, TH 227
Spring—MTR 320, MTR 405, MTR 460, TH 209

THIRD YEAR

Fall—MTR 410, MTR 460, TH 301, TH 308, THD 210, THD 381, performance**
Spring—MTR 302, MTR 305, MTR 401, TH 309, performance**
Fall or Spring—THD 211

FOURTH YEAR

Fall—THD 415, electives, performance**, vocal training
Spring—MTR 402 (elective), MTR 420, electives, performance**, vocal training

**Based on audition or music theory exam.*

***May choose from: TH 341-TH 344 Theatre Studio, THD 337/THD 338 Dance Studio Zodiaque, THD 340 Dance Studio, MTR 405 GEMMS Musical Theatre, MUS 151 University Choir, MUS 321 University Chorus, MUS 350 Opera Workshop.*

Dance Technique classes must be repeated once for full credit and then may be taken as tutorials.

Nuclear Medicine Technology

Department of Biotechnical and Clinical Laboratory Sciences

School of Medicine and Biomedical Sciences

105 Parker Hall
South Campus
Buffalo, NY 14214-3007
Phone: (716) 838-5889, ext. 115
Fax: (716) 838-4918
Web site: nucmed.buffalo.edu/nmt/

Paul Kostyniak
Chair

Elpida Crawford
Program Director

For a listing of Nuclear Medicine Technology faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Nuclear Medicine Technology program (BS) is offered by the Department of Biotechnical and Clinical Laboratory Sciences and is supported in part by the Department of Nuclear Medicine, School of Medicine and Biomedical Sciences. Please direct inquiries to Elpida Crawford.

Nuclear medicine technology is a health-related profession concerned with use of radioactive materials for diagnostic, therapeutic, and research purposes. Nuclear medicine is one of the diagnostic imaging modalities. Although the scope of nuclear medicine technology is not limited to organ imaging, that is one of the major aspects of the work. It is a highly technical profession with a lot of patient interaction. The nuclear medicine technologist works very closely with the nuclear medicine physician, radiologist or cardiologist. There is a big demand for well-trained nuclear medicine technologists. Jobs are available in hospitals, outpatient facilities and clinics, commercial equipment companies, and commercial radiopharmacies.

The Nuclear Medicine Technology program prepares students for entry-level positions as staff technologists. Each student receives a solid foundation in all nuclear medicine procedures. Students who complete the program are eligible to take national certification examinations in nuclear medicine technology.

Degrees Offered

- **Undergraduate:** BS

Advisement

Students interested in NMT are encouraged to contact David Lang, Senior Undergraduate Academic Advisor for the School of Medicine and Biomedical Sciences, for academic advisement. Mr. Lang can be reached at langdj@buffalo.edu or at (716) 829-3005. Also, interested students are encouraged to visit a hospital nuclear medicine department before applying to the program. For more information on a hospital department tour, students should contact Elpida S. Crawford at esc@buffalo.edu or (716) 838-5889, ext. 115.

Acceptance Information

Freshman Admission Policy: Students who enter the university as declared nuclear medicine technology majors are admitted into the program on a conditional basis. In the second semester of the sophomore year and by February 15, conditionally accepted students must submit a Promotion to Professional Program Request Form to have their academic records reviewed and the scheduling of a personal interview. Students are allowed to register for upper division nuclear medicine technology professional sequence courses if they (1) are making satisfactory progress towards the completion of all lower division math and science prerequisite courses, (2) attain a grade of C or better in all required math and science prerequisite courses completed at that time, and (3) attain a minimum math and science prerequisite GPA of 3.0.

General Admission: Students accepted into nuclear medicine technology as freshmen who do not meet the three conditions listed above, as well as students wishing to change their major, are considered for placement in the program through the regular admission process. All students with a minimum prerequisite course GPA of 2.5 are encouraged to apply. Applications are available in 105 Parker Hall, South Campus or by calling the program office at (716) 838-5889, ext. 115. Applications are also available online at www.nucmed.buffalo.edu/nmt/.

All students must complete all required prerequisite courses prior to the fall semester in which they start taking upper division NMT professional sequence courses.

Transfer Policy

Transfer students must be accepted by the university and meet the program admission criteria. Prerequisite courses taken at another school must be equivalent in content. Questions regarding prerequisite course equivalency should be directed to the program director.

Transfer applicants must complete their university application (which includes sending official transcripts of the fall semester work) prior to January 15.

NUCLEAR MEDICINE TECHNOLOGY—BS

Acceptance Criteria

Applications to the program should be made before February 15 in the sophomore year. A minimum GPA of 2.0 overall and a minimum GPA of 2.5 in prerequisite science and mathematics courses is necessary for consideration for admission into the program. Every applicant who completes the prerequisite courses prior to admission and has the minimum GPA is invited for an interview. Selection is based on GPA and information gathered through the interview process. Decisions regarding acceptance are made prior to the end of the spring semester.

Prerequisite Courses

BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry
CHE 102 General Chemistry
CSE 101 Computers: A General Introduction
NMD 113 Human Anatomy (or ANA 113 Anatomy)
PGY 300 Human Physiology
PHY 101/PHY 151 College Physics I/Lab
STA 119 Statistical Methods (may substitute PSY 207 Psychological Statistics)

Required Courses

NMD 305 Immunology For NMT
NMD 321 Basic Radiation Science
NMD 324 Nuclear Medicine Instrumentation
NMD 325 Radiation Safety for NMT
NMD 327 Radiobiology for NMT
NMD 340 Patient Care and Management in NMT
NMD 399 InVivo Studies I
NMD 400 InVivo Studies II
NMD 401 InVivo Studies III
NMD 415 Radionuclide Therapy
NMD 416 Departmental Management for NMT
NMD 425 Clinical Conference A
NMD 426 Clinical Conference B
NMD 451 Radiopharmacy
NMD 496 Clinical Rotation (repeatable for credit)

Summary

Total required credit hours for the major.....95.5

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—BIO 200, CHE 101
Spring—BIO 201, CHE 102, CSE 101

SECOND YEAR
Fall—NMD 113 (or ANA 113), PHY 101, PHY 151; CHE 201 (recommended), NMD 210 (recommended)
Spring—PGY 300, STA 119 (may substitute PSY 207); CHE 202 (recommended)

THIRD YEAR
Fall—NMD 305, NMD 321, NMD 325, NMD 327, NMD 399
Spring—NMD 324, NMD 340, NMD 400, NMD 451

FOURTH YEAR
Fall—NMD 401, NMD 425, NMD 496
Spring—NMD 415, NMD 416, NMD 426, NMD 496

Nursing

School of Nursing

1040 Kimball Tower
South Campus
Buffalo, NY 14214-3079
Phone: (716) 829-2537
Fax: (716) 829-2021
Web site: nursing.buffalo.edu
E-mail: nurse-studentaffairs@buffalo.edu

Jean K. Brown
Dean

Elaine R. Cusker
Assistant Dean, Student Affairs

Martha J. Kemsley
Director of Undergraduate Studies

Elizabeth A. Kalfas
Academic Advisor

Kristie L. Kaminiski
ABS Academic Advisor

For a listing of Nursing faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The programs leading to the bachelor's of science (BS) in nursing prepare students to become professional registered nurses (RN), working in a variety of healthcare settings, meeting the diverse needs of individuals and families across the life span and among all community groups. They are designed for individuals who feel challenged by the complex and ever-changing health needs of society, and who desire to respond to these needs.

The curricula is community-based, initially emphasizing primary health care, which includes health promotion, risk reduction, and disease prevention; subsequently, emphasizing the care of those with chronic as well as acute and complex illnesses. Upper-division courses focus on the knowledge and skills required to provide comprehensive nursing care in various clinical practice settings, ethical/legal dimensions of the healthcare system, pharmacological components of care, nursing research, and principles and techniques of management within a health-system context.

Graduates of these baccalaureate programs base their practice on theories, critical-thinking, and research findings from nursing science as well as other disciplines, such as biological and behavioral sciences.

Degrees Offered

- **Undergraduate:** Basic BS, Accelerated BS (ABS), RN/BS
- **Graduate:** Advanced Certificate (Nursing Education, Medical/Health Informatics), MS Adult Health Clinical Nurse Specialist, MS Nurse Practitioner, MS Nurse Anesthesia, Post-MS Advanced Certificate Nurse Practitioner, PhD

Degree Options

- Basic BS Nursing Program: Contact Dr. Elaine Cusker at (716) 829-2537.
- Accelerated Bachelor of Science (ABS) Program: Contact Dr. Martha Kemsley at (716) 829-3268.
- RN/BS Program: Contact Dr. Elaine Cusker at (716) 829-2537.

Advisement

- Basic BS Nursing Program: Contact Elizabeth Kalfas at (716) 829-2537.
- Accelerated Bachelor of Science (ABS) Program: Contact Kristie Kaminiski at (716) 829-2537.
- RN/BS Program: Contact Elizabeth Kalfas at (716) 829-2537.

Transfer Policy

Prerequisite courses may be transferred from other educational institutions if they are equivalent. Students should consult with the School of Nursing Student Affairs Office to determine equivalency.

NURSING BASIC PROGRAM—BS

Acceptance Criteria

FRESHMAN STUDENT ADMISSIONS

Admission is competitive and granted on a space available basis.

Applicants to UB selecting nursing as their choice of major will be reviewed for admission and, if qualified, will be admitted to both UB and the School of Nursing.

By the sophomore year, students must have earned a minimum overall 2.7 GPA, and completed at least five of the prerequisite nursing courses, which must include anatomy and physiology. A minimum grade of "C" is required in all prerequisites.

To remain in the major, students are required to maintain an overall 2.7 GPA by the start of the junior year, complete all prerequisites in four semesters, and maintain good academic standing within UB and the School of Nursing.

TRANSFER OR UB STUDENT ADMISSIONS

Admission is competitive and granted on a space available basis.

All applicants must apply to both UB and the School of Nursing. UB application and transcripts are due by February 15, while School of Nursing applications are due by March 31.

Successful candidates will present a strong academic record. Applicants must complete most of the prerequisites, which must include anatomy and physiology, and be able to complete all prerequisites by the following fall semester. A minimum grade of "C" is required in all prerequisites.

To remain in the major, students are required to maintain good academic standing within UB and the School of Nursing.

Prerequisite Courses

ANA 113 Human Anatomy (4)
BCP 302 Introduction to Pharmacology (4)
Chemistry (if not already taken in high school; official transcript required) (4-5)
MIC 301/NUR 301 Fundamentals of Microbiology (4)
NTR 108 Human Nutrition (3)
NUR 101 Introduction to Nursing (2)
NUR 250 Human Growth and Development (3)
PGY 300 Human Physiology (4)
PGY 412 Applied Physiology (2)
PHI 337 Social and Ethical Values in Medicine (3)
PSY 101 Introductory Psychology (3)
SOC 101 Introduction to Sociology (3) or UGC 211 American Pluralism and the Search for Equality or cognates
Statistics (one of the following): CEP 207 Introduction to Statistics and Computing, PSY 207 Psychological Statistics, STA 119 Statistical Methods (4)
Applicants with a previous non-nursing bachelor's degree from a U.S. institution or international equivalent and a minimum overall GPA of 3.0 will be waived from the following prerequisites: NUR 293 Informatics and the Health Care Environment (3), PHI 337 Social and Ethical Values in Medicine (3), PSY 101 Introductory Psychology (3), and SOC 101 Introduction to Sociology (3) or UGC 211 American Pluralism and the Search for Equality (or cognates) (3)

Required Courses

NUR 293 Informatics and the Health Care Environment (3)
NUR 309 L Health Assessment: Concepts and Skills (4)
NUR 310 Assessment of Families and Communities (3)
NUR 348 Introduction to Nursing Research (3)
NUR 370 Nursing as a Profession (3)
NUR 371 Health-Care Delivery Perspectives (3)
NUR 372 Health Promotion (3)
NUR 373L Basic Nursing Therapeutics (3)
NUR 374 Primary Care with Families across the Life Span (5)
NUR 374L Nursing Therapeutics in Primary Care (3)
NUR 376 Principles of Nursing Leadership (1)
NUR 447 Advanced Clinical Nursing (3)

(Continued on next page)

NUR 470 Health Maintenance and Restoration (4)
NUR 470L Nursing Therapeutics in Health Maintenance and Restoration (4)
NUR 471 Clinical Seminar: Health Maintenance and Restoration (1)
NUR 472 Nursing Management of Patient Care (1)
NUR 475 Nursing Management in Complex Situations (2)
NUR 478 Concepts of Complex Acute Care (3)
NUR 478L Nursing Therapeutics in Complex Acute Care (4)
NUR 479 Clinical Seminar: Complex Acute Care (1)

Summary
Total required credit hours for the major..... 100-101

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

(Assumes high school chemistry has already been completed)

FIRST YEAR
Fall—ANA 113, NUR 101, PSY 101
Spring—NTR 108, NUR 250, PGY 300

SECOND YEAR
Fall—BCP 302, NUR 293; SOC 101 or UGC 211; one statistics course (one of the following: CEP 207, PSY 207, STA 119)
Spring—MIC 301/NUR 301, PGY 412, PHI 337

THIRD YEAR
Fall—NUR 309, NUR 370, NUR 371, NUR 372, NUR 373L
Spring—NUR 310, NUR 348 (or may be taken in fall of fourth year), NUR 374, NUR 374L, NUR 376

FOURTH YEAR
Fall—NUR 348 (or spring of third year), NUR 470, NUR 470L, NUR 471, NUR 472
Spring—NUR 447, NUR 475, NUR 478, NUR 478 L, NUR 479

ACCELERATED BACHELOR OF SCIENCE (ABS) OPTION FOR SECOND-DEGREE STUDENTS—BS

Acceptance Criteria
Admission is highly competitive and granted on a space available basis.

All applicants must apply to both UB and the School of Nursing. UB application and transcripts are due by October 15, while School of Nursing applications are due by November 15.

All applicants must possess at least an earned bachelor's degree.

All potential ABS students must submit a current resume, goal statement, and complete transcripts along with completed applications. Selected candidates will be invited for interviews.

Student must have completed, or show the ability to complete, all prerequisite courses before the summer start date, with a minimum overall 3.0 GPA.

Advising Notes
Academic advisement for students applying to the ABS program is provided by the School of Nursing.

Upon application, prerequisite courses (listed below) must be fulfilled or a plan approved to complete all prerequisites by enrollment. Equivalent courses may be approved by the School of Nursing.

Minimum requirements must be met for admission into the accelerated BS option; however, it is expected that successful applicants will exceed these basic requirements.

Prerequisite Courses
ANA 113 Human Anatomy (4)
BCP 302 Introduction to Pharmacology (4) (if needed, NUR 503 Pharmacotherapeutics in Advanced Nursing Practice* (3) is recommended)
Chemistry (if not already taken in high school; official transcript required) (4-5)
MIC 301/NUR 301 Fundamentals of Microbiology (4)
NTR 108 Human Nutrition (3)
NUR 250 Human Growth and Development (3)
PGY 412 Applied Physiology (2)
PGY 300 Human Physiology (4)
Statistics (one of the following): CEP 207 Introduction to Statistics and Computing, PSY 207 Psychological Statistics, STA 119 Statistical Methods (4)

Recommended Prerequisite Courses
NUR 293 Informatics and the Health Care Environment (3)
PHI 337 Social and Ethical Values in Medicine (3)
One genetics course

Required Courses
NUR 309 Health Assessment: Concepts and Skills (4)
NUR 310 Assessment of Families and Communities (3)
NUR 370 Nursing as a Profession (3)
NUR 373L Basic Nursing Therapeutics (3)
NUR 374 Primary Care with Families across the Lifespan (5)
NUR 374L Nursing Therapeutics in Primary Care (3)
NUR 440 Critical Elements in Nursing Leadership (4)
NUR 447 Advanced Clinical Nursing (3)
NUR 470 Health Maintenance and Restoration (4)
NUR 470L Nursing Therapeutics in Health Maintenance and Restoration (4)
NUR 471 Clinical Seminar: Health Maintenance and Restoration (1)
NUR 478 Concepts of Complex Acute Care (3)
NUR 478L Nursing Therapeutics in Complex Acute Care (4)
NUR 479 Clinical Seminar: Complex Acute Care (1)
NUR 511 Health Care Systems, Policy and Ethics (3)*
NUR 512 Research Methods for the Practice Professions (4)*
NUR 518 Health Promotion and Risk Reduction (2)*

Summary
Total required credit hours for the major.....91-97*

**37-43 are required to apply; 9-12 are graduate level*

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements
Once students begin the ABS nursing sequence, all must progress through the program together as a "cohort" group or learning community.
Summer 1 (first 7 weeks)—NUR 309 L, NUR 373 L, NUR 511*
Summer 2 (last 7 weeks)—NUR 374, NUR 374 L, NUR 518*
Fall—NUR 310, NUR 370, NUR 470, NUR 470 L, NUR 471
Spring 1 (first 12 weeks)—NUR 440, NUR 478, NUR 478 L, NUR 479, NUR 512*
Spring 2 (last 3 weeks)—NUR 447

**Graduate level credit*

RN/BS NURSING PROGRAM—BS

For students with R.N. licensure

Acceptance Criteria

Admission is competitive and granted on a space available basis. However, a cohort of at least 8 students is required to run this program each year. Admission is for the fall semester only.

Applicants must complete two applications: one for the University and the School of Nursing. Applications should be completed as early as possible, but June 1 is recommended to ensure consideration for the fall semester.

Student must have at least an overall 2.7 GPA.

All applicants must possess an AAS degree or diploma in nursing completed prior to entry to UB, as well as be licensed as a professional RN in New York State.

Advising Notes

Applications are only accepted for fall admission. The recommended deadline is June 1.

Every student must receive advisement each semester to ensure that courses are taken in the correct sequence. The sequence below provides one plan for completing the major courses; non-nursing prerequisites and general education courses should be added as needed. Students may complete the program either part-time or full-time. Students who have completed an articulated physical assessment course may be able to complete the program in one year of full-time study.

Every student must complete a program plan of study upon entry.

Prerequisite Courses

ANA 113 Human Anatomy (4)
BCP 302 Introduction to Pharmacology (4)
Chemistry (if not already taken in high school; official transcript required) (4-5)
MIC301/NUR 301 Fundamentals of Microbiology (4)
NTR 108 Human Nutrition (3)
NUR 250 Human Growth and Development (3)
NUR 293 Informatics and the Health Care Environment (3)
PGY 300 Human Physiology (4)
PGY 412 Applied Physiology (2)
SOC 101 Introduction to Sociology (3) or UGC 211 American Pluralism and the Search for Equality or cognates
Statistics (one of the following): CEP 207 Introduction to Statistics and Computing, PSY 207 Psychological Statistics, STA 119 Statistical Methods (4)

All RN students who graduate from hospital-based diploma programs in nursing are required to successfully complete nursing proficiency exams offered by Excelsior College (formerly Regents College). Please consult with the School of Nursing advisor before taking these exams.

Required Courses

NUR 309 L Health Assessment: Concepts and Skills (4)
NUR 310 Assessment of Families and Communities (3)
NUR 348 Introduction to Nursing Research (3)
NUR 370 Nursing as a Profession (3)
NUR 371 Health-Care Delivery Perspectives (3)
NUR 372 Health Promotion (3)
NUR 377 Issues in Primary Care (2)
NUR 440 Critical Elements in Nursing Leadership (4)
NUR 473 RN Transition to Baccalaureate Nursing (4)
NUR 494 Baccalaureate Nursing Leadership Capstone Experience (4)

Summary

Total required credit hours for the major.....70-75*

**40-45 are prerequisites, many of which may be equivalent transfer courses*

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

Once students begin the RN/BS nursing sequence, all must progress through the program together as a "cohort" group or learning community. Classes will meet no more than two designated days a week.

FIRST YEAR

Fall—NUR 310, NUR 370, NUR 377
Spring—NUR 372, NUR 440
Summer—NUR 309L

SECOND YEAR

Fall—NUR 348, NUR 473
Spring—NUR 371, NUR 494

All students must complete the appropriate general education program. Some required prerequisite courses may satisfy general education requirements. Contact the RN advisor to determine required courses.

**Most students with an associate's degree have taken courses that meet some of the prerequisite courses. The RN advisor assists in determining any remaining prerequisites.*

Nutrition*

Department of Exercise and Nutrition Sciences

School of Public Health and Health Professions

15 Farber Hall
South Campus
Buffalo, NY 14214
Phone: (716) 829-3680
Fax: (716) 829-3700
Web site: sphhp.buffalo.edu/ens/index.php

John X. Wilson
Chair

**Not a baccalaureate degree program*

For a listing of Nutrition faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

Occupational Therapy

Department of Rehabilitation Sciences

School of Public Health and Health Professions

515 Kimball Tower
South Campus
Buffalo, NY 14214-3079
Phone: (716) 829-3141
Fax: (716) 829-3217
Web site: sphhp.buffalo.edu/ot

Robert Burkard
Chair

Jo A. Schweitzer
Director of Clinical Education

Susan M. Nochajski
Program Director

For a listing of Occupational Therapy faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Occupational Therapy Program, as part of the Rehabilitation Science Department in the School of Public Health and Health Professions at the University at Buffalo, is based on the philosophical belief that people have a vital need for occupation. Occupation is defined as the meaningful and productive ways in which people use their time. It includes activities such as self-care, play, learning, work, and leisure. A person's engagement in occupations fulfills four primary functions: (1) to acquire skills and behaviors necessary for insuring one's survival, (2) to achieve a sense of quality in one's life, (3) to contribute to the progress and well-being of society, and (4) to promote one's personal physical and mental well-being. The ability to engage in occupation and realize these four functions may be compromised as a result of illness, disability, or other life circumstances.

A fundamental principle of the Occupational Therapy Program is that human beings learn and adapt through active engagement in occupations. Learning and adaptation occurs when a person receives information from his or her senses, processes it, and compares it with knowledge and experience previously obtained. Through repetition of these experiences, new behaviors are demonstrated and used. These fundamental concepts are applied to the clients that we prepare our students to work with, as well as to the students themselves.

Clients who receive occupational therapy services are engaged in active, meaningful occupational activities. Following observation, evaluation, and consultation with the client and family, therapists choose activities that are appropriate for the individual's developmental level, skill level, and the environment in which the client will function. This is done to enable the client to move towards occupational goals and a greater degree of health and independence.

The entry-level professional Occupational Science/Occupational Therapy program is a five year combined BS/MS program. Preceding their professional preparation, students receive a liberal arts education in their pre-professional studies. The professional program, structured to prepare students for personal and professional development, is flexible enough to meet the needs and interests of individual students while still ensuring that upon graduation they will be competent to enter the profession.

Professional-level classes begin in the summer immediately preceding the junior year. The ten-week summer program includes ANA 407 Gross Human Anatomy (6 credit hours), which meets daily for eight weeks, and OT 351 OT Practice Skills I (2 credit hours), which continues for ten days following ANA 407. Three additional academic semesters and a summer at the undergraduate level provide learning experiences structured to integrate theory and practice. During the second semester of the fourth year, students progress to the MS component of the program. At this time, students register for six months of full-time supervised fieldwork experience.

Students choose fieldwork sites by a lottery system and in consultation with the fieldwork director. Additional fieldwork experiences in such specialized areas of practice as developmental disabilities, substance abuse, and ergonomics are available as electives. The program maintains clinical affiliation agreements with more than 150 health-care facilities throughout the United States for student placement. Students should expect to leave the Western New York area to fulfill this requirement. Upon completion of fieldwork, students return to the campus for the fifth year of the program. Students must complete all requirements of the professional component of the program, including fieldwork and the graduate research project, within a five-year time period.

Degrees Offered

- **Combined:** BS/MS in Occupational Science/Occupational Therapy
- **Graduate:** MS in Occupational Therapy, Graduate Certificate in Assistive/Rehabilitation Technology

Degree Options

Students are awarded the combined BS/MS degree in occupational science/occupational therapy upon completion of all program and university requirements. Students who do not progress to the MS component of the program will be awarded a BS in occupational science after the successful completion of the 129 credits in the BS portion of the program. Only students who are awarded the combined BS/MS are eligible to take the national certification examination administered by the National Board for Certification in Occupational Therapy (NBCOT). Contact information: NBCOT, located at 12 South Summit Avenue, Suite 100, Gaithersburg, MD 20877-4150. Phone: (301) 990-7979; Fax: (301) 869-8492. The program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), 4720 Montgomery Lane, P.O. Box 31220, Bethesda, MD 20824-1220, (301) 652-AOTA. NOTE: A felony conviction may affect a graduate's eligibility to sit for the NBCOT certification examination or attain state licensure.

Advisement

During the pre-professional phase of the program (years 1 and 2), UB occupational therapy students should contact Diane Gayles at (716) 829-3434, ext. 287 or Cassandra Walker-Whiteside at (716) 829-3434, ext. 410 for academic advisement; transfer students should contact Douglas Frye at (716) 829-3141, ext. 190 or MaryAnn Venezia at (716) 829-3141, ext. 184.

Upon promotion to the professional sequence of the program, each student is assigned a faculty advisor from the Occupational Therapy program.

Acceptance Information

The Occupational Therapy program has a Freshman Admission Policy. Students who declare occupational therapy as their major on the UB application are provisionally accepted into the Occupational Therapy program. Courses in the first two years of the BS program meet the general education requirements and occupational science prerequisite courses. To be guaranteed promotion to the professional component of the program (starting in year 3), students must complete the prerequisite courses with a minimum GPA of 3.0 and a grade of C or better in each prerequisite course. Promotion to the professional sequence is competitive for those students whose prerequisite GPA is between 2.80 and 2.99. Acceptance to the professional sequence is limited to approximately forty students.

By January 15 of the second year (sophomore) of the program, students accepted into the Occupational Therapy program under the Freshman Admission or Transfer Student Admission Policy (see below), must complete a Promotion to Professional Sequence form and submit evidence of a minimum of seventy hours of volunteer/work experience in a United States occupational therapy setting providing direct patient/client care under the supervision of an occupational therapist. This experience must be undertaken within two years prior to application in a maximum of two (2) settings. Verification/Evaluation forms are available online; only ratings of "Excellent" or "Good" will receive credit toward this requirement.

Promotion to the professional sequence is competitive for students other than those admitted as freshman or transfer students. Students not accepted through the freshman or transfer admission policies must (1) have a minimum grade of C in all prerequisite courses; (2) complete, by January 15 of the sophomore year, a minimum of seventy hours of recent (within the past two years) volunteer or work experience in a direct patient care environment, under the supervision of an occupational therapist; and (3) submit an application by January 15 of the sophomore year.

Transfer Policy

Students can enter the Occupational Therapy program as transfer students from other institutions. Students who declare occupational therapy as their major on the UB application are provisionally accepted into the Occupational Therapy program. To be guaranteed promotion to the professional component of the program (starting in year 3), students must complete the prerequisite courses with a minimum GPA of 3.0 and a grade of C or better in each prerequisite course. Promotion to the professional sequence is competitive for those students whose prerequisite GPA is between 2.80 and 2.99. Acceptance to the professional sequence is limited to approximately forty students.

Courses completed at other colleges or universities are not automatically accepted by the program as fulfilling the prerequisite requirements. Determination is made by an evaluation of the student's transcripts, descriptions of courses that he/she has taken, and credit hours completed. It is recommended that prospective transfer students contact the department to determine the suitability of prior coursework.

OCCUPATIONAL SCIENCE/OCCUPATIONAL THERAPY—BS/MS

Acceptance Criteria

In order to be accepted into the professional sequence of the program, students must:

Complete all prerequisite courses with a grade of C or better;

Maintain a minimum GPA of 2.8 in all prerequisite courses;

Complete 70 hours of volunteer work in an occupational therapy setting providing direct patient/client care under the supervision of an occupational therapist; the volunteer form is to be submitted with the Promotion to Professional Sequence form.

Complete a Promotion to Professional Sequence form, which includes a personal statement, by the January 15th prior to the third year of the program;

The Occupational Therapy program has a freshman and transfer admission policy in effect. Students indicating on the University at Buffalo application that occupational therapy is their intended major are provisionally accepted into the program. To be guaranteed promotion to the professional component of the program (starting in year 3), students must complete the prerequisite courses with a minimum GPA of 3.0 and a grade of C or better in each prerequisite course. Promotion to the professional sequence is competitive for those students whose prerequisite GPA is between 2.80 and 2.99. Acceptance to the professional sequence is limited to approximately forty students.

Advising Notes

During the pre-professional phase of the program (Years 1 and 2), UB occupational therapy students should contact Diane Gayles or Cassandra Walker-Whiteside at (716) 829-3434 for academic advisement; transfer students should contact Douglas Frye at (716) 829-3141, ext. 190 or MaryAnn Venezia at (716) 829-3141, ext. 184. Upon promotion to the professional sequence of the program, each student is assigned a faculty advisor from the occupational therapy program.

Prerequisite Courses

ANA 113/OT 113 Human Anatomy (offered fall semester only)
OT 230 Fundamentals of Therapeutic Interaction (offered spring semester only)
OT 301 Orientation to Occupational Therapy
OT 317 Medical Terminology (offered fall semester only)
PGY 300 Human Physiology
PHI 101 Introduction to Philosophy
PHY 101/PHY 151 College Physics I with Lab (offered fall semester only)
PSY 101 Introductory Psychology
STA 119 Statistical Methods
PSY 322 Abnormal Psychology
SOC 101 Introduction to Sociology
UGC 211 American Pluralism or SOC 211 Sociology of Diversity

Required Courses

Eligibility is limited to those students who have been accepted into the professional sequence of the Occupation Therapy program.
ANA 407 Gross Human Anatomy
OT 314 Pediatric Dysfunction and Occupation
OT 322 Rehabilitation Medicine II
OT 341 Critical Analysis of Scientific Literature
OT 342 Neuroscience I
OT 343 Neuroscience II
OT 344 Neuroanatomy I
OT 345 Neuroanatomy II
OT 346 Introduction to Scientific Writing
OT 351 OT Practice Skills I
OT 352 OT Practice Skills II
OT 353 OT Practice Skills III
OT 361 Functional Anatomy
OT 371 Human Development I
OT 372 Human Development II
OT 381 Occupational Therapy Theory
OT 382 Issues in Occupational Therapy Service Delivery
OT 402 Psychosocial Practice I
OT 403 Psychosocial Practice II
OT 405 Physical Disabilities Practice
OT 410 Applied Neurophysiology

(Continued on next page)

OT 412 Rehabilitation Medicine I
OT 440 Applied Treatment in Pediatrics
OT 450 Prosthetics and Orthotics
OT 504 Advanced Clinical Management for OT
OT 505 Applied Geriatrics
OT 507 Art and Science of Sensory Integration
OT 509 Community-Based Practice
OT 551 Occupational Behavior Theory
OT 560 Level II Fieldwork
OT 561 Level II Fieldwork
OT 563 Project Seminar I
OT 564 Project Seminar II
Two electives

Summary

Total required credit hours for the undergraduate portion (occupational science) 109
Total required credit hours for the BS/MS (occupational science/occupational therapy) 153

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—ANA 113, PSY 101
Spring—OT 230, PSY 322

SECOND YEAR
Fall—OT 317, PHY 101/PHY 151, SOC 101; OT 301 (direct transfer students only must take in junior year)
Spring—PGY 300, PHI 101, STA 119, UGC 211

SUMMER BEFORE THIRD YEAR
Summer—ANA 407, OT 351

THIRD YEAR
Fall—OT 314, OT 412, OT 341, OT 342, OT 344, OT 346, OT 371, OT 381; OT 301 (direct transfer students only)
Spring—OT 322, OT 343, OT 345, OT 352, OT 361, OT 372, OT 382

SUMMER BEFORE FOURTH YEAR
Summer—OT 402, OT 403

FOURTH YEAR
Fall—OT 353, OT 405, OT 410, OT 440, OT 450
Spring—OT 560, OT 561

FIFTH YEAR
Fall—OT 504; OT 505 or elective; OT 506, OT 551, OT 563
Spring—OT 507 or elective; OT 509, OT 564, elective

Electives and Course Groupings

OT 530 Computer Access 1
OT 533 Wheeled Mobility and Seat
OT 534 Ergonomics and Job Accommodation
OTD 517 Principles of OT with the Physically Disabled
OTD 532 Societal Impact on Persons with Disabilities
OTE 514 Advanced Evaluation/Treatment Principles I - Infants and Toddlers
OTE 515 Advanced Evaluation/Treatment Principles II - Preschool Children
OTE 516 Advanced Evaluation/Treatment Principles III - School Age Children
Not all courses listed are offered annually

Pharmaceutical Sciences

Department of Pharmaceutical Sciences

School of Pharmacy and Pharmaceutical Sciences

517 Hochstetter Hall
North Campus
Buffalo, NY 14260-1200
Phone: (716) 645-2842
Fax: (716) 645-3693
Web site: www.pharmacy.buffalo.edu/psci_adm_ugrad_index.shtml

Kathleen M. K. Boje
Undergraduate Director and Advisor
boje@acsu.buffalo.edu

Cindy Konvitz
Advisor for Pre-Pharmacy and Pre-Pharmaceutical Science students
cfk@buffalo.edu

For a listing of Pharmaceutical Sciences faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Pharmaceutical Sciences major program is a four-year program leading to a bachelor of science degree in pharmaceutical sciences.

While the major is structurally a basic science program (like biochemistry, biology, etc.), it is also a unique interdisciplinary field of study that seeks to achieve better understanding and control of the factors influencing clinical response to drug therapy.

Areas of interest in pharmaceutical sciences range from the physical chemistry of pharmaceutical systems, which is concerned with the development and optimization of the physical-chemical properties of traditional and novel drug dosage forms and systems; to biopharmaceutics, which encompasses the study of the relationship between the nature and intensity of biologic effects of drugs and various dosage formulation factors; to pharmacokinetics, which is the science of the quantitative analysis of drug concentration and drug effects in the body; to clinical pharmacokinetics, which is concerned with the application of pharmacokinetics to the safe and effective therapeutic management of individual patients.

Degrees Offered

- **Undergraduate:** BS, Minor
- **Combined:** BS/MS

PHARMACEUTICAL SCIENCES—BS

Acceptance Criteria

Minimum GPA of 2.5 overall.
Minimum GPA of 2.5 in all prerequisite science courses.

Advising Notes

Application to the department with a UB DARS report is recommended early in the second semester of the second year.

Prerequisite Courses

BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry
CHE 102 General Chemistry
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I
MTH 122 Survey of Calculus and Its Applications II or MTH 142 College Calculus II
PHY 101 College Physics I or PHY 107 General Physics I (no lab)
PHY 102 College Physics II or PHY 108 General Physics II (no lab)
One science elective

Required Courses

BCH 403 Principles of Biochemistry
BCP 405 Principles of Pharmacology I
BCP 406 Principles of Pharmacology II
CHE 214 Introduction to Analytical Chemistry
PGY 451 Human Physiology I
PGY 452 Human Physiology II

(Continued on next page)

PHC 311 Pharmaceutical Mathematics and Statistics
PHC 312 Physical Pharmacy
PHC 331 Case Studies in the Pharmaceutical Sciences
PHC 332 Introduction to Research
PHC 411 Introduction to Pharmacokinetics and Biopharmaceutics I
PHC 413 Pharmaceutics Seminar
PHC 414 Pharmaceutics Seminar
PCH 420 Pharmaceutical Analysis
PHC 421 Pharmaceutical Principles
PHC 425 Pharmaceutical Biotechnology: From Bench to Bedside
PHC 426 Pharmaceutical Biotechnology Virtual Laboratory
PHC 431 Important Advances in Pharmaceutical Sciences
PHC 432 Methods of Scientific Communication
PHC 498 Undergraduate Research Participation in Pharmaceutical Sciences
Science electives or PHC 498 Undergraduate Research Participation in Pharmaceutical Sciences
Two science electives

Summary

Total required credit hours for the major.....89

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—BIO 200, CHE 101
Spring—BIO 201, CHE 102

SECOND YEAR
Fall—CHE 201; MTH 121 or MTH 141; PHY 101 or PHY 107 (no lab)
Spring—CHE 202; MTH 122 or MTH 142; PHY 102 or PHY 108 (no lab); one science elective

THIRD YEAR
Fall—CHE 214, PGY 451, PHC 311, PHC 331, one science elective
Spring—PGY 452, PHC 312, PHC 332, PHC 498, PHC 420, PHC 421, one science elective

FOURTH YEAR
Fall—BCH 403, BCP 405, PHC 411, PHC 413, PHC 431; or PHC 498
Spring—BCP 406, PHC 414, PHC 425, PHC 426, PHC 432; science electives or PHC 498

PHARMACEUTICAL SCIENCES—BS/MS

About the Program

This combined degree program for academically qualified students allows for completion of both BS and MS requirements in the pharmaceutical sciences in less than six years. Students in the BS program in pharmaceutical sciences with good-to-excellent academic records may apply. Students in this program will be awarded one degree only (BS/MS), and therefore do not graduate with a separate BS.

Acceptance Criteria

Accepted in the pharmaceutical sciences BS program.

Minimum GPA of 3.0 overall in all undergraduate courses and minimum GPA of 3.0 in the required third year pharmaceutical sciences courses.

Application to the department with a UB DARS report and two faculty letters of recommendation by September 30 in the first semester of the fourth year.

Prerequisite Courses

See Pharmaceutical Sciences—BS chart for prerequisite courses.

Required Courses

BCH 403 Principles of Biochemistry
BCP 405 Principles of Pharmacology I
BCP 512 Principles of Pharmacology II
CHE 214 Introduction to Analytical Chemistry
PGY 451 Human Physiology I
PGY 452 Human Physiology II
PHC 311 Pharmaceutical Mathematics and Statistics
PHC 312 Physical Pharmacy
PHC 331 Case Studies in Pharmaceutical Sciences
PHC 332 Introduction to Research
PHC 411 Introduction to Pharmacokinetics and Biopharmaceutics I
PHC 413 Pharmaceutics Seminar
PHC 414 Pharmaceutics Seminar
PHC 421 Pharmaceutical Principles
PCH 420 Pharmaceutical Analysis
PHC 425 Pharmaceutical Biotechnology: From Bench to Bedside
PCH 426 Pharmaceutical Biotechnology Virtual Laboratory
PHC 431 Important Advances in Pharmaceutical Sciences
PHC 432 Methods of Scientific Communication
PHC 498 Undergraduate Research Participation in Pharmaceutical Sciences
PHC 613 Pharmaceutics Seminar
PHC 614 Pharmaceutics Seminar
PHC 615 Graduate Research
PHC 616 Graduate Research
Science electives

Summary

Total required credit hours for the undergraduate portion.....89
Total required credit hours for the BS/MS 119

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—BIO 200, CHE 101
Spring—BIO 201, CHE 102

SECOND YEAR
Fall—CHE 201; MTH 121 or MTH 141; PHY 101 or PHY 107 (no lab)
Spring—CHE 202; MTH 122 or MTH 142; PHY 102 or PHY 108 (no lab); one science elective

THIRD YEAR
Fall—CHE 214, PGY 451, PHC 311, PHC 331, one science elective
Spring—PGY 452, PHC 312, PHC 332, PHC 498, PHC 420, PHC 421, one science elective

FOURTH YEAR
Fall—BCH 403, BCP 405, PHC 411, PHC 413, PHC 431; science electives or PHC 498
Spring—BCP 512, PHC 425, PHC 432, PHC 616; graduate PHC science electives or PHC 616; graduate research

SUMMER
PHC 615

FIFTH YEAR
Fall—PHC 613, PHC 615, 500/600-level PHC elective courses
Spring—PHC 614, PHC 616, 500/600-level PHC elective courses

PHARMACEUTICAL SCIENCES—MINOR

About the Minor
The minor program emphasizes the principles of basic science relevant to the pharmaceutical sciences discipline. A minor in pharmaceutical sciences combined with a major in a scientific or clinical discipline (e.g., biology, chemistry, biochemistry, biochemical pharmacology, medicinal chemistry) provides a unique interdisciplinary education.

Acceptance Criteria
Minimum GPA of 2.0 in all prerequisite courses.

Advising Notes
Application to the department with a UB DARS report is recommended early in the second semester of the second year.

Prerequisite Courses
BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I

Required Courses
PHC 311 Pharmaceutical Mathematics and Statistics
PHC 312 Physical Pharmacy
PHC 411 Introduction to Pharmacokinetics and Biopharmaceutics I
PHC 425 Pharmaceutical Biotechnology: From Bench to Bedside

Electives and Course Groupings

PHARMACEUTICAL SCIENCES ELECTIVES (6 CREDIT HOURS)
Choose from the following:
PHC 331 Case Studies in Pharmaceutical Sciences
PHC 332 Introduction to Research
PHC 413 Pharmaceutics Seminar
PHC 414 Pharmaceutics Seminar
PHC 420 Pharmaceutical Analysis
PHC 426 Pharmaceutical Biotechnology Virtual Laboratory
PHC 498 Undergraduate Research Project in Pharmaceutical Sciences or any 3-credit-hour graduate-level pharmaceutical sciences course (permission of Pharmaceutical Sciences director required; see department for details)

Pharmacology and Toxicology

Department of Pharmacology and Toxicology

School of Medicine and Biomedical Sciences

102 Farber Hall
South Campus
Buffalo, NY 14214-3000
Phone: (716) 829-2800
Fax: (716) 829-2801
Web site: www.smbs.buffalo.edu/pmy

James R. Olson, PhD
Director of Undergraduate Studies
13 Cary Hall
(716) 829-2319
jolson@buffalo.edu

For a listing of Pharmacology and Toxicology faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Pharmacology, simply defined, is the study of the interaction of drugs with living systems. This subject has a fascinating history and continues to be relevant in modern times. Pharmacology deals with a number of questions, for example: What is the molecular site of action? What are the changes caused by a drug in the normal function of tissues and organs? What is the relationship between the dose of a drug and its effect? How do drugs produce their effects? What happens to drugs once they enter the body? Since a drug is traditionally defined as a chemical that interacts with living systems, this subject has a very broad relevance from its obvious importance in the diagnosis and treatment of disease to the impact of abused substances or environmental chemicals on health. Students in the department are encouraged to do research projects with the faculty who have interdisciplinary research interests in neuropharmacology, behavioral pharmacology, toxicology, pharmacogenomics and toxicogenomics.

The broad academic background provides students with a wide array of career opportunities. Many graduates enter medical or dental schools or pursue graduate studies in pharmacology or other biochemical sciences. Pharmacology graduates find employment in technical, production/analytical, or sales positions as research scientists or drug information specialists in the pharmaceutical industry, government, university laboratories, and hospitals. Students have also pursued careers in law and management following completion of their BS degree in pharmacology.

Degrees Offered

- **Undergraduate:** BS, Minor
- **Combined:** BS/MS
- **Graduate:** MA, PhD, MD/PhD

Degree Options

In addition to the BS program, the department offers a combined BS/MS degree that provides the laboratory research training and advanced courses needed for entry-level professional positions in the pharmaceutical industry and in academia. In this combined degree program, students have the opportunity to earn the combined degree in five years versus the usual six years needed to obtain both a BS and an MS degree. The program is available only to registered Pharmacology and Toxicology (PMY) majors during their junior year at the University at Buffalo.

Advisement

Students are strongly urged to contact Dr. James Olson during their freshman/sophomore years to learn more about the subject, the opportunities that are available in the program and the relevance of these opportunities to students' academic and career aspirations. Information regarding procedural details of admission can be obtained by contacting Ms. Linda LeRoy of the Department of Pharmacology and Toxicology (lleroy@buffalo.edu or (716) 829-2800), or Dr. David Lang, Senior Academic Advisor for Biomedical Undergraduate Education (langdj@buffalo.edu or (716) 829-3005).

Transfer Policy

Transfer students should obtain admission to the university through the Office of Admissions before applying to the Department of Pharmacology and Toxicology. Students must complete their university application (which includes sending official transcripts of the fall semester work) prior to March 15. The department will evaluate prerequisite courses previously taken as possible substitutes for required courses.

PHARMACOLOGY AND TOXICOLOGY–BS

Acceptance Criteria
Minimum GPA of 2.5 in prerequisite courses.
Minimum GPA of 2.0 in required courses.

Advising Notes
The department encourages students to apply by March 15 of their junior year. Students should contact the departmental office to obtain an application, which must be completed and returned with a DARS report. The application is also available on our website.

Prerequisite Courses
BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry or CHE 105 Chemistry: Principles and Applications
CHE 102 General Chemistry or CHE 106 Chemistry: Principles and Applications
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I
MTH 122 Survey of Calculus and Its Applications II or MTH 142 College Calculus II
PHY 101/PHY 151 College Physics I/Lab* or PHY 107 General Physics I
PHY 102/PHY 152 College Physics II/Lab* or PHY 108/PHY 158 General Physics II/Lab*

Required Courses
BCH 403 Principles of Biochemistry
PMY 405 Principles of Pharmacology
PMY 406 Principles of Pharmacology
PMY 409 Experimental Pharmacology
PMY 455 Toxicology Fundamentals
BIO 302 Introduction to Molecular Biology
MCH 311 Chemistry of Drug Action
PGY 451 Human Physiology I
PGY 452 Human Physiology II
Science electives**

Summary
Total required credit hours for the major..... 90-101

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements
FIRST YEAR
Fall—BIO 200; CHE 101 or CHE 105; MTH 121 or MTH 141
Spring—BIO 201; CHE 102 or CHE 106; MTH 122 or MTH 142

SECOND YEAR
Fall—CHE 201; PHY 101/PHY 151* or PHY 107
Spring—CHE 202; PHY 102/PHY 152* or PHY 108/PHY 158*

THIRD YEAR
Fall—BCH 403, MCH 311, PGY 451
Spring—PGY 452, science electives**

FOURTH YEAR
Fall—PMY 405, PMY 455, BIO 302, science electives**
Spring—PMY 406, PMY 409, science electives**

**Only one (1) physics lab is required.*

***13-23 credit hours of science electives are required; STA 119 Statistical Methods is strongly recommended.*

Electives and Course Groupings
Students may choose from the following science electives:
ANA 113 Anatomy
APY 107 Introduction to Physical Anthropology
APY 275 Introduction to Medical Anthropology
APY 276 Introduction to Ethnomedicine
BIO 319 Genetics
BIO 328 General Physiology
BIO 401 Advanced Biological Chemistry
BIO 461 Basic Radiation Science
BIO 468 Molecular Immunology
BPH 303 Principles of Biophysics
CHE 214 Analytical Chemistry
CHE 312 Chemistry of Biological Systems
CHE 349 Physical Chemistry for Life Sciences
CSE 101 Computers A General Introduction
MCH 300 Herbs and Phytomedicinals
MIC 301 Fundamentals of Microbiology
MIC 401 General Microbiology
MIC 412 Fundamentals of Immunology
MT 402 Fundamentals of Immunology
MT 428 Forensic Science
NTR 108 Human Nutrition
NTR 401 Nutrition and Health
PGY 405 Cell Physiology
PGY 412 Applied Physiology
PHI 337 Social and Ethical Values in Medicine
STA 119 Statistical Methods or
STA 527 Introduction to Medical Statistics

PHARMACOLOGY AND TOXICOLOGY—BS/MS

Acceptance Criteria

Minimum GPA of 3.0 overall.
Three (3) supportive letters of recommendation from the faculty.
A personal statement from the student.

The department encourages students to apply by March 15 of their junior year. Students should contact the departmental office to obtain an application, which must be completed and returned with a DARS report.

Advising Notes

Applications are accepted only from registered University at Buffalo PMY majors during their junior year. The Graduate Record Exam is not a requirement for admission. Forms and applications should be filed by March 15.

Applications must be approved by the both the undergraduate and graduate admission committees.

Prerequisite Courses

BCH 403 Principles of Biochemistry
BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry or CHE 105 Chemistry: Principles and Applications
CHE 102 General Chemistry or CHE 106 Chemistry: Principles and Applications
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
MCH 311 Chemistry of Drug Action
MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I
MTH 122 Survey of Calculus and Its Applications II or MTH 142 College Calculus II
PGY 451 Human Physiology I
PGY 452 Human Physiology II
PHY 101/PHY 151 College Physics I/Lab* or PHY 107 General Physics I
PHY 102/PHY 152 College Physics II/Lab* or PHY 108/PHY 158 General Physics II/Lab*

Required Courses

PMY 455 Toxicology Fundamentals
PMY 511 Principles of Pharmacology I
PMY 512 Principles of Pharmacology II
BIO 302 Introduction to Molecular Biology
BMS 501 Cell Biology I
BMS 505 Cell Biology IIA
BMS 506 Cell Biology IIB
PHI 640 Graduate Research Ethics
PMY 506 Pharmacology Seminar
Research credits**
Science electives***

Summary

Total required credit hours for the undergraduate portion..... 77-81

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—BIO 200; CHE 101 or CHE 105; MTH 121 or MTH 141
Spring—BIO 201; CHE 102 or CHE 106; MTH 122 or MTH 142

SECOND YEAR
Fall—CHE 201; PHY 101/PHY 151* or PHY 107
Spring—CHE 202; PHY 102/PHY 152* or PHY 108/PHY 158*

THIRD YEAR
Fall—BCH 403, MCH 311, PGY 451, science elective
Spring—PGY 452, science electives

FOURTH YEAR
Fall—PMY 511, BIO 302, PMY 455, thesis research**
Spring—PMY 512, GSC 640, thesis research**

FIFTH YEAR
Fall—BMS 501, graduate science elective, thesis research**
Spring—BMS 505, BMS 506, PMY 506, thesis research**
Accepted Thesis

**Only one(1) physics lab is required.*

***12-22 credit hours of research are required.*

PHARMACOLOGY AND TOXICOLOGY—MINOR

About the Minor

The minor is suited to a wide variety of science and nonscience majors interested in acquiring an introductory understanding of drug action.

Acceptance Criteria

Applications should be made when the student has completed the prerequisite courses or is in the process of completing them during the semester when the application is made.

Minimum GPA of 2.5 in prerequisite courses.
Minimum GPA of 2.0 overall in minor to graduate.

Prerequisite Courses

BIO 200 Evolutionary Biology and BIO 201 Cell Biology
CHE 101-CHE 102 General Chemistry
CHE 201-CHE 202 Organic Chemistry

Required Courses

BIO 205 or BCH 403 Principles of Biochemistry
PMY 302 Introduction to Pharmacology
PMY 455 Toxicology Fundamentals
PGY 300 Human Physiology
One elective science course selected with approval of program director

Pharmacy*

Department of Pharmacy Practice

School of Pharmacy and Pharmaceutical Sciences Office of Advisement and Recruitment

112 Cooke Hall
North Campus
Buffalo, NY 14260-1200
Phone: (716) 645-2825
Fax: (716) 645-3688
Web site: www.pharmacy.buffalo.edu
E-mail: pharm-admin@acsu.buffalo.edu

Wayne K. Anderson
Dean

Gayle A. Brazeau
Associate Dean (Academic Affairs)

Eugene D. Morse
Associate Dean (Clinical Research and Education)

Karl D. Fiebelkorn
Assistant Dean (Student Affairs and Professional Relations)

Cindy F. Konovitz
Assistant Dean (Advisement and Recruitment)

Jennifer M. Hess
Assistant Dean for Admissions

**This is not a baccalaureate degree program; instead, it is a graduate level doctor of pharmacy (PharmD)*

For a listing of Pharmacy course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The PharmD program at the University at Buffalo is ranked among the top pharmacy programs in the United States, and is the only program of its kind available in the State University of New York system. The Department of Pharmacy Practice offers graduate/professional-level courses in pharmacy. The department is responsible for the instruction of all professional courses offered in the doctor of pharmacy (PharmD) professional program, which is administered by the Office of the Dean.

Degrees Offered

- **Graduate:** PharmD (Pharmacy)
- **Combined:** PharmD/MBA; PharmD/JD

Degree Options

The Department of Pharmacy Practice does not offer a program leading to an undergraduate degree. The doctor of pharmacy (PharmD) entails a minimum of two years of pre-pharmacy coursework (prerequisites) followed by four years of the professional pharmacy curriculum. This professional degree is required for licensure as a pharmacist.

A doctor of pharmacy/master of business administration program (PharmD/MBA) is also available, as well as doctor of pharmacy/juris doctor (PharmD/JD) degree programs.

Acceptance Information

Approximately 115 students are selectively admitted to the program each fall after completion of the pre-pharmacy course requirements. While a bachelor's degree is not required, applicants having earned this degree are encouraged to apply. Applicants must complete the certain undergraduate courses to be considered for admission. These pre-pharmacy courses may be taken at the University at Buffalo or at any other accredited institution of higher education. To qualify for admission, applicants must also complete the Pharmacy College Admission Test (PCAT). An early assurance option is available to qualified students who enter as freshmen and complete their pre-pharmacy coursework at the University at Buffalo. Please contact the Office of Pharmacy Admissions for the most up-to-date information regarding this option.

The professional program in pharmacy encourages application from students who have attained a minimum GPA of 3.0 in their pre-pharmacy science and math courses to apply for admission. Note, however, that in recent years, admitted students have performed at a higher level.

The program seeks well-rounded students who are motivated towards providing the highest levels of pharmaceutical care. As such, an applicant's entire portfolio is reviewed. In addition to grades and PCAT scores, letters of recommendation, personal statements, work and volunteer experience as well as other information, is reviewed.

It is critical that all students possess the ability to communicate effectively using both the oral and written English language. These competencies will be assessed of qualified applicants through an in-person interview and a written essay.

For further information regarding admission requirements and career information, students are strongly advised to contact the School of Pharmacy and Pharmaceutical Sciences, Office of Admissions, 112 Cooke Hall, Buffalo, NY 14260-1200, (716) 645-2825.

Transfer Policy

The School of Pharmacy and Pharmaceutical Sciences does not differentiate between transfer and non-transfer students when making decisions regarding acceptance into the PharmD program. Transfer students are expected to meet the same criteria for admission as non-transfer students. Lists of comparable courses from other colleges and universities that meet the pre-pharmacy requirements are available in the School of Pharmacy and Pharmaceutical Sciences, Office of Admissions, 112 Cooke Hall, or through the University's transfer articulation Web site (TAURUS) at http://taurus.buffalo.edu. All transfer students are strongly advised to make an appointment with the school's admissions office early in their academic studies to discuss their coursework and application to the program.

PHARMACY—PHARMD

Acceptance Criteria

Please contact the Office of Admissions and Pre-Pharmacy Advisement for information. The office is located in 112 Cooke Hall, North Campus, (716) 645-2825.

Advising Notes

This is not an undergraduate degree program; however, prerequisites that must be completed for admission consideration are at the undergraduate level. An undergraduate degree is not required prior to admission into this graduate/professional program.

Also note that General Education courses must be completed as a requisite for earning a degree from the University at Buffalo. These courses are not required for entrance into the professional program, however, students are strongly encouraged to complete them as prerequisites if their schedule permits.

Prerequisite Courses

BIO 200 Evolutionary Biology
BIO 201 Cell Biology
CHE 101 General Chemistry or CHE 105 Chemistry: Principles and Applications
CHE 102 General Chemistry or CHE 106 Chemistry: Principles and Applications
CHE 201 Organic Chemistry or CHE 251 Contemporary Organic Chemistry
CHE 202 Organic Chemistry or CHE 252 Contemporary Organic Chemistry
ECO 182 Introduction to Microeconomics or ECO 181 Introduction to Macroeconomics
MTH 121 Survey of Calculus and Its Applications I or MTH 141 College Calculus I
MTH 122 Survey of Calculus and Its Applications II or MTH 142 College Calculus II
PHM 201 Orientation to Pharmaceutical Fields*
PHY 101 College Physics I or PHY 107 General Physics I
PHY 102 College Physics II or PHY 108 General Physics II
PSY 101 Introductory Psychology or SOC 101 Introduction to Sociology
STA 119 Statistical Methods or PSY 207 Psychological Statistics

Required Courses

PROFESSIONAL PROGRAM

Involves graduate/professional-level courses. Information regarding these courses may be obtained in the Office of Pharmacy Admissions, 112 Cooke Hall, North Campus, Buffalo, NY 14260-1200, (716) 645-2825.

(Continued on next page)

Recommended Sequence of Program Requirements

FIRST YEAR

Fall—BIO 200; CHE 101 or CHE 105
Spring—BIO 201; CHE 102 or CHE 106; PHM 201*; STA 119 or PSY 207

SECOND YEAR

Fall—CHE 201 or CHE 251; MTH 121 or MTH 141; PHY 101 or PHY 107; PSY 101 or SOC 101
Spring—CHE 202 or CHE 252; ECO 181 or ECO 182; MTH 122 or MTH 142; PHY 102 or PHY 108

**PHM 201 is not a required course. It is offered during the spring semester of each academic year.*

Philosophy

Department of Philosophy

College of Arts and Sciences

135 Park Hall
North Campus
Buffalo, NY 14260-4150
Phone: (716) 645-2444, ext. 135
Fax: (716) 645-6139
Web site: philosophy.buffalo.edu

John T. Kearns
Chair

For a listing of Philosophy faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Philosophy studies the foundation of values, examines the nature of justice, knowledge and reality, and sets the mind working with accuracy and imagination.

The student of philosophy learns the fundamental theories and concepts that have framed our intellectual heritage, and also learns the essential tools to investigate and develop the ideas that shape our lives today. Philosophy is especially well equipped to teach skills that are important for success in almost any endeavor: how to think critically, how to construct arguments and examine reasons, and how to formulate and express ideas clearly both verbally and in writing.

A major in philosophy provides a solid foundation for advanced study in almost any field, for entering a profession, or for entering the job market with confidence. Because it trains the student to think clearly and critically, it is excellent preparation for the many professions that require these skills.

Degrees Offered

- **Undergraduate:** BA, Minor
- **Concentrations:** (within Minor) General Philosophy, Arts, Law, Logic, Professional Ethics, Science
- **Graduate:** MA, PhD

Degree Options

Major in Philosophy

The undergraduate major includes study in each of the basic areas of philosophy-ethics, logic, metaphysics and epistemology, and the history of philosophy. There is a selection of electives that expand upon these, or that composes a concentration in a specific period, topic, or philosophical approach. For more information, see the Philosophy-BA chart. Students interested in exploring further a major in philosophy are invited to contact the director of undergraduate studies.

Honors

Philosophy offers an honors program for majors in their senior year of study. This is an opportunity to explore philosophical ideas and problems more deeply.

Concentration in Professional Ethics

This series of courses is available either as a major or as a minor in philosophy. The courses address ethical issues in the health sciences, biomedical research, law, communications, engineering, and architecture, and business. They include careful consideration of various approaches to ethics and their application to professional ethics questions.

Minor in Philosophy

A minor in philosophy can be a significant contribution to studies in many areas of the arts and sciences. Requirements for a minor include study of logic, of ethics, and in some areas of the history of philosophy. A minor also provides ample opportunity for selection of courses addressing issues of special interest to the student. For more information, see the Philosophy-Minors chart.

There are several areas in which the theories and approaches of philosophy are especially useful and in which philosophy offers specialized minors. These include the arts, law, logic, professional ethics, and philosophy of science. Each of these is designed for students majoring or planning postbaccalaureate study in that area. For more information, see the charts for Philosophy of the Arts—Minor; Philosophy of Law—Minor; Logic—Minor; Professional Ethics—Minor; and Philosophy of Science—Minor.

The minor programs are administered by the director of undergraduate studies.

Advisement

Majors, minors, and students considering a major or minor in philosophy are encouraged to discuss their interests and plans of study with:

Professor William H. Baumer
Director of Undergraduate Studies
136C Park Hall
Phone: (716) 645-0164
E-mail: whbaumer@buffalo.edu

PHILOSOPHY—BA

Acceptance Criteria

Minimum GPA of 2.0 overall.
A minimum grade of C in the prerequisite course.

Advising Notes

No more than two 100-level courses may count toward the total requirement of 36 credit hours.

Students interested in a philosophy major, honors, a specialized program in professional ethics, or a philosophy minor, as well as students interested in selected study of philosophical questions or issues, are invited to contact the director of undergraduate studies, Professor Baumer, at (716) 645-0164 or whbaumer@buffalo.edu to discuss their interests and receive additional information.

Prerequisite Courses

One philosophy course with a minimum grade of C.

Required Courses

ETHICS

One of the following: PHI 107 Ethics, PHI 238 Philosophy of Law, PHI 335 Contemporary Ethical Theory, PHI 336 History of Ethics, PHI 337 Social and Ethical Values in Medicine

LOGIC

One of the following: PHI 215 Introduction to Deductive Logic, PHI 315 Symbolic Logic

(Continued on next page)

METAPHYSICS AND EPISTEMOLOGY
One of the following: PHI 108 Knowledge and Reality, PHI 329 Metaphysics, PHI 333 Epistemology

HISTORY OF PHILOSOPHY
Two of the following: PHI 360 Ancient Philosophy, PHI 366 Medieval Philosophy, PHI 370 Early Modern Philosophy, PHI 380 Nineteenth-Century Philosophy, Kant to Nietzsche, PHI 388 Twentieth-Century Philosophy

PHILOSOPHY ELECTIVES
Seven additional courses, of which four must be at the 300/400 level

Summary
Total required credit hours for the major.....36

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST AND SECOND YEARS
Required courses in ethics, metaphysics and epistemology, logic (three courses in total)
Optional: history of philosophy or elective at 200 level or higher (if general education requirements are also fulfilled)

THIRD YEAR
Required courses(s) in the history of philosophy
Two electives, preferably at the 300/400 level

FOURTH YEAR
Remaining electives at the 300/400 level

PHILOSOPHY—MINORS

Acceptance Criteria for All Minors
Minimum GPA of 2.0 overall.
A minimum grade of C in the prerequisite course.

Advising Notes
Students interested in a philosophy minor, and students interested in selected study of philosophical questions or issues, are invited to contact the director of undergraduate studies, Professor Baumer, at (716) 645-0164 or whbaumer@buffalo.edu to discuss their interests and receive additional information.

Prerequisite Courses
One philosophy course with a minimum grade of C.

Required Courses

LOGIC-MINOR
PHI 215 Introduction to Deductive Logic
PHI 315 Symbolic Logic
One of: PHI 415 Logical Theory I, PHI 416 Logical Theory II, PHI 417 Modal Logic, PHI 418 Philosophy of Mathematics, PHI 419 Philosophy of Logic
Three additional courses, including two at the 300/400 level

PHILOSOPHY—MINOR
Logic—One of the following: PHI 115 Critical Thinking, PHI 215 Introduction to Deductive Logic
Ethics—One of the following: PHI 107 Ethics, PHI 238 Philosophy of Law, PHI 337 Social and Ethical Values in Medicine
History of Philosophy—One of the following: PHI 360 Ancient Philosophy, PHI 366 Medieval Philosophy, PHI 370 Early Modern Philosophy, PHI 380 Nineteenth-Century Philosophy, Kant to Nietzsche, PHI 388 Twentieth-Century Philosophy
Philosophy electives—Three additional courses at the 300/400 level. No more than two independent study tutorials may count toward the fulfillment of this requirement.

PHILOSOPHY OF LAW—MINOR
PHI 115 Critical Thinking or PHI 215 Introduction to Deductive Logic
PHI 238 Philosophy of Law
PHI 338 Law and Morality, PHI 340 Law and Responsibility, or PHI 443 Topics in Legal Responsibility
One of: PHI 328 Philosophy of Language, PHI 333 Epistemology, PHI 335 Contemporary Ethical Theory, PHI 341 Social Philosophy, or PHI 342 Political Philosophy
One additional course from: PHI 338, PHI 340, PHI 443, PHI 328, PHI 333, PHI 335, PHI 341, PHI 342

PHILOSOPHY OF PROFESSIONAL ETHICS—MINOR
PHI 115 Critical Thinking
PHI 117 Professional Ethics
PHI 337 Social and Ethical Values in Medicine or PHI 238 Philosophy of Law
PHI 335 Contemporary Ethical Theory or PHI 336 History of Ethics
Two additional 300/400-level courses

PHILOSOPHY OF SCIENCE—MINOR
PHI 215 Introduction to Deductive Logic
PHI 315 Symbolic Logic
PHI 221 Introduction to the Philosophy of Science or PHI 321 Philosophy of Natural Sciences
PHI 370 Early Modern Philosophy
Two additional 300/400-level courses

PHILOSOPHY OF THE ARTS—MINOR
PHI 108 Knowledge and Reality
PHI 115 Critical Thinking
PHI 344 Aesthetics Theory and Criticism or PHI 345 Aesthetics and Philosophy of Art
PHI 360 Ancient Philosophy or PHI 354 Chinese and Japanese Philosophy
Two additional 300/400-level courses

Summary
Total required credit hours for the minor 18

Physical Therapy*

Department of Rehabilitation Science

School of Public Health and Health Professions

515 Kimball Tower
South Campus
Buffalo, NY 14214-3079
Phone: (716) 829-3141, ext. 184
Fax: (716) 829-3217
Web site:sphhp.buffalo.edu/rs/dpt

Robert Burkard
Chair

Karen Panzarella
Director of Clinical Education

Susan Bennett
Interim Director, Physical Therapy Program

**This is not baccalaureate degree program; it is, rather, a six-year Doctor of Physical Therapy (DPT).*

For a listing of Physical Therapy faculty, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Doctor of Physical Therapy (DPT) program comprises three academic years of undergraduate study and three calendar years of professional graduate study. The undergraduate portion of the curriculum is done as an exercise science major in the Department of Exercise and Nutrition Sciences. Students who follow the first three years of the exercise science (ES) curriculum will have completed all the prerequisite coursework for the DPT program.

Degrees Offered

- **Graduate:** DPT

Degree Options

The only physical therapy degree offered at UB is the Doctor of Physical Therapy, which requires a minimum of six years of study. Students may, however, elect to complete the BS in Exercise Science before starting the professional sequence of the DPT. The total length of study in this case will be seven years.

Advisement

High school students and freshmen students (including those interested in transferring to Exercise Science) should seek advisement in the School of Public Health and Health Professions; call (716) 829-3434, ext. 287 to schedule an appointment. Other undergraduate students should seek advisement directly in the Department of Exercise and Nutrition Sciences: call (716) 829-2941, ext. 261 to schedule an appointment. Information about the Exercise Science program can be found at sphhp.buffalo.edu/ens.

Acceptance Information

In the sophomore year of exercise science, students must submit a completed Promotion to Professional Sequence form (due on or before the last Friday in January) in order to be allowed to take the upper division ES courses. At this point, students interested in physical therapy should choose the pre-physical therapy track. To be eligible for this track, students must have a minimum GPA of 3.0 and all grades in the prerequisite courses must be at least a C.

In the junior year of exercise science, students complete the online application to the DPT program (on or before November 1). If accepted, students can begin the DPT program (in the Department of Rehabilitation Science) in the following fall semester. The prerequisite courses must be completed prior to the start of classes in August of each year.

Students who wish to receive the BS in exercise science as well as the doctor of physical therapy degree should submit the DPT application in their senior year.

Transfer Policy

The Department of Rehabilitation Science does not differentiate between transfer and non-transfer students seeking admission into the D.P.T. program. For transfer students, the general education required courses may be different from those of non-transfer students, but all other prerequisite requirements and admission criteria are the same.

Students seeking to transfer from other institutions should apply to the university and the Exercise Science program by December 15 of their sophomore year. They then must submit a completed Promotion to Professional Sequence form (due on or before the last Friday in January) in order to be allowed to take the upper-division ES courses. Transfer students may also be eligible to apply directly to the DPT program. The prerequisite courses must be completed prior to the start of classes for the DPT in August of each year.

PHYSICAL THERAPY—DPT

Acceptance Criteria
All prerequisites must be completed with a grade of C or better.
Minimum GPA of 3.0 in required courses.

Prerequisite Courses

LOWER DIVISION
ANA 113 Human Anatomy; or APY 345 Comparative Primate Anatomy and APY 346 Dissections in Comparative Primate Anatomy
CHE 101 General Chemistry
CHE 102 General Chemistry
ES 200 Science of Human Movement
MTH 121 Survey of Calculus and its Applications I or MTH 141 College Calculus I
NTR 108 Human Nutrition
PGY 300 Human Physiology
PHY 101/PHY 151 College Physics I/Lab
PHY 102/ PHY 152 College Physics II/Lab
PSY 101 Introductory Psychology
One statistics course (one of the following): STA 119, CEP 207, PSY 207

UPPER DIVISION
ANA 407 Gross Human Anatomy
ES 300 Theory of Athletic Injury
ES 310 Exercise Assessment, Prescription and Programming I
ES 330 Life Span Physiology
ES 341 Critical Analysis of Scientific Literature
ES 342 Neuroscience I
ES 343 Neuroscience II
ES 344 Neuroanatomy I
ES 345 Neuroanatomy II
ES 370 Biomechanics I
ES 380 Exercise Physiology

Required Courses
PT 500 Professional Colloquium I
PT 501 Professional Development
PT 503 Medical Sciences I
PT 504 Medical Sciences II
PT 505 Evidence-based Practice I
PT 506 Evidence-based Practice II
PT 508 Cardiopulmonary Physical Therapy
PT 509 Foundations of Physical Therapy I
PT 510 Foundations of Physical Therapy II
PT 511 Health and Wellness
PT 512 Clinical Experience II
PT 601 Musculoskeletal Physical Therapy I
PT 602 Musculoskeletal Physical Therapy II
PT 603 Neuromuscular Physical Therapy I
PT 604 Neuromuscular Physical Therapy II
PT 605 Case Management I
PT 606 Case Management II
PT 611 Foundations of Physical Therapy III
PT 612 Integumentary Physical Therapy
PT 613 Clinical Experience III
PT 614 Clinical Internship
PT 701 Management Sciences for Physical Therapy
PT 703 Critical Analysis of Patient Care
PT 712 Clinical Residency
PT 718 Enrichment Capstone
PT 724 Professional Colloquium II

(Continued on next page)

Summary

Total required credit hours for the undergraduate portion.....77

Total required credit hours for the DPT.....183

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall—CHE 101; MTH 121 or MTH 141; PSY 101
Spring—CHE 102, NTR 108; STA 119 or PSY 207 or CEP 207

SECOND YEAR

Fall—ANA 113 or APY 345 and APY 346; ES 200, PHY 101/PHY 151
Spring—PGY 300, PHY 102/ PHY 152

THIRD YEAR

Summer—ANA 407
Fall—ES 300, ES 310, ES 341, ES 342, ES 344, ES 380
Spring—ES 330, ES 343, ES 345, ES 370

PROFESSIONAL PROGRAM

Information regarding the graduate courses included in the professional phase of the DPT can be found at www.sphhp.buffalo.edu/rs/dpt or obtained from the Department of Rehabilitation Science, 515 Kimball Tower, South Campus, Buffalo, NY 14214, (716) 829-3141.

Physics

Department of Physics

College of Arts and Sciences

239 Fronczak Hall
North Campus
Buffalo, NY 14260-1500
Phone: (716) 645-2017
Fax: (716) 645-2507
Web site: www.physics.buffalo.edu

Francis Gasparini
Chair
fmg@buffalo.edu

Hong Luo
Director of Undergraduate Studies
luo@buffalo.edu

For a listing of Physics faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Physics is the fundamental science underlying the investigation of all natural phenomena. It has provided much of the theory and many of the experimental techniques that are widely used in present-day science and technology. The impressive list of developments that have come directly from physics includes: solid-state electronics; lasers and masers; the nuclear magnetic resonance techniques used in biology, chemistry, and medicine; X-ray crystallography; electron microscopy; and superconductivity.

Physics has also provided a stimulus to philosophy and to the general development of the ideas that seek to explain our relation to the rest of the universe.

Degrees Offered

- **Undergraduate:** BA and BS in Physics, BA in the Teaching of Science, BS in Mathematical Physics, Minor in Physics
- **Graduate:** MS, PhD
- **Other programs:** The Department of Physics participates in the joint majors in Computational Physics and Engineering Physics. There is a 5 year BS in Computational Physics/MS in Physics program.

Degree Options

Advanced Placement: Students who receive a 4 or 5 on the Physics C Mechanics exam can get credit for PHY 107 General Physics I. A grade of 4 or 5 on the Physics C Electricity & Magnetism exam provides credit for PHY 108/PHY 158 General Physics 2/Lab.

Advisement

Advanced Placement: Students who receive a 4 or 5 on the Physics C Mechanics exam can get credit for PHY 107 General Physics I. A grade of 4 or 5 on the Physics C Electricity & Magnetism exam provides credit for PHY 108/PHY 158 General Physics 2/Lab.

Acceptance Information

It is necessary to apply for acceptance into any of the above programs. The acceptance criteria for students who have completed the relevant coursework at UB are given with the summaries for each degree program. In general, it is possible to apply for any of the programs in the sophomore year. The undergraduate director, Professor Fuda, should be contacted for acceptance into any of the degree programs except for the BS in engineering physics, which is administered by the School of Engineering and Applied Sciences.

Transfer Policy

1. Transfer students from accredited institutions are granted admission to the Department of Physics if they satisfy the following requirements with a minimum overall GPA of 2.0:
   a. one-year calculus-based physics course similar to PHY 107-PHY 108/ PHY 158
   b. one-year calculus course similar to MTH 141-MTH 142
2. For transfer students with more than the minimum coursework listed in (1) above, admission is granted if the student has a minimum GPA of 2.0 in all physics and mathematics courses previously attempted.
3. Academic transfer credit is granted for physics and mathematics courses completed with a grade of C or better that are suitable to the department's degree programs.

PHYSICS—BS

Acceptance Criteria
Minimum GPA of 2.0 in the prerequisite courses.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I or PHY 117 Honors Physics I
PHY 108 General Physics II or PHY 118 Honors Physics II
PHY 158 General Physics II Lab

Required Courses
CHE 101 General Chemistry
CHE 102 General Chemistry
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
MTH 417 Survey of Multivariable Calculus
MTH 418 Survey of Partial Differential Equations
PHY 207 General Physics III or PHY 217 Honors Physics III
PHY 208 General Physics IV
PHY 257 General Physics III Lab
PHY 301 Intermediate Mechanics I
PHY 302 Intermediate Mechanics II
PHY 307 Modern Physics Lab
PHY 401 Modern Physics I
PHY 402 Modern Physics II
PHY 403 Electricity and Magnetism I
PHY 404 Electricity and Magnetism II
PHY 405 Thermal and Statistical Physics I
PHY 406 Thermal and Statistical Physics II
PHY 407 Advanced Laboratory
PHY 408 Advanced Laboratory
One PHY elective (one of the following: PHY 310 Intermediate Optics, PHY 410 Computational Physics I, PHY 412 Nuclear and Particle Physics, PHY 413 Electronics)

Summary
Total required credit hours for the major.....85

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 101, MTH 141
Spring —CHE 102, MTH 142; PHY 107 or PHY 117

SECOND YEAR
Fall—MTH 241; PHY 108 or PHY 118; PHY 158
Spring—MTH 306; PHY 207 or PHY 217; PHY 208, PHY 257

THIRD YEAR
Fall—MTH 417, PHY 301, PHY 307, PHY 401
Spring—MTH 418, PHY 302, PHY 402

FOURTH YEAR
Fall—PHY 403, PHY 405, PHY 407
Spring—PHY 404, PHY 406, PHY 408
Fall or Spring—One PHY elective

MATHEMATICAL PHYSICS—BS

Acceptance Criteria
Minimum GPA of 2.5 in the prerequisite courses.

Advising Notes
Students should consult with the undergraduate director in each department regarding approved electives.

This is a joint program. A student who follows this program but does not complete it will have difficulty completing a math major without substantial additional coursework.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I or PHY 117 Honors Physics I
PHY 108 General Physics II or PHY 118 Honors Physics II
PHY 158 General Physics II Lab

Required Courses
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
MTH 309 Introductory Linear Algebra
MTH 417 Survey of Multivariable Calculus
MTH 418 Survey of Partial Differential Equations
MTH 419 Introduction to Algebra I or MTH 420 Introduction to Algebra II
MTH 424 Fourier Series
MTH 425 Introduction to Complex Variables I
PHY 207 General Physics III or PHY 217 Honors Physics III
PHY 208 General Physics IV
PHY 257 General Physics III Lab
PHY 301 Intermediate Mechanics I
PHY 307 Modern Physics Lab
PHY 401 Modern Physics I
PHY 403 Electricity and Magnetism I
PHY 405 Thermal and Statistical Physics I
PHY 407 Advanced Laboratory or PHY 408 Advanced Laboratory
One 300/400-level MTH elective
One PHY elective (one of the following: PHY 302 Intermediate Mechanics II, PHY 402 Modern Physics II, PHY 404 Electricity and Magnetism II, or PHY 406 Thermal and Statistical Physics II)

Summary
Total required credit hours for the major.....81

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—MTH 141
Spring—MTH 142; PHY 107 or PHY 117

SECOND YEAR
Fall—MTH 241; PHY 108 or PHY 118; PHY 158
Spring—MTH 306, MTH 309; PHY 207 or PHY 217; PHY 208, PHY 257

THIRD YEAR
Fall—MTH 417, PHY 301, PHY 307, PHY 401
Spring—MTH 418, one PHY elective

FOURTH YEAR
Fall—MTH 419 or MTH 420; MTH 425, PHY 403, PHY 405
Spring—MTH 424; PHY 407 or PHY 408; one 300/400 level MTH elective

PHYSICS—BA

Acceptance Criteria
Minimum GPA of 2.0 in the prerequisite courses.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I or PHY 117 Honors Physics I
PHY 108 General Physics II or PHY 118 Honors Physics II
PHY 158 General Physics II Lab

Required Courses
CHE 101 General Chemistry
CHE 102 General Chemistry
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 207 General Physics III or PHY 217 Honors Physics III
PHY 208 General Physics IV
PHY 257 General Physics III Lab
PHY 301 Intermediate Mechanics I
PHY 307 Modern Physics Lab
PHY 401 Modern Physics I
PHY 402 Modern Physics II
PHY 403 Electricity and Magnetism I
PHY 405 Thermal and Statistical Physics I
PHY 407 Advanced Laboratory or PHY 408 Advanced Laboratory
Two PHY electives (choose from PHY 302 Intermediate Mechanics II, PHY 310 Intermediate Optics, PHY 404 Electricity and Magnetism II, PHY 410 Computational Physics I, PHY 413 Electronics)
One additional 300/400-level PHY course (excluding PHY 499)

Summary
Total required credit hours for this major.....72

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 101, MTH 141
Spring—CHE 102, MTH 142; PHY 107 or PHY 117

SECOND YEAR
Fall—MTH 241; PHY 108 or PHY 118; PHY 158
Spring—MTH 306; PHY 207 or PHY 217; PHY 208, PHY 257

THIRD YEAR
Fall—PHY 301, PHY 307, PHY 401
Spring—PHY 402, one 300/400-level PHY course (excluding PHY 499)

FOURTH YEAR
Fall—PHY 403, PHY 405
Spring—PHY 407 or PHY 408; two PHY electives

PHYSICS-TEACHING OF SCIENCE PROGRAM—BA

About the Programs
Students pursuing this program must also pursue the Undergraduate Minor in Education, which is administered by the Teacher Education Institute (TEI). Applications to the minor must be filed with the TEI office in 375 Baldy Hall. Applications must include a UB DARS report and/or official transcripts from all other institutions attended other than UB.

These concentrations are designed for the student whose career goal is to attain a master's degree for Professional certification in science education. Students interested in this concentration should obtain advisement from the director of undergraduate studies in physics and, for questions related to the education courses, from the TEI office.

Completion of the major concentration (including the required education courses) provides advanced status toward Initial New York State teacher certification, accomplished through one year of subsequent coursework at the graduate level through the Graduate School of Education. It is then possible to complete, within the state-mandated three years, the master's degree required for a Professional teaching certificate, provided all New York State requirements have been successfully completed.

Acceptance Criteria
Minimum GPA of 2.0 in the prerequisite courses. TEI requires a minimum GPA of 2.5 overall for admission.

Teaching of Science—Physics

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I or PHY 117 Honors Physics I
PHY 108 General Physics II or PHY 118 Honors Physics II
PHY 158 General Physics II Lab

Required Courses
CHE 101 General Chemistry
CHE 102 General Chemistry
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 207 General Physics III or PHY 217 Honors Physics III
PHY 208 General Physics IV
PHY 257 General Physics III Lab
PHY 307 Modern Physics Lab
Four 300/400-level PHY electives (excluding PHY 499)

Summary
Total required credit hours for the major.....57

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 101, MTH 141
Spring—CHE 102, MTH 142; PHY 107 or PHY 117

SECOND YEAR
Fall—MTH 241; PHY 108 or PHY 118; PHY 158
Spring—MTH 306; PHY 207 or PHY 217; PHY 208, PHY 257

THIRD YEAR
Fall—PHY 307, one 300/400-level PHY elective (excluding PHY 499)
Spring—One 300/400-level PHY electives (excluding PHY 499)

FOURTH YEAR
Fall—One 300-level elective (excluding PHY 499)
Spring—One 300-level elective (excluding PHY 499)

(Continued on next page)

Teaching of Science—Physics and Chemistry

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I or PHY 117 Honors Physics I
PHY 108 General Physics II or PHY 118 Honors Physics II
PHY 158 General Physics II Lab

Required Courses
CHE 101 General Chemistry
CHE 102 General Chemistry
CHE 201 Organic Chemistry
CHE 202 Organic Chemistry
CHE 214 Introduction to Analytical Chemistry
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 207 General Physics III or PHY 217 Honors Physics III
PHY 208 General Physics IV
PHY 257 General Physics III Lab
PHY 307 Modern Physics Lab
Two 300/400-level PHY electives (excluding PHY 499)

Summary
Total required credit hours for the major.....64

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 101, MTH 141
Spring—CHE 102, MTH 142; PHY 107 or PHY 117

SECOND YEAR
Fall—MTH 241; PHY 108 or PHY 118; PHY 158
Spring—MTH 306; PHY 207 or PHY 217; PHY 208, PHY 257

THIRD YEAR
Fall—CHE 201, CHE 214, PHY 307
Spring—CHE 202

FOURTH YEAR
Fall—One 300/400-level PHY elective (excluding PHY 499)
Spring—One 300/400-level PHY elective (excluding PHY 499)

COMPUTATIONAL PHYSICS—BS/MS

About the Program
This interdisciplinary program is offered jointly by the Departments of Physics (PHY) and Computer Science and Engineering (CSE). For further information, see the Computational Physics entry.

ENGINEERING PHYSICS—BS

About the Program
This interdisciplinary program is offered jointly by the Departments of Physics (PHY) and Electrical Engineering (EE). For further information, see the Engineering Physics entry.

PHYSICS—MINOR

Acceptance Criteria
Minimum GPA of 2.0 in the prerequisite courses.

Prerequisite Courses
MTH 141 College Calculus I
MTH 142 College Calculus II
PHY 107 General Physics I or PHY 117 Honors Physics I
PHY 108 General Physics II or PHY 118 Honors Physics II
PHY 158 General Physics II Lab

Required Courses
PHY 207 General Physics III or PHY 217 Honors Physics III (lab is not required)
PHY 208 General Physics IV (lab is not required)
PHY 301 Intermediate Mechanics I
PHY 403 Electricity and Magnetism I
One 300/400-level PHY elective course (excluding PHY 499; PHY 401 Modern Physics I is strongly recommended)

Summary
Total required credit hours for the minor 33

Physiology*

Department of Physiology and Biophysics

School of Medicine and Biomedical Sciences

124 Sherman Hall
South Campus
Buffalo, NY 14214-3078
Phone: (716) 829-2738
Fax: (716) 829-2344
Web site: www.smbs.buffalo.edu/phb/

Harold C. Strauss
Chair

Mary Anne Rokitka
Director of Undergraduate Studies

**Not a baccalaureate degree program*

For a listing of Physiology faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Physiology courses provide students whose majors are in the life and health sciences with an understanding of body functions at the cellular and organ-system levels. A number of courses serve as prerequisites for majors with a healthcare focus. Students whose majors are not directly associated with the health professions are encouraged to take physiology courses as long as students satisfy course prerequisites.

Polish

Department of Linguistics

College of Arts and Sciences

609 Baldy Hall
North Campus
Buffalo, NY 14260-1030
Phone: (716) 645-2177
Fax: (716) 645-3825
Web site: linguistics.buffalo.edu/language_programs/

Karin Michelson
Chair

David Fertig
Director of Language Programs
fertig@buffalo.edu

For a listing of Polish faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

Degrees Offered

- **Undergraduate:** Minor

About the Program

With almost 40 million people in Poland and more than 10 million Polish Americans, Polish continues to be an important world language. Poland has contributed to world culture and civilization in almost every area, and the tradition of sustaining a rich cultural life is reflected in the output by Polish painters and musical composers and in the number of Nobel prizes for literature won by Polish citizens, including Henryk Sienkiewicz (1905), Wladyslaw Reymont (1924), Czeslaw Milosz (1980), and Wislawa Szymborska (1996).

The Polish program is intended to train students in the spoken and written language and to deepen their knowledge of and interest in the literature and culture of Poland.

POLISH STUDIES—MINOR

Acceptance Criteria

Acceptance to Track A requires completion of POL 101 Elementary Polish 1st Semester and POL 102 Elementary Polish 2nd Semester. Acceptance to Track B requires completion of any Polish Studies course with a grade of C or above.

TRACK A

Prerequisite Language Courses

POL 101 Elementary Polish 1st Semester
POL 102 Elementary Polish 2nd Semester

Required Language Courses

POL 203 Intermediate Polish 1st Semester
POL 204 Intermediate Polish 2nd Semester

Required Upper Level Courses

Four courses (12 credit hours) chosen from the following:

POL 305 Advanced Polish: Part I
POL 306 Advanced Polish: Part II
POL 323 Polish Literature in Translation
POL 324 Poland Today
POL 338 Poland and Central Europe
POL 499 Independent Study
POL 410 Special Topics (repeatable for credit)
POL 411 Special Topics (repeatable for credit)

Summary

Total required credit hours for the minor 18
(+ 6 hours prerequisites)

Note: One 300 or 400 level course from the following list of approved courses may substitute for a required upper level course.

These courses will be reviewed annually by the Director to ensure that they are taught by collaborating faculty and contain significant Polish Studies content. Also, courses other these can be used towards the Minor if they are shown to have a significant Polish content and receive approval by the Director of the Polish program.

HIS 313 20th Century Europe
HIS 319 Europe Between the World Wars, 1919-39
HIS 346 19th Century Europe
HIS 383 War & State: European Foundations
HIS 384 War and Peace since 1800
HIS 371 Social History of Europe
HIS 395 History of the Cold War
HIS 456 European Underground Movements
HIS 475 The Great War and European Society
PSC 351 Politics in E. Europe Post Soc. Sts.

TRACK B

Required 200 level courses

Two courses (6 hours) chosen from the following:

POL 222 Polish Culture: Theatre
POL 223 Topics
POL 231 Introduction to Polish Literature
POL 232 Introduction to Polish Literature
POL 210 Special Topics
POL 211 Special Topics

Required Upper Level Courses

Four courses (12 semester hours) chosen from the following:

POL 305 Advanced Polish: Part I
POL 306 Advanced Polish: Part II
POL 323 Polish Literature in Translation
POL 324 Poland Today
POL 338 Poland and Central Europe
POL 499 Independent Study

(Continued on next page)

POL 410 Special Topics (repeatable for credit)
POL 411 Special Topics (repeatable for credit)

Summary

Total required credit hours for the minor 18

Note: One course from the following list of approved courses may be substituted for a required 200 level course.

HIS 221 Eastern Europe
HIS 227 Twentieth-Century Europe and the World
HIS 299 The Holocaust and History

Note: One course from the following list of approved courses may be substituted for a required upper level course.

These courses will be reviewed annually by the Director to ensure that they are taught by collaborating faculty and contain significant Polish Studies content. Also, courses other these can be used towards the Minor if they are shown to have a significant Polish content and receive approval by the Director of the Polish program.

HIS 313 20th Century Europe
HIS 319 Europe Between the World Wars, 1919-39
HIS 346 19th Century Europe
HIS 383 War & State: European Foundations
HIS 384 War and Peace since 1800
HIS 371 Social History of Europe
HIS 395 History of the Cold War
HIS 456 European Underground Movements
HIS 475 The Great War and European Society
PSC 351 Politics in E. Europe Post Soc. Sts.

Political Science

Department of Political Science

College of Arts and Sciences

520 Park Hall
North Campus
Buffalo, NY 14260-4120
Phone: (716) 645-2251
Fax: (716) 645-2166
Web site: www.polsci.buffalo.edu

James E. Campbell
Chair

For a listing of Political Science faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

In political science, students have a wide variety of backgrounds, interests, and career aspirations. As our range of possible concentrations in the department suggests, students interested in law school, public affairs, government service, graduate school, or international studies obtain a solid background with the courses offered. Of course, the core or basic concentration allows students the most flexibility in designing a curriculum to meet individual needs. Many political science majors go on to obtain advanced degrees in law or political science. Some students build upon their internship experiences to pursue careers in politics or government.

Degrees Offered

Undergraduate: BA, Minor

- **Concentrations:** Advanced, American Politics and Public Affairs, Comparative, General, International, and Public Law
- **Graduate:** MA, MA/JD, PhD, PhD/JD

Degree Options

General Concentration

For those majors with general interests in politics and government. This program allows majors the most flexibility in choosing courses to match individual interests from the five fields of American politics, comparative politics, international relations, methods of inquiry, and political philosophy. The intent behind the core requirements is to give every student the breadth to understand political issues, theories, and concepts, along with the needed skills for interpreting and doing political research.

Public Law Concentration

Specifically for students who plan to attend law school. Students who complete the core concentration in political science are not precluded from applying to law school; however, the public law concentration represents the department's best collective recommendations for a structured undergraduate plan.

American Politics and Public Affairs Concentration

Prepares students for careers in public service or political organizations, and provides a solid background for the more than 15 million employment opportunities in local, state, or federal government. An internship is considered a useful part of this option.

International Politics Concentration

Students planning careers in the international field are encouraged to pursue this concentration.

Comparative Politics Concentration

Students planning careers in the comparative field are encouraged to pursue this concentration.

Advanced Concentration

Students with excellent undergraduate records are likely to be successful applicants to graduate school; however, the department recommends this particular concentration to provide the best preparation for the top graduate programs in political science. A foundation in the areas of research design, mathematics, formal modeling, and statistics make the transition to a graduate program much easier. In addition, upper division courses that enable students to execute independent research projects and write research essays are highly recommended.

Double majors must satisfy all of the requirements of two departments.

Joint majors combine the programs in two departments, subject to the specific requirements in each. A student pursuing political science as a joint major is restricted to the core concentration, and must complete eight courses in political science, including PSC 100, PSC 101, one methods of inquiry course, four courses at the 300-level or above (three must be courses other than PSC 496, PSC 497, or PSC 499), and at least one course in comparative politics, international relations, or political philosophy.

Minors in political science must complete the three required courses, PSC 100, PSC 101, and PSC 200 or PSC 393 or PSC 408; three upper-division courses, one of which must be in international relations, comparative politics, or political philosophy; and one additional political science course in any field or at any level.

Advisement

After acceptance into the major or minor, students may consult with a departmental advisor for assistance in understanding departmental and university requirements for the degree. Advisor office hours are posted at the department office, 520 Park Hall.

Acceptance Information

Students should apply for admission to the major in political science no later than the beginning of their junior year. To become eligible, students must have completed two political science courses with a minimum GPA of 2.0, and have a minimum UB GPA of 2.0. Applicants should bring a copy of their current UB DARS report directly to the Department of Political Science. Prospective majors are encouraged to complete the department's required courses: PSC 100 during their first semester, and PSC 101 as well as PSC 200 or PSC 393 or PSC 408 during their second semester.

Academic Requirements

Please note that a minimum GPA of 2.0 in both the major and overall is required for graduation.

Transfer Policy

Credit for political science courses completed with a passing grade at other colleges or universities may be granted in instances where comparable courses exist within the department at UB. The department gives transfer credit for a maximum of five political science courses. Where applicable, transfer courses may be used to meet specific departmental requirements.

POLITICAL SCIENCE—BA

General and Advanced Concentrations and Concentrations in Public Law, American Politics and Public Affairs, International Politics, Comparative Politics

Acceptance Criteria
Minimum GPA of 2.0 in the prerequisite courses.

Advising Note
Minimum GPA of 2.0 overall and in the major required for graduation. Minimum GPA of 3.0 overall and in the major is required for all internships.

Prerequisite Courses
Any two political science courses.

Required Courses
Twelve PSC courses, with no more than five courses in any particular distribution field, distributed as follows:
PSC 100 Enduring Issues in Political Science
PSC 101 Introduction to American Politics
Seven 300/400-level PSC courses, up to two of which may be from: PSC 496 Washington Semester Internship, PSC 496 Community Internship Program, PSC 496 New York State Senate and Assembly Internship, PSC 497 Honors Thesis, PSC 499 Independent Study
One methods of inquiry course: PSC 200 Empirical Political Science, PSC 393 Game Theory and Politics, or PSC 408 Basic Statistics for Social Science. Acceptable substitutions: SOC 294, ECO 480, PSY 207, STA 119, SSC 225, MGQ 301, and GEO 410.
At least one course in any three of the following four fields: American politics, comparative politics, international relations, political philosophy

Note: Some concentrations have additional required courses.

Summary
Total required credit hours for the major.....36

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Spring—One methods of inquiry course
Fall or Spring—PSC 100, PSC 101

SECOND YEAR
Fall—One 300/400-level PSC course
Spring—Two 300/400-level PSC courses

THIRD YEAR
Fall—Two 300/400-level PSC courses
Spring—One 300/400-level PSC course

FOURTH YEAR
Fall—One 300/400-level PSC course, one PSC elective at any level
Spring—One PSC elective at any level

Concentrations

PUBLIC LAW

FIRST YEAR
Fall or Spring—PSC 100, PSC 101
Spring—One methods of inquiry course

SECOND YEAR
Fall—One 200-level PSC course from the public law list
Spring—One 300/400-level PSC course from the public law list

THIRD YEAR
Fall—One 300/400-level PSC course from the public law list
Spring—One 300/400-level PSC course from the public law list, one 300/400-level PSC course

FOURTH YEAR
Fall—One 300/400-level PSC course from the public law list, one PSC elective at any level
Spring—Two 300/400-level PSC courses

AMERICAN POLITICS AND PUBLIC AFFAIRS

FIRST YEAR
Spring—One methods of inquiry course
Fall or Spring—PSC 100, PSC 101

SECOND YEAR
Fall—One 200/300/400-level course in the American politics field
Spring—One 300/400-level PSC course in the American politics field

THIRD YEAR
Fall—One 300/400-level PSC course in the American politics field, one 300/400-level PSC course
Spring—One 300/400-level PSC course in the American politics field

FOURTH YEAR
Fall—Two 300/400-level PSC courses
Spring—One 300/400-level PSC elective, one 200/300/400-level PSC elective

INTERNATIONAL POLITICS

FIRST YEAR
Spring—One methods of inquiry course
Fall or Spring—PSC 100, PSC 101

SECOND YEAR
Fall—PSC 102
Spring—Two 300/400-level PSC courses in the international field

THIRD YEAR
Fall—Two 300/400-level PSC courses in the international field
Spring—One 300/400-level PSC course in the international field

FOURTH YEAR
Fall—One 300/400-level PSC course, one PSC elective at any level
Spring—One 300/400-level PSC course

COMPARATIVE POLITICS

FIRST YEAR
Spring—One methods of inquiry course
Fall or Spring—PSC 100, PSC 101

SECOND YEAR
Fall—PSC 103
Spring—Two 300/400-level PSC courses in the comparative field

THIRD YEAR
Fall—Two 300/400-level PSC courses in the comparative field
Spring—One 300/400-level PSC course in the comparative field

FOURTH YEAR
Fall—One 300/400-level PSC course, one PSC elective at any level
Spring—One 300/400-level PSC course

ADVANCED

FIRST YEAR
Spring—PSC 200 or PSC 408
Fall or Spring—PSC 100, PSC 101

SECOND YEAR
Fall—PSC 393
Spring—PSC 200 or PSC 408; one 300/400-level PSC course

THIRD YEAR
Fall—One 300/400-level PSC course
Spring—Two 300/400-level PSC courses

FOURTH YEAR
Fall—Two 300/400-level PSC courses
Spring—One PSC elective at any level

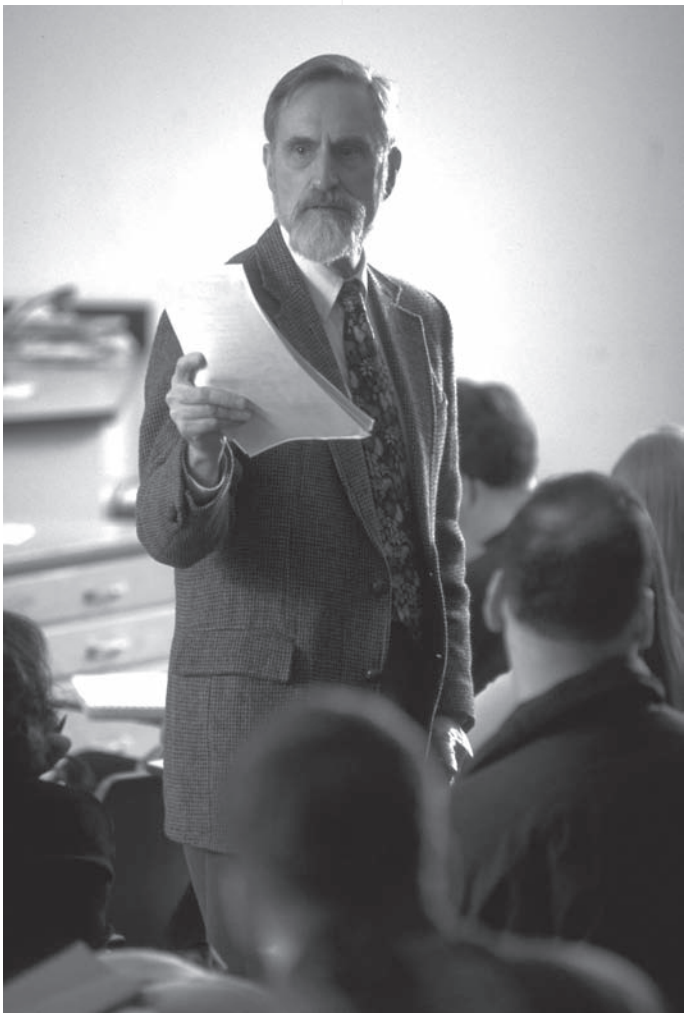
(Continued on next page)

Electives and Course Groupings
Public Law List
PSC 215 Law and the Political Process
PSC 225 Equality and Justice in the United States
PSC 301 Cases in Civil Liberties
PSC 302 Protecting Civil Liberties
PSC 303 Constitutional Law
PSC 305 Judicial Politics
PSC 401 Advanced Civil Liberties
PSC 430 Human Rights
PSC 470 Legal Political Theory
PSC 492 Pre-law Honors Seminar

POLITICAL SCIENCE—MINOR

Required Courses
PSC 100 Enduring Issues in Political Science
PSC 101 Introduction to American Politics
One methods of inquiry course: PSC 200 Empirical Political Science, PSC 393 Game Theory and Politics, or PSC 408 Basic Statistics for Social Science. Acceptable substitutes: SOC 294, ECO 480, PSY 207, STA 119, SSC 225, MGQ 301, and GEO 410.
Three 300/400-level PSC courses; at least one must be in comparative politics, international relations, or political philosophy
At least one additional political science course in any field at any level.

Summary
Total required credit hours for the minor 21



Portuguese*

Department of Romance Languages and Literatures

College of Arts and Sciences

910 Clemens Hall
North Campus
Buffalo, NY 14260-4620
Phone: (716) 645-2191
Fax: (716) 645-5981
Web site: rll.buffalo.edu

Maureen Jameson
Chair
(716) 645-2191
jameson@buffalo.edu

**Not a baccalaureate degree program*

For a listing of Portuguese course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Approximately 200,000,000 people worldwide speak Portuguese. The largest numbers of Portuguese speakers are found in Portugal, Brazil, Mozambique, Angola, Guinea-Bissau, Cape Verde, and the United States. Over the years, writers working in Portuguese have made major contributions to world literature. Students will find that mastery of a Romance language (e.g., Spanish, French, Italian) will facilitate development of proficiency in Portuguese.

Career Opportunities/ Further Study

Students with a variety of majors can enhance their career opportunities by developing proficiency in Portuguese and knowledge of Luso-Brazilian culture. Individuals with such qualifications can explore job possibilities with U.S. corporations doing business in the Portuguese-speaking world.

Pre-Dentistry*

Student Advising Services

109 Norton Hall
North Campus
Buffalo, NY 14260
Phone: (716) 645-6013
Web site: prehealth.buffalo.edu

Elizabeth Morsheimer
Coordinator of Pre-Health Advising Services
etm3@buffalo.edu

Dalene Aylward
Senior Academic Advisor
dmg8@buffalo.edu

**Not a baccalaureate degree program*

About Pre-Dentistry at UB

In the United States and Canada, dentistry is a four-year doctoral level program that prepares men and women for the practice of general dentistry or entry into one of the specialty training programs in dentistry. With the anticipated shortage of dentists in the United States in the near future, there will be an increased demand for dentists throughout the country.

Few colleges or universities have a specific pre-dental program, and this is true of UB as well. Most students pursuing a career in dentistry choose a major area of study in the biological sciences. The latter's degree requirements generally include all the prerequisite courses necessary to enroll in a DDS program. However, it is not necessary to choose a major in the sciences. If a student chooses a major outside the biological sciences, he or she is advised to complete additional course work in biology beyond the prerequisite courses, specifically in areas such as biochemistry, microbiology, histology, molecular biology, and cellular biology. Courses in biology at the molecular or microscopic level provide excellent preparation for the basic science course work during the first two years of dental school.

Degrees Offered

- **Combined:** BS/DDS (Biological Sciences/Dentistry)
- **Graduate:** DDS

Degree Options

In order to enroll in a specialty-training program, it is necessary to first complete a DDS degree.

All specialty-training areas are competitive, while oral maxillofacial surgery and orthodontics are extremely competitive. Programs are between two and six years in length depending on the specialty.

The University at Buffalo offers a Combined Degree Program between the College of Arts and Sciences and the School of Dental Medicine. This is a program designed for individuals who have a clear career focus and strong motivation to pursue a career in dentistry prior to entering undergraduate school. The program allows students to complete a combined degree with a bachelor's component in biology and a doctor of dental surgery in seven years. Students complete the first three years of the program at the undergraduate level and the last four years in the School of Dental Medicine. To allow for the completion of the undergraduate degree, students must major in biology.

Some Dental Specialties:

- Endodontics
- Oral maxillofacial surgery
- Oral pathology
- Orthodontics
- Pediatric dentistry
- Periodontics
- Prosthetics
- Public health dentistry

Advisement

In order to enroll in the DDS program at the University at Buffalo, an applicant must complete all of the courses listed below as part of his or her undergraduate experience.

- Two semesters of general biology with a laboratory experience
- Two semesters of general chemistry with a laboratory experience
- Two semesters of organic chemistry with a laboratory experience
- Two semesters of general physics with a laboratory experience
- Two semesters of English, including composition

The prerequisite courses for other U.S. schools are very similar. It is advisable to review the prerequisite courses at the various schools of interest early on in the undergraduate years so that all courses can be completed prior to beginning the dental school application process.

In order to enroll in the School of Dental Medicine, an applicant must have completed at least ninety hours of undergraduate course work, including all of the prerequisite courses. There is no requirement to complete a bachelor's degree. However, applicants are strongly encouraged to do so. Individuals who will not complete a bachelor's degree prior to enrolling are rarely accepted and then only with outstanding academic records.

As mentioned above, while there is no required major area of study, most applicants choose biology or one of the biological sciences for their undergraduate studies.While course work in the sciences is important to success in dental school, dentistry is very much a "people profession" and course work in psychology and the humanities is also very important to an aspiring professional.

While it is not a requirement for admissions, all applicants are strongly encouraged to gain experience in clinical dentistry while in an undergraduate program. This can be done in a private practice, general or specialty; a hospital dental clinic; or at the UB School of Dental Medicine. This experience provides the future dentist with the opportunity to gain first-hand knowledge of the activities and responsibilities that comprise the practice of dentistry.

Acceptance Information

Although no particular major is required to apply to the School of Dental Medicine, we do require completion of certain courses. Please see the Advising Information section below for additional information.

All applicants to the School of Dental Medicine are required to complete the Dental Admissions Test (DAT), administered through the American Dental Association in Chicago. Nearly every dental school in the United States requires the DAT. After registering with the ADA, an applicant can schedule a convenient time to complete the exam at any Sylvan Learning Center.

All applications to the School of Dental Medicine are received through the Associated American Dental Schools Application Service (AADSA) administered by the American Dental Education Association (ADEA) in Washington DC. Nearly all U.S. dental schools participate in AADSAS. One application completed with AADSAS can be directed to any of the participating schools.

Each year, the school receives approximately 1,000 applications for admissions. Approximately 250 are invited to the school to meet with members of the admissions committee, faculty and dental students. From those invited, a class of eighty-five is selected each year. In order to receive consideration for acceptance, an applicant should have a minimum overall GPA, and a minimum science GPA, of 3.3. DAT (Dental Admissions Test) scores should, at minimum, average 17 (scored on a 30-point scale). For students applying to the combined degree program, in order to enroll at the School of Dental Medicine, participants must maintain and overall GPA of 3.5 as well as GPA of 3.5 in all biology, chemistry, and physics courses in the undergraduate portion of the program. In addition, participants must complete the Dental Admissions Test (DAT) early in the third year of the program and earn required minimum scores. Application for the combined program is made through the School of Dental Medicine. Acceptance into the program requires an interview at the School of Dental Medicine prior to the freshman year of the undergraduate portion of the program. The preprofessional health advisor can provide further information.

Early Assurance Program with the UB School of Dental Medicine

Each year, well-qualified undergraduates may receive formal acceptance to UB's School of Dental Medicine after the second semester of their sophomore year. To qualify, students must possess a minimum GPA of 3.3 and complete specific science courses. Upon receipt of the baccalaureate degree, the dental phase begins. This is not an accelerated program. The preprofessional health advisor (108 Norton; (716) 645-6013; see http://prehealth.buffalo.edu) can provide further information.

Pre-Health*

Student Advising Services

109 Norton Hall
North Campus
Buffalo, NY 14260
Phone: (716) 645-6013
Web site: prehealth.buffalo.edu

Elizabeth Morsheimer
Coordinator of Pre-Health Advising Services
etm3@buffalo.edu

Dalene Aylward
Senior Academic Advisor
dmg8@buffalo.edu

**Not a baccalaureate degree program*

About Pre-Health at UB

The University at Buffalo offers a wide variety of means of support for students pursuing programs leading to graduate study in the professional schools of optometry, podiatry, chiropractic, and veterinary medicine. While we do not have these professional programs at the graduate level, we offer the coursework necessary to apply to these professional schools at other universities. Additionally, we provide information regarding the prerequisite courses, admissions requirements, and the various schools located across the United States. Students applying to these professional schools can utilize the services of the UB Pre-Health Committee for letters of recommendation. UB often hosts representatives from these schools to share information about their programs. The Pre-Health advising Web site contains a wealth of information for students interested in this track, including recommended courses and a timeline for undergraduate studies and graduate applications.

Pre-Law*

Student Advising Services

109 Norton Hall
North Campus
Buffalo, NY 14260
Phone: (716) 645-6013
Web site: prelaw.buffalo.edu

Jon Bonebrake
Pre-Law Advisor
bonebrak@buffalo.edu

**Not a baccalaureate degree program*

About Pre-Law at UB

Admission into law school requires an undergraduate (bachelor's) degree in any field of study. The University at Buffalo pre-law advisor works closely with pre-law students in an effort to ensure applicants are well-informed and adequately prepared for the rigorous law school application process.

While pre-law studies is not an academic major or formal academic program at the University at Buffalo, we offer a wide variety of support for students interested in pursuing graduate study in law. Specialized programming and services for students who self identify as pre-law are coordinated each semester by the pre-law advisor. Services for pre-law students consist of relevant workshops, a pre-law listserv, a Web site, and active pre-law clubs and organizations, including Phi Alpha Delta Pre Law Fraternity Inc. (PAD) and a Student Association Pre-Law Society. There is also a pre-law resource area that includes magazines, books, and law school catalogs.

The University has recently created a guaranteed admission program to the law school for undergraduate students who declare an interest in pre-law prior to their matriculation and meet certain criteria established jointly by the University Honors College and the Law School. While the guaranteed admission program has strict high school and undergraduate academic requirements, it does provide students admitted to the guaranteed admission program with a waiver of the LSAT requirement.

Since its founding in 1887, the University at Buffalo School of Law—the State University of New York's only law school—has established an excellent reputation and is widely regarded as a leader in legal education. Its cutting-edge curriculum provides both a strong theoretical foundation and the practical tools graduates need to succeed in a competitive marketplace, wherever they choose to practice. A special emphasis on interdisciplinary studies, public service, and opportunities for hands-on clinical education makes UB's School of Law unique among the nation's premier public law schools.

UB undergraduates can take advantage of the programs and networking opportunities the Law School provides to further enhance their collegiate experience. Such activities include a biannual networking session, admissions workshops, and opportunities to sit in on law school classes.

Pre-Medicine*

Student Advising Services

109 Norton Hall
North Campus
Buffalo, NY 14260
Phone: (716) 645-6013
Web site: prehealth.buffalo.edu

Elizabeth Morsheimer
Coordinator of Pre-Health Advising Services
etm3@buffalo.edu

Dalene Aylward
Senior Academic Advisor
dmg8@buffalo.edu

**Not a baccalaureate degree program*

About Pre-Medicine at UB

The University at Buffalo offers a wide variety of means of support for students pursuing programs leading to graduate study in the professional health schools, including medicine. While pre-medical studies is not an academic major or formal academic program at UB, students can take all the courses required for medical admission and can further enhance their application by selecting courses from a number of our natural science departments. Advising services consists of pre-professional health advisors, varied pre-health workshops, a pre-health listserv, a website, The "Pre-Health Bulletin" blog, and active pre-health student clubs such as the Association for Premedical Students (APMS) and Alpha Epsilon Delta (AED), a local chapter of one the oldest pre-health honor societies in the country. Students can schedule appointments to meet with the pre-health advisors throughout the calendar year. We also provide the services of the Pre-health Committee for a Committee Letter, which is highly recommended by the medical schools. The pre-health advising website contains a wealth of information for students interested in this track, including recommended courses and a timeline for undergraduate studies and professional school applications.

Acceptance Information

Early Assurance Program with the UB School of Medicine and Biomedical Sciences

Each year, very well-qualified undergraduates may receive formal acceptance from the University at Buffalo School of Medicine and Biomedical Sciences in the second semester of their sophomore year. To qualify, students must possess a minimum approximate overall and science GPA of 3.75 and must complete particular science courses with a minimum grade of B. A combined SAT score of 1400 (verbal and quantitative) or above is required. Upon receipt of the baccalaureate degree, the medical phase begins. This is not an accelerated program or combined degree program. The pre-professional health advisor can provide further information.

Pre-Social Work*

School of Social Work

685 Baldy Hall
North Campus
Buffalo, NY 14260
Phone: (716) 645-3381
Fax: (716) 645-3456
Web site: www.socialwork.buffalo.edu/
E-mail: sw-info@buffalo.edu

Kathryn Kendall
Director of Recruitment and Alumni Relations
685 Baldy Hall
(716) 645-3381, ext. 230
kkendall@buffalo.edu

**Not a baccalaureate degree program*

About Pre-Social Work at UB

The Graduate School of Social Work was formally established in 1934 to meet the needs of the Buffalo and Western New York community. Since that time, the school has continuously maintained its full accreditation status with the Council on Social Work Education (CSWE) and was recently re-accredited through 2011. Nearly 500 students are currently pursuing the MSW (alone or in combination with another degree) at one of three locations within New York: Buffalo, Rochester, and Jamestown. For most social work programs, a bachelor's degree in any subject is acceptable, as long as other admissions requirements have been met.

Degrees Offered

- **Combined:** BA/MSW
- **Graduate:** JD/MSW, MBA/MSW, MSW, PhD in Social Welfare (MSW required)

Advisement

Admissions requirements are geared towards finding well-rounded, well-prepared students who are a good match for our program and the profession of social work. A bachelor's degree from any major is acceptable, as long as our liberal arts prerequisites have been satisfied. A minimum of 24 credits of liberal arts course work is required. Of these 24 credits, six must be in the social or behavioral sciences (e.g., psychology, sociology, anthropology, political science) and six in the arts or humanities (e.g., history, English, foreign languages, philosophy, ethnic or gender studies). The remaining twelve credits may be made up with any combination of the above or with courses from the natural sciences or mathematics.

In addition, students must have taken a class or combination of classes with significant content in human anatomy, reproduction, and development. Classes that may meet this requirement include those in anatomy, biology, and human physiology. This requirement can be met after students enter the MSW program but before their final year. Approval for courses meeting the requirement is done on a case-by-case basis; students need to contact the school for approval of any given course.

Acceptance Information

Although no particular major is required to apply to the School of Social Work, we do recommend completion of certain courses. Please see the Advising Information section below for additional information.

In addition to academic credentials, the UB School of Social Work looks for personal attributes that are considered essential to the professional practice of social work: Initiative; integrity; reliability; emotional stability; sound judgment; capacity for change, growth, and self-discipline; and concern for the needs of others.

Applicants to interdisciplinary dual degree programs with the School of Law or School of Management must meet the admissions requirements of the collaborating program, including standardized tests. The BA/MSW program is open only to interdisciplinary social science majors in the Health and Human Services concentration.

Psychology

Department of Psychology

College of Arts and Sciences

283 Park Hall
North Campus
Buffalo, NY 14260-4110
Phone: (716) 645-3650, ext. 283
Fax: (716) 645-3801
Web site: psychology.buffalo.edu
E-mail: cmgreen@acsu.buffalo.edu

Paul A. Luce
Chair

James R. Sawusch
Director of Undergraduate Studies

Christa M. Greenberg
Coordinator of Undergraduate Studies

For a listing of Psychology faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Psychology is the science of behavior and the mind. The study of psychology provides an understanding of basic processes of sensation, perception, learning, cognition, development, and personality along with principles of social psychology, clinical psychology, and behavioral neuroscience. Knowledge of psychological principles and of scientific methods for evaluating theories and research in the social and behavioral sciences is essential in our rapidly changing society.

The requirements for the psychology major are designed to provide students with foundational skills in statistics (PSY 207) and scientific methods (PSY 250) that are essential for subsequent coursework in psychology. The additional requirements for the psychology major are intended to introduce students to the great breadth of psychology as a scientific discipline; therefore, students are required to complete courses in four complementary areas of psychology. A second course in research methods (PSY 450) and experience in psychological research (PSY 498) are recommended for students who plan to pursue graduate study in psychology.

Degrees Offered

- **Undergraduate:** BA, BS
- **Graduate:** MA, PhD

Degree Options

The BA degree allows students to pursue diverse interests while obtaining a strong foundation in the behavioral sciences. The requirements and flexibility of this program readily allow students to pursue double majors or multiple minors to complement their interests in psychology. At the same time, the requirements for the BA degree program ensure that students have a solid foundation for advanced training in a variety of disciplines.

The BS degree in psychology provides students with a challenging undergraduate major that includes a strong science-training component. The basic goal is to provide a program that emphasizes the scientific foundations of psychology to prepare students for advanced training in psychology, medicine, cognitive science, neuroscience, and other related disciplines. The BS degree program is explicitly aimed at helping prepare students for graduate study in the sciences and science-based professions. Even if students do not continue their education at the graduate level, the background in science and mathematics that is part of this program provides students with knowledge and skills that broaden their career opportunities. Sample descriptions of programs that fulfill the requirements for the BS in psychology for students interested in cognitive psychology or cognitive science and for students interested in behavioral neurosciences (this program also fulfills typical requirements for a pre-med program) are available in 283 Park Hall.

Joint Major

The joint major is possible only with other majors that offer the BA degree. Students must complete PSY 101, MTH 115 or equivalent*, PSY 207, PSY 250, and five additional courses: four 300-level courses (one in each of four substantive areas) and one 400-level course. See BA requirements for additional information. The joint major requires 25 credit hours in psychology.

Transfer Policy

Transfer students who bring psychology coursework to UB must meet the same criteria for acceptance into the department as

students who start at this university. Students may transfer coursework required for admission into the department, as well as additional psychology coursework; however, courses taken in statistics and research methods, as well as upper-level psychology courses, must be evaluated and approved by the department. A minimum of three upper-level psychology courses must be taken at UB.

PSYCHOLOGY—BA

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in prerequisite courses before full acceptance.

Advising Notes

A minimum GPA of 2.0 in psychology courses is required for graduation. Majors whose GPAs in psychology courses fall below 2.0 during any semester are automatically placed on probation. Majors whose GPAs remain below 2.0 in consecutive semesters are dismissed from the department.

PSY 495 Undergraduate Supervised Teaching and PSY 496 Supervised Applied Experience do not count toward the course requirements for majors.

PSY 497 Honors, PSY 498 Undergraduate Research, and PSY 499 Independent Study may be taken for degree credit, but only 3 credit hours from this group count toward major requirements.

400-level courses are open only to psychology majors. Students are advised to go to 283 Park Hall and to apply early for the major, preferably while enrolled in PSY 250. Acceptance decisions can then be made contingent upon completion of PSY 250, and registration in upper-level courses is facilitated.

Students who have completed 60 credit hours but have not completed the prerequisite courses or achieved the minimum GPA of 2.5 may be provisionally accepted by the department (283 Park Hall). Students who are accepted provisionally must achieve a minimum GPA of 2.5 in the prerequisites to be fully accepted into the department. Students who do not have a minimum GPA of 2.5 in the prerequisites must repeat appropriate prerequisite coursework. The second grade in the repeated course is honored by the department for the purpose of admission to the psychology major.

Prerequisite Courses

PSY 101 Introductory Psychology
MTH 115 Survey of Algebra and Trigonometry or equivalent* or higher
PSY 207 Psychological Statistics
PSY 250 Scientific Inquiry in Psychology

Required Courses

Seven additional PSY courses distributed as follows:
Four 300-level courses, one from each of the four substantive areas listed after the BS chart
Minimum of three courses at the 400 level

Summary

Total required credit hours for the major.....35

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—PSY 101, MTH 115* or higher
Spring—PSY 207, one 300-level PSY course

SECOND YEAR
Fall—PSY 250, one 300-level PSY course
Spring—One 300-level PSY course

THIRD YEAR
Fall—One 300-level PSY course
Spring—One 400-level PSY course

FOURTH YEAR
Fall—One 400-level PSY course
Spring—One 400-level PSY course

**Unless exempted by SAT score, Advanced Placement credits, or transfer credits*

PSYCHOLOGY—BS

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in prerequisite courses before full acceptance.

Advising Notes

A minimum GPA of 2.0 in psychology courses is required for graduation. Majors whose GPAs in psychology courses fall below 2.0 during any semester are automatically placed on probation. Majors whose GPAs remain below 2.0 in consecutive semesters are dismissed from the department.

PSY 495 Undergraduate Supervised Teaching and PSY 496 Supervised Applied Experience do not count toward the course requirements for majors.

PSY 497 Honors, PSY 498 Undergraduate Research, and PSY 499 Independent Study may be taken for degree credit, but only 3 credit hours from this group count toward major requirements.

400-level courses are open only to psychology majors. Students are advised to go to 283 Park Hall and to apply early for the major, preferably while enrolled in PSY 250. Acceptance decisions can then be made contingent upon completion of PSY 250, and registration in upper-level courses is facilitated.

Prerequisite Courses

10 credit hours in psychology and 8 credit hours in mathematics:
PSY 101 Introductory Psychology
PSY 207 Psychological Statistics
PSY 250 Scientific Inquiry in Psychology
One two-course mathematics sequence (MTH 121-MTH 122 Survey of Calculus and Its Applications I-II or MTH 141-MTH 142 College Calculus I-II)

Required Courses

BIO 200 Evolutionary Biology
CHE 101-CHE 102 General Chemistry or CHE 105-CHE 106 Chemistry: Principles and Applications
Nine additional PSY courses, distributed as follows:
Four 300-level courses, one from each of the four substantive areas listed below
A minimum of five courses at the 400 or graduate level (500 level and above, taken with special permission as part of the undergraduate program), including PSY 450 Advanced Research Methods in Psychology or another laboratory-based upper-level PSY course (from a department-approved list)
Two courses from the Cognitive and Behavioral Neuroscience Courses, listed below

Summary

Total required credit hours for the major.....60

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—CHE 101 or CHE 105; MTH 121 or MTH 141
Spring—CHE 102 or CHE 106; MTH 122 or MTH 142

SECOND YEAR
Fall—BIO 200, PSY 101
Spring—PSY 207, one 300 level PSY course

THIRD YEAR
Fall—PSY 250, two 300 level PSY courses
Spring—PSY 450, one 300 level PSY course, one 400 level PSY course

(Continued on next page)

FOURTH YEAR
Fall—Two 400 level PSY courses
Spring—One 400 level PSY course

Electives and Course Groupings

COGNITIVE AND BEHAVIORAL NEUROSCIENCE
PSY 402 Psychopharmacology
PSY 416 Reasoning and Problem Solving
PSY 419 Biological Bases of Memory
PSY 421 Systems and Theories of Psychology
PSY 426 Biological Bases of Mental Disorders
PSY 428 Language Development
PSY 429 Psychophysiology
PSY 431 Mind-Body Connection in a Social World
PSY 434 Animal Behavior
PSY 435 Psychology of Reproduction
PSY 436 Neuropsychology
PSY 439 Biopsychology of Stress
PSY 440 Hormones and Behavior
PSY 443 Neurobiology of Communication in Animals
PSY 445 Memory
PSY 446 Animal Cognition
PSY 447 Psychology of Music
PSY 448 Psycholinguistics
PSY 451 Drug Addiction
PSY 457 Cognitive Development
PSY 470-PSY 475 Senior Seminars (in Cognitive and Behavioral Neuroscience areas)
PSY 485-PSY 490 Special Topics (in Cognitive and Behavioral Neuroscience areas)

SUBSTANTIVE AREA 1: CLINICAL
PSY 321 Psychology of Personality
PSY 322 Abnormal Psychology
PSY 323 Community Psychology
PSY 324 Clinical Psychology
PSY 325 Health Psychology

SUBSTANTIVE AREA 2: SOCIAL
PSY 331 Social Psychology
PSY 332 Social Conflict and Its Resolution
PSY 333 Psychology of Work in Organizations
PSY 336 Developmental Psychology

SUBSTANTIVE AREA 3: COGNITIVE
PSY 341 Cognitive Psychology
PSY 342 Introduction to Cognitive Science: Concepts of the Mind
PSY 343 Sensory Processes and Perception

SUBSTANTIVE AREA 4: BEHAVIORAL NEUROSCIENCE
PSY 351 Biopsychology

Religious Studies**

Department of Classics

College of Arts and Sciences

338 Millard Fillmore Academic Center
Ellicott Complex
North Campus
Buffalo, NY 14261
Phone: (716) 645-2154
Fax: (716) 645.2225
Web site: www.classics.buffalo.edu

J. Theodore Peña
Program Director

***This area of study is available as a special major through the College of Arts and Sciences and must be approved by the Special Majors Committee. It is not a separately registered degree program. Refer to the Special Majors section in this catalog for more information.*

For a listing of Religious Studies course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

With the cooperation of faculty in various departments and with an extended adjunct faculty, the Department of Classics offers courses in religious studies. The goals of the program are to (1) analyze religion as a human phenomenon, (2) provide the student with the intellectual tools necessary for the academic investigation of religion and religious texts, and (3) allow the student a degree of specialized study in a specialized area of religion or religious history. The approach is academic and is based upon objective, critical methods.

Romance Languages and Literatures

Department of Romance Languages and Literatures

College of Arts and Sciences

910 Clemens Hall
North Campus
Buffalo, NY 14260-4620
Phone: (716) 645.2191
Fax: (716) 645-5981
Web site: rll.buffalo.edu
E-mail: rll-info@buffalo.edu

Maureen Jameson
Chair
(716) 645-2191
jameson@buffalo.edu

For a listing of Romance Languages and Literatures faculty, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Department of Romance Languages and Literatures (RLL) offers undergraduate majors and minors in French, Italian, and Spanish. It also offers a minor in Latina/Latino Studies and courses in humanities.

Fluency in foreign languages is a vital skill for today's university students, whether for professional, intellectual, or social reasons. Whatever their chosen career, the need for intercultural and linguistic competencies is widely recognized. The cognitive benefits of language learning are well known, and the cultural opportunities open to linguistically competent students will enrich their lives immeasurably. Accordingly, the programs in RLL develop in students a high level of linguistic proficiency in the Romance languages and deepen their knowledge of and interest in Romance literatures and cultures.

Degrees Offered

There is no undergraduate degree offered in Romance Languages and Literatures itself. Rather, bachelor's degrees, graduate degrees, and/or minors are granted in the languages (French, Italian, Latina/Latino Studies, and Spanish) administered by the department.

Degree Options

Students majoring in French, Italian, and Spanish are encouraged to add a second major or a minor in another Romance language. The director of undergraduate studies assists students in the planning of joint and double majors. Some popular double majors combine language study with English, geography, international trade, linguistics, mathematics, media study, and psychology.

Students seeking teacher certification need to plan their curriculum with particular care. Information about teacher certification may be obtained from the Teacher Education Institute, Graduate School of Education, 375 Baldy Hall.

Advisement

Upon admission to RLL majors and minors, students are advised by departmental faculty advisors. Students are encouraged to plan their programs in consultation with their faculty advisors and to meet with them at least once each semester.

Interested students are encouraged to obtain a list of current offerings in languages and literatures from the Department of Romance Languages and Literatures website prior to registration each semester. Most introductory language courses are offered each semester. Upper division courses are offered on a rotating basis.

Acceptance Information

Acceptance into majors or minors is based on completing a designated number of 200-level courses with a minimum GPA in those courses. Students who do not meet the criteria for acceptance into a given program may be admitted on a provisional basis while they work to fulfill requirements. Application to the majors and minors in French, Italian, and Spanish is made when the student brings a copy of her/his current UB DARS report directly to the department, or when she/he applies online at the department Web site. Consultation with the department and completion of a formal application for acceptance into the program are required.

Transfer Policy

Transfer students are welcome in the majors and minors in the Department of Romance Languages and Literatures. To facilitate the evaluation of courses completed elsewhere, transfer students should submit course materials (catalog descriptions, syllabi, reading lists, papers, or exams) to the department. The number of transfer credits applied toward a major or minor is determined on an individual basis.

Russian**

Department of Linguistics

College of Arts and Sciences

609 Baldy Hall
North Campus
Buffalo, NY 14260-1030
Phone: (716) 645-2177
Fax: (716) 645-3825
Web site: linguistics.buffalo.edu/language_programs/

Karin Michelson
Chair

David Fertig
Director of Language Programs
fertig@buffalo.edu

***This area of study is available as a special major through the College of Arts and Sciences. It is not a separately registered degree program. Refer to the Special Majors section (http://undergrad-catalog.buffalo.edu/academicprograms/spma.shtml) for more information. For information on the minor, contact the department.*

For a listing of Russian course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Russia is one of the most important countries in the world. Covering eleven time zones, it stretches from Europe to the Pacific. Its language is spoken by over 150 million people, and the riches of its thousand-year-old civilization have influenced people all over the world. The Russian language program offers three years of Russian; advanced courses may be offered in some semesters.

Social Sciences Interdisciplinary

Office of Interdisciplinary Degree Programs

College of Arts and Sciences

203 Clemens Hall
North Campus
Buffalo, NY 14260-4670
Phone: (716) 645-2245
Fax: (716) 645-3640
Web site: cas.buffalo.edu/programs/idp/ugrad/
E-mail: dryden@buffalo.edu

Lee Dryden
Director

For a listing of Social Sciences Interdisciplinary faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Some of the major problems society faces today can be grasped fully only by integrating the specializations of different academic disciplines. The Interdisciplinary Degree Programs in the Social Sciences offer students an opportunity to focus on a particular thematic area of interdisciplinary studies whose breadth and diversity overlaps several departments. Departmental courses are organized in curricula administered by the Interdisciplinary Degree Programs in the Social Sciences.

The degree consists of courses taught by the faculty of departments throughout the university. Each program is designed to offer choice and flexibility in building the program most suitable for individual interests and career goals. Hundreds of students have graduated from the programs in recent years.

Within our BA and BS programs, the following concentrations are offered:

Cognitive Science

Cognitive Science is an interdisciplinary approach to how the mind works. It investigates thought and consciousness, the senses and emotions, the structure of language, cultural patterns, neural organization, and computational analogs of mental processes. It examines how these areas interact, how they develop in the growing human, and how they appear in animals.

Environmental Studies

The Environmental Studies BA or BS degree offers an opportunity for students to study social science and natural science disciplines related to the environment. Field courses and an internship are required. The BS adds environmental chemistry, ecological methods and spatial analysis. Specialty tracks provide a body of course work and experiences that prepare a student for a defined area within the field of environmental studies. The Environmental Studies Program maintains a list of preapproved specialty tracks and accepts petitions for individualized programs.

Health and Human Services (Social Gerontology, Community Mental Health, and Early Childhood Studies)

Health and Human Services studies the systems delivering human services to individuals and communities in need, the problems affecting those individuals and communities, and the professions and professionals providing services. A significant on-site practicum experience is an integral part of this curriculum.

International Studies

The International Studies program provides a general background useful for graduate studies or a number of career fields with international involvement. The three tiers of the curriculum beyond the prerequisite level are based on:

1. The belief that significant language competence is fundamental to the international field of inquiry/activity
2. The assumption that students in the field should be exposed to a range of disciplinary approaches
3. The desirability of pursuing some focused interest in a particular geographic area

Legal Studies

The Legal Studies concentration is designed for students who are interested in studying the law, legal processes, legal institutions, and the role of law in society. The program offers a multidisciplinary perspective on the law in its social and political context. This major provides a background for careers in government, law enforcement, social work, and professional training in law school.

Urban and Public Policy Studies

This program provides a general academic introduction to the fields of urban and public policy studies. It may prove useful to, but is not specifically designed for, those students who are anticipating graduate work in urban planning or an associated field, or who are seeking employment opportunities in politics or private agencies or the political field.

Degrees Offered

- **Undergraduate:** BA, BS, or Minor (in Social Sciences Interdisciplinary)
- **Concentrations:** (BA programs) Cognitive Science, Environmental Studies, Health and Human Services, International Studies, Legal Studies, Urban and Public Policy; (BS or Minor programs) Environmental Studies
- **Combined:** BA/MSW (Health and Human Services concentration/Graduate School of Social Work)

Degree Options

Bachelor of Arts

Students may complete a BA in the following concentrations: Cognitive Science, Environmental Studies, Health and Human Services, International Studies, Legal Studies, or Urban and Public Policy.

Bachelor of Science

Students may complete a BS in the Environmental Studies concentration.

Combined BA/MSW Degree Program

The Social Sciences Interdisciplinary Degree Programs (IDP) and the Graduate School of Social Work have developed a combined degree between IDP's major in health and human service and the MSW in social work. It is a five-year program of undergraduate and graduate coursework leading to the combined BA/MSW degree.

Students complete their first three years of undergraduate work in the IDP. Their fourth and fifth years are completed in the UB School of Social Work. The degree consists of 93 undergraduate credit hours and 60 graduate credit hours.

Students must complete eleven of the fifteen courses normally required for the major in health and human services. In addition, they must complete their undergraduate general education requirements. Students should see IDP program advisors for specific curriculum planning.

Acceptance to IDP's health and human services major does not assure admission to the BA/MSW degree program. Admission to the program is competitive. Students should apply for admission to the School of Social Work at the beginning of the second semester of the junior year to be admitted to the BA/MSW program for the following fall. BA/MSW applicants are not required to take the GREs. The application deadline for Social Work is March 1; February 1 if students wish to apply for graduate assistantships. Applications and further information can be obtained from Social Work's admissions office in 685 Baldy Hall.

Experience (e.g. volunteer, fieldwork, employment) in a social service setting is strongly encouraged for applicants to the BA/MSW programs.

For more information contact Dr. Lee Dryden, Director of the Interdisciplinary Degree Programs, at (716) 645-2245, ext. 2.

Double Majors

A double major may be completed in one of the interdisciplinary degree programs' concentrations along with a major in another department; only two of the departmental major courses may be counted toward the upper division of the interdisciplinary degree major concentration. Students cannot combine two interdisciplinary degree programs concentrations.

Joint Majors

Joint majors are not accepted.

Double Degrees

A double degree may be completed in one of the interdisciplinary degree programs' concentrations along with a major in another department. There are a very limited number of courses that may be used towards both majors so students must meet with an advisor in each major area before beginning a double degree, and regularly during completion of the program.

Advisement

All majors are administered by the Office of Interdisciplinary Degree Programs, College of Arts and Sciences. This office coordinates admission to each of the majors and advises students toward completion of the degree. There is at least one advisor for each concentration within the Office of Interdisciplinary Degree Programs.

Acceptance Information

Students should apply for admission to the major in the Social Sciences Interdisciplinary Degree Programs no later than the beginning of their junior year. Students are expected to follow major requirements as listed in the catalog for the academic year during which they are admitted to the major. To be eligible for admission to all programs except cognitive science, students are required to attain a grade of C or better in all prerequisite courses and to have a minimum UB GPA of 2.0. To be admitted to cognitive science, students are required to attain a grade of B- or better in the prerequisite course and to have a minimum UB GPA of 2.0.

Academic Requirements

Students in the Cognitive Science program must maintain a minimum GPA of 2.5 in the major. Students in all other concentrations must maintain a minimum GPA of 2.0 in the major. All students must maintain a minimum UB GPA of 2.0 overall, as well as a minimum GPA of 2.0 for the most recently completed semester. Beyond the level of the prerequisite course(s), only one D or D+ grade may be applied to the completion of major requirements.

Transfer Policy

Transfer students must first apply to the university and meet the university's transfer admission GPA requirements. Applications are then forwarded to the IDP office for review and course equivalency evaluation. Newly admitted transfer students who have completed the prerequisite requirements or have completed 60 or more credit hours at the school from which they have transferred are accepted to the major on a provisional basis, with full admission dependent upon completion of prerequisite requirements and attaining a minimum UB GPA of 2.0 within a specified time frame.

Courses from two-year colleges cannot be used toward fulfillment of the advanced-level course requirements in any of the interdisciplinary programs. At least 50 percent of coursework toward the major must be completed at UB.

SOCIAL SCIENCES INTERDISCIPLINARY—BA

Concentration in Cognitive Science

Acceptance Criteria

Minimum GPA of 2.0 overall.
Completion of prerequisite course with a grade of B- or better.

Advising Notes

Each course taken may be counted only once and applied toward only one requirement (e.g., CSE 463 may be applied to the contents courses or to the focus area, but not to both). Many courses in the focus areas have pre-requisite requirements. For more information students should check individual course descriptions in the undergraduate catalog or speak with the Cognitive Science advisor. Beyond the level of the prerequisite course(s), only one D or D+ grade may be applied to the completion of major requirements.

Prerequisite Courses

PSY 342 Introduction to Cognitive Science: Concepts of the Mind (offered fall only)

Required Courses

SSC 391 Cognitive Science Colloquium (this course involves attending at least 75 percent of the Cognitive Science Colloquia during each term SSC 391 is taken; the course should be taken three times; SSC 391 is graded P/F)
Three methods courses
Three content courses
Six courses in a single focus area
Senior thesis option: Students may optionally write a senior thesis, based on original research done in collaboration with their cognitive science advisor. Students choosing the senior thesis option are required to take five courses in a single focus area as opposed to the six required for students not selecting the thesis option.

Summary

Total required credit hours for the major (cognitive science) 42-49

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—PSY 101 (prerequisite for PSY 342)
Spring—One methods or content course

SECOND YEAR
Fall—PSY 342, two methods or content courses
Spring—One methods or content course; one focus area course

THIRD YEAR
Fall—SSC 391, one methods or content course, one focus area course
Spring—SSC 391, one methods or content course, one focus area course

FOURTH YEAR
Fall—Two focus area courses
Spring—SSC 391, one focus area course

Electives and Course Groupings

METHODS COURSES
APY 320 Seminar in Cognitive Anthropology
CSE 113-CSE 114 Introduction to Computer Science I-II or CSE 115-CSE 116 Introduction to Computer Science for Majors I-II
PHI 215 Introduction to Deductive Logic or PHI 315 Symbolic Logic
PSY 207 Psychological Statistics
PSY 250 Scientific Inquiry in Psychology

CONTENT COURSES
APY 106 Introduction to Cultural Anthropology
CSE 463 Introduction to Knowledge Representation and Reasoning or CSE 467/LIN 467 Computational Linguistics or CSE 472 Introduction to Artificial Intelligence
LIN 205 Introduction to Linguistic Analysis or LIN 207 Language, Society, and the Individual
PHI 108 Knowledge and Reality or PHI 221 Introduction to the Philosophy of Science
PSY 341 Cognitive Psychology or PSY 351 Biopsychology

FOCUS AREA COURSES
Most courses in these areas have at least one prerequisite requirement. Students should check individual course entries in the catalog or speak with the cognitive science advisor.

COGNITIVE DEVELOPMENT
APY 344 Animal Communication
APY 457 Evolutionary Biology of Humans
CDS 301 Language Development in Children
CDS 302 Language Disorders in Children
CSE 474 Introduction to Machine Learning
LIN 320 Language and the Brain
LIN 355 Child Language Development
LIN 455 Language Acquisition
NUR 250 Human Growth and Development
PGY 424 Developmental Neurobiology
PSY 336 Developmental Psychology
PSY 427 Adult Development and Aging
PSY 428 Language Development
PSY 430 Evolutionary Psychology
PSY 446 Animal Cognition
PSY 448 Psycholinguistics
PSY 457 Cognitive Development

COMPUTATIONAL MODELING
CSE 202 Programming in Lisp
CSE 463 Introduction to Knowledge Representation and Reasoning
CSE 467/LIN 467 Computational Linguistics
CSE 472 Introduction to Artificial Intelligence
CSE 473 Introduction to Computer Vision
CSE 474 Introduction to Machine Learning
IE 323 Ergonomics
IE 435 Human-Computer Interaction
LIN 438 Semantics
LIN 443 Semantics II
LIN 448 Formal Semantics
MTH 309 Introductory Linear Algebra
MTH 314 Logic for Computer Science
MTH 455 Mathematical Modeling
MTH 460 Theory of Games
PHI 415 Logical Theory I
PHI 416 Logical Theory II
PHI 417 Modal Logic
PSY 343 Sensory Processes and Perception

HIGH-LEVEL MENTAL PROCESSES
APY 246 Introduction to Primate Behavior
APY 276 Introduction to Ethnomedicine
APY 320 Seminar in Cognitive Anthropology
APY 344 Animal Communication
APY 377 Magic, Sorcery, and Witchcraft
APY 380 Myth, Ritual, Symbolism
CSE 202 Programming in Lisp
CSE 463 Introduction to Knowledge Representation and Reasoning
CSE 467/LIN 467 Computational Linguistics
CSE 472 Introduction to Artificial Intelligence
CSE 474 Introduction to Machine Learning
GEO 102 Introduction to Human Geography
GEO 485 Cartography and Geographic Visualization
LIN 356 An Introduction to Contemporary Theories of Metaphor
LIN 404 Discourse-Pragmatics

(Continued on next page)

LIN 413 Language and Cognition
LIN 417 Psycholinguistics
LIN 421 Language and Culture
LIN 438 Semantics
LIN 481 Cognitive Foundations of Language
PHI 315 Symbolic Logic
PHI 329 Metaphysics
PHI 333 Epistemology
PHI 345 Aesthetics and Philosophy of Art
PHI 370 Early Modern Philosophy
PSY 416 Reasoning and Problem Solving
PSY 445 Memory
PSY 446 Animal Cognition
PSY 447 The Psychology of Music
PSY 448 Psycholinguistics
PSY 457 Cognitive Development

LANGUAGE

APY 344 Animal Communication
CDS 286 Phonetics
CDS 301 Language Development in Children
CSE 202 Programming in Lisp
CSE 396 Introduction to the Theory of Computation
CSE 463 Introduction to Knowledge Representation and Reasoning
CSE 467/LIN 467 Computational Linguistics
CSE 472 Introduction to Artificial Intelligence
LIN 205 Introduction to Linguistic Analysis
LIN 207 Language, Society, and the Individual
LIN 301 Structure of English: The Sound System
LIN 302 Structure of English: Grammar and Lexicon
LIN 320 Language and the Brain
LIN 355 Child Language Development
LIN 356 An Introduction to Contemporary Theories of Metaphor
LIN 404 Discourse-Pragmatics
LIN 405 Bilingualism and Language Contact
LIN 410 Morphology
LIN 413 Language and Cognition
LIN 415 Syntax I
LIN 417 Psycholinguistics
LIN 421 Language and Culture
LIN 425 Typology and Universals
LIN 431 Phonetics
LIN 432 Phonology I
LIN 433 Phonology II
LIN 434 Syntax II
LIN 438 Semantics
LIN 439 Historical Linguistics
LIN 443 Semantics II
LIN 448 Formal Semantics
LIN 455 Language Acquisition
LIN 481 Cognitive Foundations of Language
PHI 315 Symbolic Logic
PHI 415 Logical Theory I
PHI 416 Logical Theory II
PHI 417 Modal Logic
PSY 428 Language Development
PSY 445 Memory
PSY 448 Psycholinguistics

NEUROSCIENCES

APY 457 Evolutionary Biology of Humans
CDS 383 Anatomy and Physiology of Audition
CDS 428 Neural Basis of Communication/Lab
CSE 474 Introduction to Machine Learning
LIN 320 Language and the Brain
PGY 424 Developmental Neurobiology
PGY 427 Neurophysiology
PGY 451 Human Physiology I
PSY 343 Sensory Processes and Perception
PSY 351 Biopsychology
PSY 418 Behavior Modification and Behavioral Medicine
PSY 419 Biological Bases of Memory
PSY 426 Biological Bases of Mental Disorders
PSY 429 Psychophysiology
PSY 436 Neuropsychology
PSY 439 Biopsychology of Stress
PSY 451 Drug Addiction

SYMBOLIC SYSTEMS

CSE 202 Programming in Lisp
CSE 305 Introduction to Programming Languages
CSE 396 Introduction to the Theory of Computation
CSE 451 Program Development
CSE 463 Introduction to Knowledge Representation and Reasoning
CSE 467/LIN 467 Computational Linguistics
CSE 472 Introduction to Artificial Intelligence
CSE 473 Introduction to Computer Vision and Image Processing
CSE 474 Introduction to Machine Learning
GEO 120 Maps and Mapping
GEO 381 Cartography
GEO 481 Geographic Information Systems
GEO 485 Cartography and Geographic Visualization
GEO 488 GIS Design
GEO 489 GIS Algorithms and Data Structures
IE 323 Ergonomics
IE 435 Human-Computer Interaction
LIN 415 Syntax I
LIN 434 Syntax II
LIN 438 Semantics
LIN 443 Semantics II
LIN 448 Formal Semantics
MTH 313 Elements of Set Theory
MTH 314 Logic for Computer Science
MTH 413 Introduction to Mathematical Logic I
MTH 414 Introduction to Mathematical Logic II
MTH 460 Theory of Games
PHI 315 Symbolic Logic
PHI 415 Logical Theory I
PHI 416 Logical Theory II
PHI 417 Modal Logic
PSY 405 Data Analysis Techniques
PSY 416 Reasoning and Problem Solving
PSY 445 Memory

SOCIAL SCIENCES INTERDISCIPLINARY—BA/BS

Concentration in Environmental Studies

Acceptance Criteria
Minimum GPA of 2.0 overall.
Completion of prerequisite course with a grade of C or better.

Advising Notes
Students originally entering the BA program may transfer applicable credits to the BS program. Beyond the level of the prerequisite course(s), only one D or D+ grade may be applied to the completion of major requirements.

Prerequisite Courses
SSC 118 Introduction to Environmental Studies

Required Courses
Three courses from social science core
Five courses for BA or seven courses for BS from natural science core
One analytical skills course
One spatial analysis course (BS students only)
Five courses from the chosen specialized track
SSC 496 ENV Environmental Internship

Summary
Total required credit hours for the major (environmental studies BA) 51-52
Total required credit hours for the major (environmental studies BS) 59-61

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—GEO 101 or GLY 101; SSC 118
Spring—GEO 106 or GLY 102, one social sciences core course

SECOND YEAR
Fall—BIO 200, one analytical skills course; GLY 161 (B.S. students only)
Spring—SSC 315, two social sciences core courses

THIRD YEAR
Fall—GLY 309, one specialized track course; GLY 310 (B.S. students only)
Spring—Two specialized track courses
Fall or Spring—One spatial analysis course (B.S. students only)

FOURTH YEAR
Fall—One specialized track course
Spring—One specialized track course
Fall or Spring—SSC 496

Electives and Course Groupings

SOCIAL SCIENCES CORE
APY 120 Environmental Anthropology
PHI 334 Environmental Ethics
SSC 213 Social Research Methods or SOC 293 Social Research Methods
SSC 406 Law and the Environment
SSC 442 Environmental Movements

NATURAL SCIENCES CORE
BIO 200 Evolutionary Biology (offered fall only)
GLY 309 Ecology (offered fall only; prerequisite: BIO 200)
GLY 310 Ecological Methods (BS students only; offered fall only; prereq: BIO 200)
GEO 101-GEO 106 Earth Science Systems 1&2 or GLY 101-GLY 102 Global Environmental Science 1&2
GLY 161 Introduction to Environmental Geochemistry (BS students only; offered fall only)
SSC 315 Field Ecology

ANALYTICAL SKILLS
PSY 207 Psychological Statistics
SOC 294 Basic Statistics for Social Sciences
SSC 225 Statistics for Social Sciences
STA 119 Statistical Methods

SPATIAL ANALYSIS (BS STUDENTS ONLY)
GEO 481 Geographic Information Systems (offered fall only)
PD 356 Computing for Environmental Analysis (offered spring only)

Specialized Tracks
Specialized tracks provide a body of coursework and experience that prepare a student for a defined area within the field of environmental studies. Five courses in the chosen specialized track are required. The Office of Interdisciplinary Degree Programs maintains a list of pre-approved specialized tracks in the environmental studies curriculum and accepts petitions for individualized programs; please see the environmental studies advisor for further information.

ENVIRONMENTAL POLICY
GEO 470 Integrated Environmental Management
PD 301 Perspectives on Land Use and Development
SOC 446 Environmental Sociology
SSC 317 Environmental Politics
SSC 326 Great Lakes Ecology
SSC 360 Environmental Impact Statements
SSC 414 Grantwriting for Non-profits
SSC 419 Wilderness

ENVIRONMENTAL RESOURCES
GEO 350 Landform Field and Lab Techniques
GEO 352 Introduction to Soils
GEO 356 Forest Ecology
GEO 435 Conservation Biogeography
GEO 445 Restoration Ecology
SSC 360 Environmental Impact Statements
SSC 385 Energy, Environment and Society
SSC 493 Ecology of Unique Environments

ENVIRONMENTAL EDUCATION
ENG 211 Books of the Environment
GEO 444 Earth System Sciences
SSC 238 Science, Religion and Nature
SSC 414 Grantwriting for Non-profits
SSC 448 Animals, Zoos and Ecology
SSC 479 Environmental Education Practicum I (offered summer only)
SSC 496 MEP Environmental Education Practicum II (offered summer only)
SSC 493 The Ecology of Unique Environments

ENVIRONMENTAL INTERNSHIP
SSC 496 ENV Environmental Internship

SOCIAL SCIENCES INTERDISCIPLINARY—BA

Concentration in Health and Human Services

Acceptance Criteria
Minimum GPA of 2.0 overall.
Completion of prerequisite courses with a grade of C or better in each.

Advising Notes
Students interested in pursuing graduate studies directed toward state certification as K-6 teachers are strongly advised to consult with an Office of Interdisciplinary Degree Programs advisor as soon as they begin this major. Further information about teacher certification can be obtained from the Teacher Education Institute, Graduate School of Education, 375 Baldy Hall. Beyond the level of the prerequisite course(s), only one D or D+ grade may be applied to the completion of major requirements.

Prerequisite Courses
PSY 101 Introductory Psychology
SSC 103 Introduction to Health and Human Services

Required Courses
One introductory course
Two analytical skills courses (one statistics course and one methods course)
One biological sciences course
Three intermediate-level courses, one of which must be PHI 337 Social and Ethical Values in Medicine
Six courses from the chosen concentration area

Summary
Total required credit hours for the major (health and human services) 45-46

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—PSY 101, SSC 103
Spring—One introductory course, one statistics course

SECOND YEAR
Fall—One biological sciences course, one methods course
Spring—Two intermediate courses**

THIRD YEAR
Fall—One intermediate course**, one concentration area course
Spring—Two concentration area courses

FOURTH YEAR
Fall—Two concentration area courses (one of which is SSC 496 HS1 for Social Gerontology and Community Mental Health majors)
Spring—One concentration area course (SSC 496 HS2 for Social Gerontology and Community Mental Health majors)

***PHI 337 Social and Ethical Values in Medicine is a required intermediate course.*

Electives and Course Groupings

Introductory Courses
APY 105 Introduction to Anthropology
APY 106 Introduction to Cultural Anthropology
APY 107 Introduction to Physical Anthropology
APY 108 Introduction to Archaeology
COM 101 Principles of Communication
PHI 107 Ethics
SOC 101 Introduction to Sociology

Analytical Skills

STATISTICS COURSES
CEP 207 Introduction to Statistics and Computing
PSY 207 Psychological Statistics
SOC 294 Basic Statistics for Social Sciences
SSC 225 Statistics for Social Sciences
STA 119 Statistical Methods

METHODS COURSES
NUR 348 Applied Scientific Inquiry in Nursing
PSY 250 Scientific Inquiry in Psychology
SOC 293 Social Research Methods
SSC 213 Social Research Methods

Intermediate Courses
PHI 337 Social and Ethical Values in Medicine (required)
Two of the following:
- APY 248 Human Genetics
- APY 275 Introduction to Medical Anthropology
- APY 276 Introduction to Ethnomedicine
- COM 202 Intercultural Communication
- COM 217 Communication in Organizations
- COM 223 Principles and Methods of Interviewing
- COM 225 Interpersonal Communication
- HIS 215 Death in America
- JLS 131 The Family and the Law
- LAI 205 Introduction to Child Development and Learning or NUR 250 Human Growth and Development
- SOC 206 Social Problems
- SOC 211 Sociology of Diversity
- SSC 209 Case Management
- SSC 210 Skill Development in Human Service
- SSC 390 Human Services Administration
- WS 225 Violence in a Gendered World
- WS 238 Women, Work, and Family

Biological Sciences Courses
ANA 113 Human Anatomy
APY 345 Comparative Primate Anatomy and APY 346 Primate Dissections
BIO 129 Perspectives in Human Biology (strongly recommended for students pursuing the joint health and human services/School of Social Work degree; offered fall only)
BIO 130 Perspectives in Human Biology (prerequisite: BIO 129)
BIO 200 Evolutionary Biology
PGY 300 Human Physiology

Concentration Area Courses

SOCIAL GERONTOLOGY
Two of the following:
- PSY 427 Adult Development and Aging (force by special arrangement)
- SOC 304 Sociology of Aging
- SSC 363 The Aging Process
- SSC 407 Healthcare and the Elderly

Two of the following:
- CEP 401 Introduction to Counseling
- CEP 404 Introduction to the Rehabilitation of Substance Abuse and Addiction
- CEP 410 Introduction to Grief and Loss
- SOC 308 Sociology of the Life Course
- SOC 313 Sociology of the Family
- SOC 314 Sociology of Gender
- SOC 322 Introduction to Medical Sociology
- SSC 343 Violence and the Family
- SSC 365 The Family Process
- SSC 414 Grantwriting for Non-profits

(Continued on next page)

SSC 428 Legal Issues in Human Services
Practicum (a two-semester sequence; both courses are required):
SSC 496 HS1 Human Services Intern 1(first semester)
SSC 496 HS2 Human Services Intern 2 (second semester)

EARLY CHILDHOOD
CDS 301 Language Development in Children (offered fall only)
CDS 302 Language Disorders in Children (offered spring only; prerequisite: CDS 301)
CEP 410 Introduction to Grief and Loss
HIS 465 Childhood Through the Ages
LAI 416 Early Childhood Education, Theory, and Practice
LAI 490 Seminar and Practicum in Early Childhood Education, Theory, and Practice
LIN 355 Child Language Development
PSY 321 Psychology of Personality or PSY 322 Abnormal Psychology or PSY 336 Developmental Psychology
SOC 313 Sociology of the Family
SOC 314 Sociology of Gender
SOC 335 Sociology of Adolescence
SSC 305 Applied Child Development and Learning
SSC 320 Issues in Mental Retardation/Developmental Disabilities
SSC 343 Violence and the Family
SSC 365 The Family Process
SSC 414 Grantwriting for Non-profits
SSC 420 Child Mental Health
SSC 496 HS1 Human Services Intern 1

COMMUNITY MENTAL HEALTH
One of the following:
PSY 323 Community Psychology
SSC 218 Issues in Mental Health (if not taken to meet requirement below)
Three of the following:
CEP 401 Introduction to Counseling
CEP 404 Introduction to the Rehabilitation of Substance Abuse and Addiction
CEP 410 Introduction to Grief and Loss
CEP 453 Introduction to Rehabilitation
PSY 321 Psychology of Personality or PSY 322 Abnormal Psychology or PSY 331 Social Psychology
PSY 411 Self and Self-Esteem
SOC 314 Sociology of Gender
SOC 322 Introduction to Medical Sociology
SOC 335 Sociology of Adolescence
SSC 218 Issues in Mental Health (if not taken to meet requirement above)
SSC 320 Issues in Mental Retardation/Developmental Disabilities
SSC 343 Violence and the Family
SSC 407 Health-Care and the Elderly
SSC 414 Grantwriting for Non-preofits
SSC 420 Child Mental Health
SSC 428 Legal Issues in Human Services
Practicum (a two-semester sequence; both courses are required):
SSC 496 HS1 Human Services Intern 1 (first semester)
SSC 496 HS2 Human Services Intern 2 (second semester)

SOCIAL SCIENCES INTERDISCIPLINARY—BA/MSW

Combined Health and Human Services/Social Work

Acceptance Criteria

TO UNDERGRADUATE PORTION OF DEGREE
Minimum GPA of 2.0 overall.
Completion of prerequisite courses with a grade of C or better in each.

TO GRADUATE PORTION OF DEGREE
Minimum GPA of 3.0 overall.
Completed eleven of fifteen courses for undergraduate major (see below)
Completed all undergraduate general education requirements.
Completed 93 undergraduate credit hours.
Have significant employment, volunteer, or internship experience in a human service setting. Students are strongly advised to take SSC 496 HS1 Human Services Intern 1.

Advising Notes

Admission to the graduate portion of the degree is competitive. Meeting minimum requirements does not guarantee admission. Prerequisite courses listed immediately below are for admission to the undergraduate portion of the program only. Students need a human biology class for successful completion of the graduate program, so they are advised to take BIO 129 Human Biology to meet the biological sciences requirement.

Prerequisite Courses

PSY 101 Introductory Psychology
SSC 103 Introduction to Health and Human Services

Required Courses

One introductory course*
Two analytical skills courses (one statistics course and one methods course)*
One biological sciences course* (BIO 129 Perspectives in Human Biology is strongly recommended)
Three intermediate-level courses, one of which must be PHI 337 Social and Ethical Values in Medicine*
Two courses from the chosen concentration area

**See Social Sciences Interdisciplinary-BA/Concentration in Health and Human Services chart*

Summary

Total required credit hours for the undergraduate portion (health and human services) 33-34

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Refer to the Graduate School's policies and procedures manual for requirements for masters degree candidates.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—PSY 101, SSC 103
Spring—One introductory course, one statistics course

SECOND YEAR
Fall—One biological sciences course, one methods course
Spring—Two intermediate courses**

THIRD YEAR
Fall—One intermediate course**, one concentration area course
Spring—One concentration area course

***PHI 337 Social and Ethical Values in Medicine is a required intermediate course.*

In the fall semester of the third year, students should apply to the graduate portion of the degree program.

FOURTH AND FIFTH YEARS
Please contact the School of Social Work for information on specific requirements.

(Continued on next page)

Electives and Course Groupings

Concentration Area Courses

SOCIAL GERONTOLOGY

At least one must be from Part A:
Part A: PSY 427, SOC 304, SSC 363, SSC 407
Part B: CEP 404, CEP 410, SOC 308, SOC 313, SOC 314, SOC 322, SSC 343, SSC 365, SSC 414, SSC 428

EARLY CHILDHOOD

CDS 301, CDS 302, CEP 410, HIS 465, LAI 416/SSC 416, LAI 490, LIN 355; PSY 321 or PSY 322 or PSY 336; SOC 313, SOC 314, SOC 335, SSC 305, SSC 320, SSC 343, SSC 365, SSC 414, SSC 420

COMMUNITY MENTAL HEALTH

CEP 404, CEP 410, CEP 453, NUR 217; PSY 321 or PSY 322 or PSY 331; PSY 411, SOC 314, SOC 322, SOC 335, SSC 218, SSC 320, SSC 343, SSC 407, SSC 414, SSC 420, SSC 428

SOCIAL SCIENCES INTERDISCIPLINARY—BA

Concentration in International Studies

Acceptance Criteria

Minimum GPA of 2.0 overall.
Completion of prerequisite courses with a grade of C or better in each.
Students must successfully complete the first year of one of the languages listed below.

Advising Notes

The language requirement is an important component of the international studies concentration. Students must display proficiency in a language through the third year as taught at UB. A student's choice of foreign language affects his choice of a regional focus area for his advanced courses in this major. Beyond the level of the prerequisite course(s), only one D or D+ grade may be applied to the completion of major requirements.

If a student has already mastered a foreign language before entering college, at the level equivalent to that attained by a student at UB completing the third year course, the Romance Languages department or the Linguistics department can certify this. In this case, the student must take three additional courses at the core or advanced level. See the advisor for international studies in the Office of Interdisciplinary Degree Programs regarding these situations.

Substitutions of specific courses may be made with the approval of the Director of Interdisciplinary Degree Programs.

Prerequisite Courses

PSC 102 Introduction to International Politics
UGC 112 World Civilizations II
First year of language requirement

Required Courses

Remaining courses in language requirement
Two introductory courses
Three core courses
Four regional focus courses

Summary

Total required credit hours for the major (international studies)....33
(beyond completion of language requirement)

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall—PSC 102
Spring—UGC 112

SECOND YEAR

Fall—Two introductory courses, first-semester language
Spring—Two core courses, second-semester language

THIRD YEAR

Fall—One regional focus course, one core course, third-semester language
Spring—One regional focus course, fourth-semester language

FOURTH YEAR

Fall—One regional focus course, fifth-semester language
Spring—One regional focus course, sixth-semester language

Electives and Course Groupings

Language Requirement

Chinese: First year—CHI 101-CHI 102 or CHI 104 or CHI 105 (summer only); second year—CHI 201-CHI 202; third year—CHI 301-CHI 302*
French: First year—FR 101-FR 102 or FR 104; second year—FR 151-FR 152; third year—FR 211-FR 212*
Italian: First year—ITA 101-ITA 102; second year—ITA 151 and ITA 152; third year—ITA 321-ITA 322*
Japanese: First year—JPN 101-JPN 102; second year—JPN 201-JPN 202; third year—JPN 301-JPN 302*
Korean: First year—KOR 101-KOR 102; second year—KOR 201-KOR 202; third year—KOR 301-KOR 302*
Polish: First year—POL 101-POL 102; second year—POL 203-POL 204; third year—POL 305-POL 306*
Russian: First year—RUS 101-RUS 102; second year—RUS 223-RUS 224; third year—RUS 301-RUS 302*
Spanish: First year—SPA 101-SPA 102 or SPA 104 or SPA 171; second year—SPA 151-SPA 152 or SPA 172-SPA 241; third year—SPA 207-SPA 208*

**Students who wish to take other courses in place of the third-year courses listed here may do so with permission from the appropriate language directors in the Department of Romance Languages and Literatures or the Department of Linguistics.*

Introductory Courses

ECO 181 Introduction to Macroeconomics
ECO 182 Introduction to Microeconomics
GEO 103 Geography of Economic Systems
PSC 103 Politics Abroad

Core Courses

Two of the following:
- PSC 326 War and International Security
- PSC 328 Economics and Foreign Policy
- PSC 330 International Relations Problems
- PSC 333 International Relations Theory
- PSC 339 International Law
- PSC 341 Political Change
- PSC 373 International Futures
- PSC 418 The International System
- PSC 430 Human Rights

One of the following:
- GEO 330 Dynamics of International Business
- GEO 333 Bases of World Commerce
- GEO 334 International Environments and Commercial Problems

Regional Focus

Four of the following courses from the regional focus appropriate for the foreign language the student has chosen.

MODERN EUROPE (A EUROPEAN LANGUAGE)

ECO 304 Socialist Economies

(Continued on next page)

HIS 299 Holocaust and History
HIS 305 Modern Spain, Italy, and Portugal
HIS 313 Twentieth-Century Europe
HIS 315 German Culture and Society, 1789-1989
HIS 319 Europe between the World Wars, 1919-1939
HIS 325 Twentieth-Century Britain, 1901-1974
HIS 340 Topics in German History
HIS 371 Social History of Europe
HIS 400 Comparative Fascism
HIS 421 Topics in British History
HIS 475 The Great War and European Society
POL 324 Poland Today
POL 338 Poland in Central Europe
PSC 327 The Cold War and After
PSC 340 Politics in Western Europe
PSC 350 Politics of the U.S.S.R.

LATIN AMERICA (SPANISH)
APY 403 Comparing Cultures Worldwide
HIS 242 Latin Colonial History
HIS 322 Latin America: Culture and History
HIS 414 Cuban Revolution
LLS 303 Mainland Puerto Rican Experience
LLS 308 Black Presence in Latin America
PHI 389 Contemporary Latin American Thought
PSC 342 Politics of Developing Nations
PSC 372 Latin American Politics
PSC 438 Civil-Military Relations
SPA 327 Spanish Culture and Civilization
SPA 328 Spanish American Culture and Civilization

ASIA (AN ASIAN LANGUAGE)
APY 265 Peoples of Southeast Asia
APY 362 People and Culture of Japan
APY 366 Peoples of Asia
HIS 334 Islam/Muslim in Modern Southeast Asia
HIS 339 Pearl Harbor: Japan Goes to War
HIS 342 History of Modern South Asia
HIS 367 Japan to 1600
HIS 368 Modern Japan Since 1600
HIS 391 China and the World
HIS 485 Twentieth-Century China Politics
PSC 355 Asian Politics

AFRICA AND THE MIDDLE EAST (ARABIC, FRENCH, OR AN AFRICAN LANGUAGE)
AAS 280 Survey of African Studies
AAS 358 Africa Diaspora: Social and Cultural Evolution
APY 361 Anthropology of the Middle East
APY 403 Comparing Cultures Worldwide
HIS 213 Introduction to African History, 1800-Present
PSC 342 Politics of Developing Nations
PSC 370 African Politics
PSC 371 Middle Eastern Politics
PSC 438 Civil-Military Relations

SOCIAL SCIENCES INTERDISCIPLINARY—BA

Concentration in Legal Studies

Acceptance Criteria
Minimum GPA of 2.0 overall.
Completion of prerequisite courses with a grade of C or better in each.

Advising Note
Beyond the level of the prerequisite course(s), only one D or D+ grade may be applied to the completion of major requirements.

Prerequisite Courses
HIS 161 United States History I or HIS 162 United States History II
PSC 101 Introduction to American Politics

Required Courses
Two introductory courses
Two writing skills courses
One analytical skills course
Seven advanced courses, one of which must be PSC 303 Constitutional Law

Summary
Total required credit hours for the major (legal studies)..... 42-43

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—HIS 161 or HIS 162; PSC 101
Spring—One introductory course

SECOND YEAR
Fall—One introductory course, one writing skills course
Spring—One writing skills course, one analytical skills course

THIRD YEAR
Fall—Two advanced courses**
Spring—Two advanced courses**

FOURTH YEAR
Fall—Two advanced courses**
Spring—One advanced course**

***PSC 303 Constitutional Law is a required advanced course.*

Electives and Course Groupings

Introductory Courses
AAS 293 Race and the Law
APY 262 Anthropology and Justice
HIS 216 Crime and Punishment in America
JLS 130 American Jury Trial
JLS 131 Family and Law
JLS 201 Introduction to Law and Legal Process
MFC 332 Paralegal Principles and Procedures
PHI 162 Law, Morality and Authority
PHI 238 Philosophy of Law
PSC 215 Law and the Political Process (prerequisite for PSC 303; recommended)
PSC 225 Equality and Justice in the United States
WS 225 Violence in a Gendered World

Writing Skills Courses
Check with the Office of Interdisciplinary Degree Programs each semester for any changes and substitutions made to this list:
ENG 202 Advanced Writing: Technical
ENG 205 Writing Prose: Fiction I
ENG 206 Writing Prose: Fiction II
ENG 221 World Literature I
ENG 222 World Literature II
ENG 231 Major British Writers I
ENG 232 Major British Writers II
ENG 241 American Writers I
ENG 242 American Writers II
ENG 251 Literary Types: Short Fiction
ENG 253 Literary Types: The Novel
ENG 254 Literary Types: Science Fiction
ENG 268 Literary Authors: Irish Literature
ENG 270 Asian-American Writers
ENG 276 Literature and the Law

(Continued on next page)

ENG 291/COL 291 Legal and Literary Interpretation
ENG 319 Eighteenth-Century English Novel
ENG 325 Nineteenth-Century English Novel
ENG 332 Early American Literature
ENG 335 Nineteenth-Century American Novel
ENG 337 Modern American Literature
ENG 340 American Drama
ENG 342 Studies in American Literature
ENG 345 Studies in English and American Literature
ENG 350 Modern Poetry
ENG 353 European Fiction
ENG 358 Experimental Literature
ENG 359 The Bible as Literature
ENG 360 The Bible as Literature
ENG 367 Literature and Psychology
ENG 370 Multimedia Literature
ENG 383 Literature and Society
ENG 394 Journalism: Words and Pictures
ENG 397 Literary Journalism
ENG 398 Journalism
ENG 399 Journalism
ENG 437 Advanced Writing Workshop
ENG 439 Social Documentary
ENG 441 Contemporary Cinema
ENG 442 Contemporary Cinema
SSC 221 Writing in the Law

Analytical Skills Courses
CEP 207 Introduction to Statistics and Computing
PHI 115 Critical Thinking
PHI 215 Introduction to Deductive Logic
PSC 200 Empirical Political Science
PSC 408 Basic Statistics for Social Science
PSY 207 Psychological Statistics
PSY 250 Scientific Inquiry in Psychology
SOC 293 Social Research Methods
SOC 294 Basic Statistics for Social Sciences
SSC 213 Social Research Methods
SSC 225 Statistics for Social Sciences
STA 119 Statistical Methods

Advanced Courses
PSC 303 Constitutional Law** (required; prerequisite is PSC 215 or PSC 301)
Six of the following:
- HIS 303 U.S. Constitution: Its Origins and Early Development
- HIS 480 Topics in Early American Legal and Constitutional History
- PHI 338 Law and Morality
- PHI 340 Law and Responsibility
- PSC 301 Cases in Civil Liberties
- PSC 302 Protecting Civil Liberties
- PSC 304 Legislative Politics
- PSC 305 Judicial Politics
- PSC 308 Organizational Theory and Political Institutions
- PSC 339 International Law
- PSC 430 Human Rights
- PSC 470 Legal Political Theory
- SOC 307 Criminology
- SOC 317 Criminal Justice Systems
- SOC 319 Juvenile Justice
- SOC 337 Sociology of Punishment
- SOC 373 Sociology of Law
- SOC 405 Sociology of Deviance
- SSC 406 Law and the Environment
- SSC 428 Legal Issues in Human Services
- SSC 496 COM Community Internship (one semester only)
- WS 305 Gender and the Custodial State
- WS 353 Law Interprets Gender: The United States Experience

SOCIAL SCIENCES INTERDISCIPLINARY—BA

Concentration in Urban and Public Policy Studies

Acceptance Criteria
Minimum GPA of 2.0 overall.
Completion of prerequisite courses with a grade of C or better in each.

Advising Notes
Students who plan to pursue graduate study in urban planning and design are advised to take the following courses: PD 120 Introduction to Urban Studies, PD 212 Urban and Environmental Planning, PD 301 Perspectives on Land Use and Development, PD 312 Design of Cities. Beyond the level of the prerequisite course(s), only one D or D+ grade may be applied to the completion of major requirements.

Prerequisite Courses
PSC 101 Introduction to American Politics
SOC 101 Introduction to Sociology

Required Courses
Three introductory courses
Two core courses*
Two analytical skills courses (one statistics course and one methods course)
Five advanced courses, including no more than three courses from any one department
*Students should complete the core course requirement by the end of their junior year.

Summary
Total required credit hours for the major (urban and public policy)..... 45-46

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—PSC 101, SOC 101
Spring—One introductory course

SECOND YEAR
Fall—One introductory course, one analytical skills course (statistics)
Spring—One introductory course, one analytical skills course (methods)

THIRD YEAR
Fall—One core course, one advanced course
Spring—One core course, one advanced course

FOURTH YEAR
Fall—Two advanced courses
Spring—One advanced course

Electives and Course Groupings

Introductory Courses
ECO 181 Introduction to Macroeconomics
ECO 182 Introduction to Microeconomics
ECO 209 Introduction to Urban Economics
GEO 103 Geography of Economic Systems
PD 120 Introduction to Urban Studies
SOC 206 Social Problems

Core Courses
GEO 366 Urban Geography (if not taken to meet advanced requirement)
PD 212 Urban and Environmental Planning
PSC 310 Public Administration
PSC 312 Urban Politics
PSC 314 Public Policy Making
WS 414 Women and Public Policy

(Continued on next page)

Analytical Skills

STATISTICS

CEP 207 Introduction to Statistics and Computing
PSY 207 Psychological Statistics
SOC 294 Basic Statistics for Social Sciences
SSC 225 Statistics for Social Sciences
STA 119 Statistical Methods

METHODS

PSY 250 Scientific Inquiry in Psychology
SOC 293 Social Research Methods
SSC 213 Social Research Methods

Advanced Courses

Note: Students may take no more than three courses from the same department.
APY 427 Comparative Urbanism
ECO 303 Economics of Poverty
GEO 366 Urban Geography (if not taken to meet core requirement)
GEO 367 Urban Social Geography
GEO 418 Population Geography or SOC 329 Population Problems
GEO 419 Transportation
PD 301 Perspectives on Land Use and Development
PD 312 Design of Cities
PSC 308 Organizational Theory in Political Institutions
PSC 315 American Political Economy
SOC 315 Sociology of City Life
SOC 321 Race and Ethnic Relations
SOC 328 Social Stratification
SOC 348 Urban Sociology
SOC 381 Contemporary Protest Movements
SSC 317 Environmental Politics
SSC 414 Grantwriting for Non-profits
SSC 496 COM Community Internship
WS 353 Law Interprets Gender: The United States Experience

SOCIAL SCIENCES INTERDISCIPLINARY—MINOR

Environmental Studies

Acceptance Criteria

Minimum GPA of 2.0 overall.
Acceptance to a major.
Completion of prerequisite course with a grade of C or better.

Advising Notes

Only one course applied to any other major or minor may be applied to meet the course requirements of this minor. All courses past the level of the prerequisite course must be completed with a C- or better.

Prerequisite Courses

SSC 118 Introduction to Environmental Studies

Required Courses

One course from social science core
Two courses from natural sciences core
One course from each of the environmental tracks
One additional upper level course

Summary

Total required credit hours for the minor (environmental studies) 26

Electives and Course Groupings

Social Sciences Core

APY 120 Environmental Anthropology
PHI 334 Environmental Ethics
SSC 213 Social Research Methods OR SOC 293 Social Research Methods
SSC 406 Law and the Environment
SSC 442 Environmental Movements

Natural Sciences Core

BIO 200 Evolutionary Biology (offered fall only)
SSC 315 Field Ecology

Environmenal Tracks

ENVIRONMENTAL POLICY

GEO 470 Integrated Enrivonmental Management
PD 301 Perspectives on Land Use and Development
SOC 446 Environmental Sociology
SSC 317 Environmental Politics
SSC 326 Great Lakes Ecology
SSC 360 Environmental Impact Statements
SSC 414 Grantwriting for Non-Profits
SSC 419 Wilderness

ENVIRONMENTAL RESOURCES

GEO 350 Landform Field and Lab Techniques
GEO 352 Introduction to Soils
GEO 356 Forest Ecology
GEO 435 Conservation Biogeography
GEO 445 Restoration Ecology
SSC 360 Environmental Impact Statements
SSC 385 Energy, Environment and Society
SSC 493 Ecology of Unique Environments

ENVIRONMENTAL EDUCATION

ENG 211 Books of the Environment
GEO 444 Earth System Science
SSC 238 Science, Religion and Nature
SSC 414 Grantwriting for Non-profits
SSC 448 Animals, Zoos and Ecology
SSC 479 Environmental Education Practicum I (offered summer only)
SSC 480 Environmental Education Practicum II (offered summer only)
SSC 493 The Ecology of Unique Environments

Additional Upper Level Course

SSC 496 ENV Environmental Internship OR Any additional course from any environmental track

Sociology

Department of Sociology

College of Arts and Sciences

430 Park Hall
North Campus
Buffalo, NY 14260-4140
Phone: (716) 645-2417
Fax: (716) 645-3934
Web site: sociology.buffalo.edu

Robert Granfield
Chair

Sampson Lee Blair
Director of Undergraduate Studies

For a listing of Sociology faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Sociology examines the causes, characteristics, changes, and consequences of human behavior in groups, and provides an understanding of the structure and dynamics of social systems and issues. It emphasizes the study of individuals, social groups, and social systems as they relate to each other and to important societal issues, such as community, education, family, gender, social class, culture, law, health, environment, and war. Students are introduced to the history of social thought and to the applied and theoretical methods used to study these diverse topics. Training in sociology prepares students for a wide variety of professional careers and for active, enlightened participation in local, national, and world affairs.

Degrees Offered

- **Undergraduate:** BA, Minor
- **Graduate:** MA, PhD

Degree Options

In addition to the general major in sociology, the department offers four focus areas: family and the life course, law and society/Criminology, Urban/Community, Race and Ethnicity. Each focus area has a set of associated courses.

Advisement

Students should contact the Sociology department (716-645-2417) for information on advising.

Transfer Policy

Students may transfer sociology courses taken elsewhere; however, the department accepts no more than 15 credit hours of appropriate sociology courses toward the major requirements. Course descriptions may need to be provided to the department.

SOCIOLOGY—MINOR

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.0 in the prerequisite courses.

Advising Notes
Four courses within the minor must be 300- or 400-level courses.

Prerequisite Courses
SOC 101 Introduction to Sociology
Two other SOC courses

Required Courses
Three additional sociology courses (9 credit hours)

Summary
Total required credit hours for the minor 18

SOCIOLOGY—BA

Acceptance Criteria
Minimum GPA of 2.0 overall.
Minimum GPA of 2.0 in SOC 101 and in two other sociology courses.

Advising Notes
Minimum grade of C required in SOC 293, SOC 294, and SOC 349 or SOC 350

Double majors must meet all the departmental requirements noted above.

Joint majors are possible only with other majors that offer the BA degree. Students must complete SOC 101, SOC 293, SOC 294, and SOC 349 or SOC 350 with a minimum grade of C in each course, and four additional sociology courses.

Prerequisite Courses
SOC 101 Introduction to Sociology
Two other SOC courses

Required Courses
SOC 293 Social Research Methods (may substitute PSY 250 or SSC 213 with the addition of 3 credit hours of sociology electives)
SOC 294 Basic Statistics for Social Sciences (may substitute CEP 207, ECO 480, PSC 408, PSY 207, STA 119, or SSC 225 with the addition of 3 credit hours of sociology electives)
SOC 349 History and Development of Sociological Theory or SOC 350 Contemporary Sociological Theory
Eight SOC electives at any level

Summary
Total required credit hours for the major.....36

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—SOC 101
Spring—One 200-level SOC elective

SECOND YEAR
Fall—SOC 293 (may substitute PSY 250 or SSC 213 with the addition of 3 credit hours of sociology electives)
Spring—SOC 294 (may substitute CEP 207, ECO 480, PSC 408, PSY 207, STA 119, or SSC 225 with the addition of 3 credit hours of sociology electives)

THIRD YEAR
Fall—SOC 349 or SOC 350; one 300/400-level SOC elective
Spring—Two 300/400-level SOC electives

FOURTH YEAR
Fall—Two 300/400-level SOC electives
Spring—Two 300/400-level SOC electives

Spanish

Department of Romance Languages and Literatures

College of Arts and Sciences

910 Clemens Hall
North Campus
Buffalo, NY 14260-4620
Phone: (716) 645-2191
Fax: (716) 645-5981
Web site: rll.buffalo.edu

Maureen Jameson
Chair

Colleen Culleton
Director of Undergraduate Studies
(716) 645-2191, ext. 1181
culleton@buffalo.edu

Bárbara Ávila-Shah
Language Program Director
(716) 645-6000, ext. 1193
bia@buffalo.edu

For a listing of Spanish faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Spanish, with approximately 320 million speakers, is the fourth most spoken language on the planet. It is the official language, not only of Spain, but also of Mexico, Central America, the Caribbean islands of Cuba, Puerto Rico, and the Dominican Republic, most of the countries of South America, and Equatorial Guinea. In the United States, Spanish is spoken by approximately 10 percent of the total population of the United States (nearly 25,000,000 people), making the U.S. the fifth largest Spanish-speaking country in the world. Spanish is a major international language of banking, commerce, cultural production, diplomacy, and science.

The undergraduate program in Spanish is intended to introduce students to a wide range of disciplines within the area of Hispanic language and civilization. The implicit goal of the program is to build students' proficiency in the Spanish language. Students may focus on literature, linguistics, language teaching, or other related areas. To this end, the program offers a broad selection of courses, as well as opportunity for independent study, directed work in allied fields, and a summer program in Salamanca, Spain.

Degrees Offered

- **Undergraduate:** BA, Minor
- **Graduate:** MA, PhD

Degree Options

The major program leads to a BA in Spanish. There is also a Spanish minor program.

Students wishing to satisfy the requirements for teacher certification should plan their programs with particular care in order to accommodate the required semester of the professional sequence during their senior year. For certification requirements, students should contact the Teacher Education Institute in the Graduate School of Education.

Joint Major. For students who have another major field, a joint major with Spanish (also leading to a BA) is possible. Graduation requirements for the joint major are three Spanish courses at the 200-level with a minimum GPA of 2.5 and seven courses at the 300/400 level with a minimum GPA of 2.0.

Advisement

Please contact Dr. Justin Read at 645-2191, ext. 1182, or jread2@buffalo.edu, for advising and any questions regarding the Spanish program or upper-level Spanish courses. Questions regarding 100-level courses (SPA 101, SPA 102, SPA 104, SPA 151, SPA 152, SPA 154) should be directed to Dr. Bárbara Ávila-Shah at 645-2191, ext. 1193, or bia@buffalo.edu.

Acceptance Information

In order to be accepted into the Spanish major, a minimum GPA of 2.0 overall and a minimum GPA of 2.5 in Spanish courses completed prior to applying for acceptance, is required.

In order to be accepted into the Spanish minor, a minimum GPA of 2.0 overall and a minimum GPA of 2.5 in prerequisite courses or their equivalents (SPA 101-SPA 102 sequence or SPA 104, and SPA 151-SPA 152), is required.

Academic Requirements

Graduation requirements for the Spanish major include completion of three 200-level courses (9 credit hours) with a minimum GPA of 2.5, and ten 300/400 level courses (30 credit hours) with a minimum GPA of 2.0.

Requirements to graduate with the Spanish minor include completion of two 200-level courses (6 credit hours) with a minimum GPA of 2.5, and four 300/400-level courses with a minimum GPA of 2.0.

SPANISH—BA

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in Spanish courses completed prior to applying for acceptance.

Advising Notes

Minimum GPAs of 2.5 in the 200-level courses, and 2.0 in the 300/400-level courses, are necessary for degree conferral.

Prerequisite Courses

SPA 101-SPA 102 Elementary Spanish 1st-2nd Semester* or SPA 104 Transitional Elementary Spanish* or the equivalent
SPA 151-SPA 152 Intermediate Spanish 1st-2nd Semester* or the equivalent

Required Courses

Three 200-level courses
Ten 300/400-level courses

Summary

Total required credit hours for the major.....39

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR
Fall—Elementary or intermediate Spanish or a 200-level course*
Spring—Elementary or intermediate Spanish or a 200-level course*

SECOND YEAR
Fall—Elementary or intermediate Spanish or two 200-level courses*
Spring—Elementary or intermediate Spanish*; for those having completed two 200-level SPA courses: one 200-level SPA course and two 300-level SPA courses; for those having completed one 200-level SPA course: two 200-level SPA courses and two 300-level SPA courses

THIRD YEAR
Fall—Two 300/400-level SPA courses
Spring—Two 300/400-level SPA courses

FOURTH YEAR
Fall—Two 300/400-level SPA courses
Spring—Two 300/400-level SPA courses

**Appropriate level is based on placement and/or previous experience, unless exempted. For clarification, contact Dr. Bárbara Ávila-Shah at (716) 645-2191, ext. 1193, or bia@buffalo.edu.*

SPANISH—MINOR

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in prerequisite courses or their equivalents: SPA 101-SPA 102 sequence or SPA 104, and SPA 151-SPA 152.

Advising Notes

Minimum GPA of 2.5 in the 200-level courses, and 2.0 in the 300/400-level courses, are necessary for degree conferral.

Prerequisite Courses

SPA 101-SPA 102 Elementary Spanish 1st-2nd Semester* or SPA 104 Transitional Elementary Spanish*
SPA 151-SPA 152 Intermediate Spanish 1st-2nd Semester*

Required Courses

Two 200-level courses
Four 300/400-level courses
Appropriate level is based on placement and/or previous experience, unless exempted. For clarification, contact Dr. Bàrbara Àvila-Shah at (716) 645-2191, ext. 1193, or bia@buffalo.edu.

Summary

Total required credit hours for the minor 18

Special Major

Special Major Program

College of Arts and Sciences

275 Park Hall
North Campus
Buffalo, NY 14261
Phone: (716) 645-6883
Fax: (716) 645-2893
Web site: wings.buffalo.edu/cas/students/special_major

John Riszko
Senior Academic Advisor and Chair, Special Major Committee

About the Program

The Special Major Program was developed to provide capable students with an opportunity to create their own academic major program. Students initiate and develop their own programs under the guidance of two faculty members and an advisor, and then obtain permission from the Special Major Committee.

Although the special major is individualized and created by the student, there are several concentrations or themes that have emerged. Whereas these interdisciplinary themes do not yet correspond to any particular department, there are, nonetheless, impressive curricular and faculty resources to support them. Such concentrations include religious studies, nutrition, animal science, criminology, comparative literature, and arts management.

Degrees Offered

- **Undergraduate:** BA, BS

Degree Options

Both BA and BS degrees in special studies may be awarded. BFA degree Special Major concentrations may not be proposed.

The proposed academic program must be unique; that is, the program may not duplicate the major content in any degree-granting academic department, nor may it be designed to avoid the requirements of existing departmental majors. Special majors may be developed with another major as a double major or a double degree.

Special majors in areas that require licensure or professional certification may not be proposed. Additionally, special majors may not suggest that the student is acquiring professional competence as a therapist; for example, major concentrations titled Art Therapy, Psychotherapy, and the like are prohibited.

The coursework must reflect both breadth and depth in the student's topical area. Faculty mentors chosen to assist the student in the development of the special major must have expertise in the chosen area and must be appointed at least at the assistant professor level in a tenure-track appointment.

The Special Major does not guarantee access into major courses in departments that limit their enrollments to majors only. It is the student's responsibility to negotiate with the respective departments for those courses which are integral to the proposed major concentration.

Advisement

Students interested in the Special Major Program should first consult with their academic advisors and the special major advisor, who will familiarize them with the steps necessary to complete the program. These steps include drafting a statement of intent and purpose, selecting mentors, developing a curriculum with mentors, preparing the special major proposal, submitting the proposal to the Special Major Committee, redrafting the proposal if necessary, completing university requirements, and completing the Degree Audit Card. If students have difficulty composing the Statement of Intent, they should ask for help and may want to consult the Writing Place within the Thomas J. Edwards Learning Center (209A Baldy Hall, 716-645-2394, http://tlc.buffalo.edu/lcwrite.htm).

Acceptance Information

Students interested in pursuing the special major should define their own major area, submit a statement of intent, find faculty sponsors and consult with them on proposal development, prepare a proposal that structures the major curriculum, and gain approval of the proposal from the Special Major Committee.

Students are urged to submit proposals in their junior year, and no later than a full semester before graduation. Submitting proposals in the last semester of the student's matriculation or submitting proposals after the completion of all coursework violates the special major's essential deliberative and consultative nature. The committee is not obliged to consider proposals which are submitted ex post facto. Any proposal submitted in the student's last semester must be accompanied by a petition explaining the late submission.

A special major student is one who has had the proposal approved by the Special Majors Committee. The committee evaluates proposals that have been submitted on the student's behalf by the chair of the committee, who is a senior academic adviser in the College of Arts and Sciences Student Advisement Services office in 275 Park Hall. Students interested in this option may consult the special major web site at http://wings.buffalo.edu/cas/students/special_majors, where they may download the application and advisement manual.

Speech and Hearing Science

Department of Communicative Disorders and Sciences

College of Arts and Sciences

122 Cary Hall
South Campus
Buffalo, NY 14214-3023
Phone: (716) 829-2797
Fax: (716) 829-3979
Web site: cdswebserver.med.buffalo.edu/drupal
E-mail: cdsdept@buffalo.edu

Elaine Stathopoulos
Chair

Jan Charles-Luce
Director of Undergraduate Studies

For a listing of Speech and Hearing faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The undergraduate program in the Department of Communicative Disorders and Sciences (CDS) is a pre-professional program leading to a bachelor of arts degree. The pre-professional major in speech and hearing science provides the common core of knowledge concerning the normal processes of speech, language, and hearing that is required for a background for study of disorders of communication. No certification is available based on the undergraduate curriculum. The graduate degree is the entry level into the professions of speech-language pathology and audiology.

Students who successfully complete the undergraduate major in speech and hearing science and who wish to become professionally qualified as speech-language pathologists or audiologists must apply to a graduate program offering a master's degree for speech-language pathology or a doctorate of audiology for audiology.

Degrees Offered

- **Undergraduate:** BA, Minor
- **Graduate:** MA (Track in Speech-Language Pathology), AuD, PhD

Acceptance Information

The application for the speech and hearing science undergraduate major can be found on the CDS Department's web site or in 122 Cary Hall. Submit your completed application along with a copy of your current DARS to the department's main office in 122 Cary Hall. Applications are reviewed on a rolling basis.

Transfer Policy

Courses completed at other institutions may be equivalent to CDS courses at the University at Buffalo. To have them evaluated, complete the course waiver or pre-approval petition form found on the CDS Department's web site and submit it to the department main office in 122 Cary Hall.

Of the 35 credits of CDS courses required for the Speech and Hearing Science major, a minimum of 20 credits of CDS courses must be completed at UB.

SPEECH AND HEARING SCIENCE—BA

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum GPA of 2.5 in the prerequisite courses.

Advising Notes

Upon completion, the student should complete the Application for Undergraduate Major found in the department office or on the department's Web site and submit that along with a copy of the DARS to the department office.

Applications to the major are reviewed on a rolling basis. Once accepted, each student is assigned a departmental faculty advisor who assists the student in program planning. It is the student's responsibility to make an appointment with the faculty advisor to request assistance of any kind. A message folder is established for each major in the department. Students should check that folder regularly, as it is used to contact them and to circulate information.

To graduate, the student must have earned an overall GPA of 2.5 in CDS courses. CDS courses with a grade of less then C- will not be acceptable for the departmental average requirement and must be retaken for a grade of C- or better. Students may not elect S/U grading in CDS courses.

If prospective majors have taken courses at another school that they believe are equivalent to the required courses of the department, transfer evaluation and waiver request forms may be obtained from the department office.

Prerequisite Courses

CDS 151 Introduction to Speech-Language Pathology and Audiology
CDS 286 Phonetics
CDS 288 Anatomy and Physiology of the Speech Mechanism

Required Courses

BIO 129 Perspectives in Human Biology
CDS 289 General and Speech Acoustics
CDS 290 Audiology: Diagnosis and Management
CDS 301 Language Development in Children
CDS 302 Language Disorders in Children
CDS 392 Phonological Disorders: Diagnosis and Management
CDS 480 Clinical Observation and Participation
CDS 482 Diagnostics in Communicative Disorders
CDS 483 Diagnostics in Communicative Disorders Lab
CDS 484 Aural Rehabilitation
CDS 487 Psychoacoustic Science
CSE 101 Computers: A General Introduction
MTH 115 Survey of Algebra and Trigonometry or ULC 148 Intermediate Algebra and Trigonometry
PSY 101 Introductory Psychology
One linguistics course (choose from LIN 205, LIN 207, or any 300/400-level LIN course except LIN 355 or LIN 496) for a minimum of 3 credits
One physical science course (choose any course from CHE, GLY, or PHY) for a minimum of 3 credits
One statistics course (choose from CEP 207, PSY 207, SOC 294, SSC 225, STA 111, or STA 119) for a minimum of 3 credits
Two human behavior courses (choose from AAS 333, APY 311, LAI 205/SSC 208, NUR 250, PSY 321, PSY 322, PSY 331, PSY 336, SOC 304, SOC 308, SOC 313, SOC 314, SSC 363)

Summary

Total required credit hours for the major.....62

Of the 62 required credit hours, 35 are required credit hours of CDS courses; plus 27 required credit hours from courses outside CDS.

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

FIRST YEAR

Fall—BIO 129, CDS 151, PSY 101
Spring—CSE 101, one linguistics course (LIN 205, LIN 207, or any 300/400-level LIN course except LIN 355 or LIN 496)

SECOND YEAR

Fall—CDS 286, CDS 288, MTH 115
Spring—CDS 289, CDS 290, one physical science course (any course from CHE, GLY, or PHY), one statistics course (CEP 207, PSY 207, SOC 294, SSC 225, STA 111, or STA 119)

(Continued on next page)

THIRD YEAR
Fall—CDS 301, one human behavior course
Spring—CDS 302, CDS 392, one human behavior course

FOURTH YEAR
Fall—CDS 482, CDS 483, CDS 484*, CDS 487
Fall or Spring—CDS 480

**May instead be taken in the spring of the fourth year.*

SPEECH AND HEARING SCIENCE—MINOR

About the Minor

The field of communicative disorders and sciences relates to many fields and subspecialties. For this reason, the department offers a minor for students who are majors or prospective majors in other departments. Students may choose courses to meet their specific interests.

Required Courses

CDS 151 Introduction to Speech-Language Pathology and Audiology
Five additional CDS courses, which may include independent study

Summary

Total required credit hours for the minor 18

Theatre

Department of Theatre & Dance

College of Arts and Sciences

285 Alumni Arena
North Campus
Buffalo, NY 14260-5030
Phone: (716) 645-6898
Fax: (716) 645-6992
Web site: www.cas.buffalo.edu/depts/theatredance

Robert Knopf
Chair

Catherine Norgren
Associate Chair

Lynne Koscielniak
Director, Theatrical Design/Technology

M. A. Casarella
Assistant to the Chair; Director, Undergraduate Advising

For a listing of Theatre faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Department of Theatre and Dance offers BA and BFA degrees and a minor in theatre. Prospective majors or minors should meet with the undergraduate advisor as early as possible. For students with prior training, course requirements may be adjusted. If lower-level courses are waived, additional courses may be assigned. This policy applies to all majors and minors.

Degrees Offered

- **Undergraduate:** BA, BFA, Minor
- **Concentrations:** Performance (BFA), Design/Technology (BFA)

Advisement

First-semester students are required to meet with the Director of Undergraduate Advising.

THEATRE—BA

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum grade of C+ in all required courses.
Minimum GPA of 2.5 in the prerequisite courses.

Prerequisite Courses

TH 101 Introduction to Theatre
TH 106 Introduction to Technical Theatre
TH 108 Basic Acting I
TH 135 or TH 136 Practicum
TH 203 Visual Imagination

Required Courses

TH 301 Theatre History and Literature I
TH 302 Theatre History and Literature II
TH electives: A minimum of 9 credit hours from one area, such as literature, acting, design/technology, or playwriting
One design course (choose from TH 303 Scene Design, TH 306 Costume Design, or TH 332 Lighting Design I)
Two 200/300-level TH practicums
Two dramatic literature courses
Proficiency in a foreign language through the second semester of the second year or its equivalent is required, to be demonstrated through classroom courses or through Alternative Methods for Earning University Credit. S/U grading may not be selected for courses taken to fulfill this requirement.

Summary

Total required credit hours for the major 51

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

Placement in dance and performance courses is based on auditions. Performance is an option each semester. Please note that schedule does not include performance credits.

FIRST YEAR
Fall—TH 101, TH 108
Spring—One 200/300-level TH practicum
Fall or Spring—TH 106 with TH 135 or TH 136; TH 203

SECOND YEAR
Fall—TH 301, TH electives, one 200/300-level TH practicum
Spring—TH 302, TH electives
Fall or Spring—One design course (TH 303 in the fall or TH 306 or TH 332 in the spring)

THIRD YEAR
Fall—One dramatic literature course*, TH electives
Spring—One dramatic literature course*, TH electives

FOURTH YEAR
Fall—TH electives
Spring—TH electives
**One or both of these may be taken in the fourth year.*

Electives and Course Groupings

TH 315 Modern Theatre I
TH 316 Modern Theatre II
TH 320 American Drama
TH 325 Performance and the Critic II
TH 370 Age of Shakespeare
TH 410 Theatre of the Oppressed
TH 460 Asian Performing Arts
TH 464 Black Theatre
TH 465 Iberoamerican Theatre
TH 466 Women in Theatre
TH 467 Life of the Drama

(Continued on next page)

TH 468 Sources of Modern Theatre
TH 478 Arthur Miller
TH 480 Shakespeare on Stage
TH 481 Irish Dramatists
TH 482 - TH 489 Major Figures

THEATRE (PERFORMANCE)—BFA

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum grade of C+ in all required courses.
Minimum GPA of 2.5 in prerequisite courses.
Audition.
Letter of intent.
Interview with program director at the end of the first year.

Prerequisite Courses

TH 101 Introduction to Theatre
TH 106 Introduction to Technical Theatre
TH 108 Basic Acting I
TH 109 Basic Acting II
TH 135 or TH 136 Practicum
TH 203 Visual Imagination

Required Courses

MTR 220 Beginning Musical Theatre Dance
TH 208 Method Acting I
TH 209 Method Acting II
TH 227 Voice Training I
TH 228 Voice Training II
TH 301 Theatre History and Literature I
TH 302 Theatre History and Literature II
TH 308 Poetic Text
TH 309 Mime/Movement for Actors
TH 408 Audition Techniques
TH 409 Acting in Shakespeare
TH 468 Sources of Modern Theatre
THD 201 Modern Dance 1
THD 415 Mind-Body Integration
One design course (choose from TH 303 Scene Design I, TH 306 Costume Design I, or TH 332 Lighting Design I)
Two TH or THD electives
Four 200/300-level TH practicums
Two dramatic literature courses
Two studio-performance courses

Summary

Total required credit hours for the major..... 78-82

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

Placement in dance and performance courses is based on auditions. Performance is an option each semester.

FIRST YEAR

Fall—TH 101, TH 108
Spring—TH 109, THD 201, one 200/300-level TH practicum
Fall or Spring—TH 106 and TH 135 or TH 136; TH 203

SECOND YEAR

Fall—MTR 220, TH 208, TH 227, TH 301, one 200/300-level TH practicum, one studio-performance course
Spring—TH 209, TH 228, TH 302, one 200/300-level TH practicum
Fall or Spring—One design course (TH 303 in the fall or TH 306 or TH 332 in the spring)

THIRD YEAR

Fall—TH 308, TH 200/TH 300 practicum, one dramatic literature course*; one TH or THD elective, one studio-performance course
Spring—TH 309, TH 409, one dramatic literature course*, one TH or THD elective; one studio-performance course (optional)

FOURTH YEAR

Fall—TH 408, TH 468, THD415; one studio-performance course (optional)
Spring—one studio-performance course (optional)

**One or both of these may be taken in the fourth year.*

Electives and Course Groupings

DRAMATIC LITERATURE COURSES

TH 315 Modern Theatre I
TH 316 Modern Theatre II
TH 320 American Drama
TH 325 Performance and the Critic II
TH 370 Age of Shakespeare
TH 410 Theatre of the Oppressed
TH 460 Asian Performing Arts
TH 464 Black Theatre
TH 465 Iberoamerican Theatre
TH 466 Women in Theatre
TH 467 Life of the Drama
TH 468 Sources of Modern Theatre
TH 478 Arthur Miller
TH 480 Shakespeare on Stage
TH 481 Irish Dramatists
TH 482 - TH 489 Major Figures

ELECTIVES

TH 401 Directing 1
TH 402 Directing 2
TH 485 Playwriting Workshop
TH 486 Playwriting Seminar
THD 202 Modern Dance 2
THD 213 Ballet 1
THD 214 Ballet 2
THD 263 Jazz Dance 1
THD 264 Jazz Dance 2
THD 400 Creative Movement

THEATRE (DESIGN/TECHNOLOGY)—BFA

Acceptance Criteria

Minimum GPA of 2.0 overall.
Minimum grade of C+ in all required courses.
Minimum GPA of 2.5 in prerequisite courses.
Portfolio review.
Letter of intent.
Interview with program director at the end of the first year.

Prerequisite Courses

TH 101 Introduction to Theatre
TH 106 Introduction to Technical Theatre
TH 108 Basic Acting I
TH 135 or TH 136 Practicum
TH 203 Visual Imagination

Required Courses

TH 205 Drafting
TH 230 Theatre Crafts
TH 301 Theatre History and Literature I
TH 302 Theatre History and Literature II
TH 303 Scene Design
TH 306 Costume Design
TH 331 Problems in Tech Theatre
TH 332 Lighting Design
TH 401 Directing 1 or TH 485 Playwriting Workshop or
TH 402 Directing 2 or TH 486 Playwriting Seminar
TH 468 Sources of Modern Theatre
THD 415 Mind-Body Integration
THD 430 Dance History or MUS 115 Understanding Music
One art history course
Two upper-level design courses (choose from TH 403 Scene Design 2, TH 406 Costume Design 2, and TH 433 Lighting Design 2)
Four 200/300-level TH practicums
Two dramatic literature courses
Two studio-design/tech courses

Summary

Total required credit hours for the major..... 75-78

See Baccalaureate Degree Requirements for general education and remaining university requirements.

Recommended Sequence of Program Requirements

Placement in dance and performance courses is based on auditions. Performance is an option each semester.

FIRST YEAR

Fall—TH 101, TH 108
Spring—TH 306 or TH 332; one 200/300-level TH practicum
Fall or Spring—TH 106 and TH 135 or TH 136; TH 203

SECOND YEAR

Fall—TH 205, TH 301, TH 303, one 200/300-level TH practicum, one studio-design/tech course
Spring—TH 302, TH 331, one 200/300-level TH practicum, one studio-design/tech course

THIRD YEAR

Fall—TH 401 or TH 485; THD 430 or MUS 115; TH 200/300 practicum, one dramatic literature course*, one upper-level design course; one studio-design/tech course (optional)
Spring—TH 402 or TH 486; one upper-level design course, one dramatic literature course*; one studio-design/tech course (optional)

FOURTH YEAR

Fall—TH 468, THD 415, one art history course; one studio-performance course (optional)
Spring—One studio-design/tech course (optional)

**One or both of these may be taken in the fourth year.*

Electives and Course Groupings

DRAMATIC LITERATURE COURSES

TH 315 Modern Theatre I
TH 316 Modern Theatre II
TH 320 American Drama
TH 325 Performance and the Critic II
TH 370 Age of Shakespeare
TH 410 Theatre of the Oppressed
TH 460 Asian Performing Arts
TH 464 Black Theatre
TH 465 Iberoamerican Theatre
TH 466 Women in Theatre
TH 467 Life of the Drama
TH 468 Sources of Modern Theatre
TH 478 Arthur Miller
TH 480 Shakespeare on Stage
TH 481 Irish Dramatists
TH 482 - TH 489 Major Figures

STUDIO DESIGN TECH COURSES

TH 341 Theatre Studio 1
TH 342 Theatre Studio 2
TH 343 Theatre Studio 3
TH 344 Theatre Studio 4
TH 345 Costume Construction Studio
TH 346 Costume Design Studio
TH 347 Scene Design Studio
TH 348 Lighting Design Studio
TH 349 Technical Studio
TH 350 Properties Studio

THEATRE—MINOR

Required Courses

TH 101 Introduction to Theatre
TH 106 Introduction to Technical Theatre and TH 135 or TH 136 Practicum
TH 108 Basic Acting I
One 300/400-level theatre history and/or literature course
Minimum of 9 further credit hours at the 200/300 level, none of which may be studios or independent studies

Summary

Total required credit hours for the minor 22

Undergraduate Education*

Undergraduate Education

Vice Provost of Undergraduate Education

548 Capen Hall
North Campus
Buffalo, NY 14260
Phone: (716) 645-6003
Fax: (716) 645-2549
Web site: vpue.buffalo.edu
E-mail: vpue@buffalo.edu

Michael E. Ryan
Vice Provost and Dean of Undergraduate Education

** Not a baccalaureate degree program.*

About the Program

The Office of the Vice Provost of Undergraduate Education builds on the UB tradition of quality undergraduate education by providing students with a distinctive educational experience that will promote intellectual exploration, foster a global perspective and an informed worldview, and develop cultural understanding. Undergraduate Education offers courses as part of the Undergraduate Academies and Discovery Seminar Programs, which connect students with our faculty and with each other, engaging them in the exciting world of research at the University at Buffalo.

Advisement

Students interested in registering for the Undergraduate Academies or Discovery Seminars should visit the Web sites (http://academy.buffalo.edu/ and http://discovery-seminars.buffalo.edu) for more information or discuss registration with their academic advisor.

University at Buffalo Experience*

Division of Student Affairs

112 Student Union
North Campus
Buffalo, NY 14260-2100
Phone: (716) 645-6125
Fax: (716) 645-3351
Web site: www.student-affairs.buffalo.edu/nsp

Matthew Weigand
Director
weigand@buffalo.edu

**Not a baccalaureate degree program; some courses were formerly offered under Clifford Furnas College*

For a listing of University at Buffalo course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The mission of Student Affairs is to provide high-quality student and campus experiences in fulfillment of the university's mission. Through value-based development, enrichment, and support, Student Affairs promotes an open, enhanced, and diverse learning environment to help prepare students for opportunities and challenges. In pursuit of this mission, University at Buffalo Experience (UBE) offers such courses as UBE 101 University Experience, UBE 102 Dynamics of Leadership, and UBE 202 Career Planning. Additionally, UBE offers a variety of nternship/practicum opportunities in the areas of leadership development, peer mentoring, and peer education.

Urban and Public Policy Studies

Office of Interdisciplinary Degree Programs

College of Arts and Sciences

203 Clemens Hall
North Campus
Buffalo, NY 14260-4670
Phone: (716) 645-2245
Fax: (716) 645-3640
Web site: cas.buffalo.edu/programs/idp/ugrad/
E-mail: dryden@buffalo.edu

Lee Dryden
Director

About the Program

Urban and Public Policy Studies is one of six concentration areas in the Social Sciences Interdisciplinary major. It examines urban problems, politics, and the processes of public planning and administration. After a foundation in American society, public policy, and economic structure, students choose from advanced courses dealing with specific public policy issues such as land use, transportation, racial issues, or social inequality. For more information please see the

Degrees Offered

- **Undergraduate:** BA in Social Sciences Interdisciplinary
- **Concentrations:** Urban and Public Policy Studies

See Social Sciences Interdisciplinary for degree requirements

Visual Studies

Department of Visual Studies

College of Arts and Sciences

202 Center for the Arts
North Campus
Buffalo, NY 14260-6010
Phone: (716) 645-6878
Fax: (716) 645-6970
Web site: www.art.buffalo.edu

David Schirm
Chair

Anthony Rozak
Director of Undergraduate Studies

For a listing of Visual Studies faculty and course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

The Department of Visual Studies is a combination of the former departments of Art and Art History. Visual Studies unites several major aspects of art and visual culture: the practice of art, the history of art, and the critical study of visual images.

Visual Studies offers degree programs in art practice (ART), art history (AHI) as well as courses in visual studies (VS).

See the degree program heading for information on each of these programs.

Degree Options

There are three undergraduate degrees offered in the Department of Visual Studies, BFA in Art, BA in Art and BA in Art History.

There are seven concentration options in the Art BFA, three options in the Art BA, and a single global Art History BA program. See the listings under Art and Art History for more specific information regarding these programs of study.

What is Visual Studies?

Visual Studies is an emerging academic discipline that focuses on the encoding of visual images. The core idea of Visual Studies is both the historical and cognitive process of how images are encoded as signifiers of cultural meaning. The manner in which these images are transmitted, perceived, decoded and contextualized is also a principal concept of Visual Studies.

The term 'visual studies' designates a place where scholars of art,

art history, architecture, film/media studies, theater, philosophy, psychoanalysis, literature, anthropology, computer science, informatics and the natural sciences converge to formulate a critical discourse about the role of images in contemporary culture.

Visual Studies incorporates a critical analysis across all types of visual media in these contexts: the history of vision and imaging technologies, the social semiotics of the image and its historical context; the relationship of the visual and the technological; along with investigations of ideology and subjectivity.

Visual Studies encompasses feminist theory, postcolonial theory, psychoanalytic theory, poststructuralist theory, perception theory and any critical discourse that connects with our contemporary culture of images.

Acceptance Information

See Art and Art History Listings for specific acceptance information.

Advisement

The Undergraduate Advisor for the Department of Visual Studies is Kim James Yarwood in 205 Center for the Arts.

World Languages Program*

Department of Linguistics

College of Arts and Sciences

609 Baldy Hall
North Campus
Buffalo, NY 14260-1030
Phone: (716) 645-2177
Fax: (716) 645-3825
Web site: linguistics.buffalo.edu/language_programs/

Karin Michelson
Chair

David Fertig
Director of Language Programs

**Not a baccalaureate degree program*

For a listing of World Languages course descriptions, see the Undergraduate Catalog Web site at http://undergrad-catalog.buffalo.edu/academicprograms.

About the Program

Foreign language proficiency and familiarity with other cultures are practical and often vital skills in today's global economy. Those whose linguistic repertoire is limited to one language are at a distinct disadvantage, whether the task at hand involves conducting research using original source materials, negotiating a business deal, or forging a friendship.

In addition to being practical, knowledge of a foreign language is personally rewarding. It enables students to discover other ways of thinking and viewing the world, and to better understand their own culture. For many, it is also a means of strengthening ethnic and cultural identity.

Degrees Offered

The World Languages program is not a degree granting program. However, in addition to WLP courses, the Department of Linguistics offers programs in Chinese, German, Japanese, Korean, Polish, and Russian, and the Department of Romance Languages and Literatures (910 Clemens Hall, North Campus, (716) 645-2191) offers programs in French, Humanities, Italian, Latino/Latina Studies, Portuguese, and Spanish.

Appendix

Undergraduate and Graduate HEGIS Information (Inventory of Registered Programs[1]—2008)

Not all programs are available for matriculation. For a current list of available programs, please see the Degree Program Summary on pages 30–31. Enrollment in other than registered or otherwise approved programs may jeopardize a student's eligibility for certain student awards.

College of Arts and Sciences	Award	HEGIS[2]
African-American Studies	BA	2211
American Studies	BA, MA, PHD	0313
Anthropology	BA, MA, PHD	2202
Applied Economics: Info & Internet Economics	CAS	2204
Applied Economics—Financial	CAS	2204
Applied Economics—Health Services	CAS	2204
Applied Economics—International	CAS	2204
Applied Economics—Law & Regulation	CAS	2204
Applied Economics—Urban & Regional	CAS	2204
Art History	BA, MA	1003
Asian Studies	BA	0301
Audiology	AUD	1220
Behavioral Neuroscience	PHD	2010
Bioinformatics	CAS	0499
Bioinformatics & Computational Biology	BS	0499
Biological Sciences	BA, BA/MS, BS, MA, MS, PHD	0401
Chemistry	BA, BS, MA, PHD	1905
Classics	BA, MA, PHD	1504
Clinical Psychology	PHD	2003
Cognitive Psychology	PHD	2002
Communication	BA, MA, PHD	0601
Communication Disorders & Sciences	MA, PHD	1220
Comparative Literature	MA, PHD	1503
Computational Physics	BS	1999
Computational Physics/Physics	BS/MS	1902
Critical Museum Studies	CAS	1099
Dance	BA, BFA	1008
Ecology, Evolution & Behavior	CAS	0402
Economics	BA, BA/MA, MA, MS, PHD	2204
Education and Technology	EDM	0899
Educational Informatics	CAS	0899
English	BA, MA, PHD	1501
Evolution, Ecology & Behavior	MS, PHD	0420
Film Studies	BA	1010
Fine Arts	BFA, MFA	1001

[1]Data Source: State Education Department list of registered programs affiliated with the University at Buffalo (as of 6/6/2008).
Some programs cited above may not be available for matriculation as of the report date. Contact Mark Molnar at (716) 645-3854 for details.
[2]Higher Education General Information Survey standardized codes for registered degree programs.

College of Arts and Sciences	Award	HEGIS[2]
French	BA	1102
French Language & Literature	MA, PHD	1102
Geographic Information Science	CAS	2206
Geography	BA, BA/MA, MA, MS, PHD	2206
Geological Sciences	BA, BA/MA, BS, MA, MS, PHD	1914
German	BA	1103
German Language & Literature	MA, PHD	1103
Historical Musicology & Music Theory	PHD	1004
History	BA, MA, PHD	2205
Humanities—Interdisciplinary	MA	4903
Informatics	BS, MA	0702
Italian	BA	1104
Journalism	CERT	0602
Linguistics	BA, MA, PHD	1505
Mathematical Physics	BS	1999
Mathematics	BA, BA/MA, BS, MA, PHD	1701
Mathematics—Economics	BA	2204
Media Arts Production	MFA	1099
Media Study	BA	0601
Medicinal Chemistry	BS, BS/MS, MS, PHD	1910
Molecular & Cell Biology	CAS	0416
Music	BA	1005
Music Composition	MA, PHD	1004
Music Education	MM	0832
Music History	MA	1006
Music Performance	BAMFA, MM, MUSB	1004
Music Theatre	BFA	1004
Music Theory	MA	1004
Natural Science—Interdisciplinary	MS	4902
New Media Design	CAS	1099
Philosophy	BA, MA, PHD	1509
Physics	BA, BS, MS, PHD	1902
Political Science	BA, MA, PHD	2207
Professional Science Management	CAS	0599
Psychology	BA, BS, MA	2001
Social—Personality Psychology	PHD	2005
Social Science—Interdisciplinary	BA, BS, MS	4903
Sociology	BA, MA, PHD	2208
Spanish	BA	1105
Spanish Language & Literature	MA, PHD	1105
Special Studies	BA, BS	4999
Speech & Hearing Handicapped	MA	0815
Speech & Hearing Science	BA	1220
Studio Art	BA	1002
Theatre	BA, BFA	1007

[1]Data Source: State Education Department list of registered programs affiliated with the University at Buffalo (as of 6/6/2008).
Some programs cited above may not be available for matriculation as of the report date. Contact Mark Molnar at (716) 645-3854 for details.
[2]Higher Education General Information Survey standardized codes for registered degree programs.

College of Arts and Sciences	Award	HEGIS[2]
Transportation & Business Geographics	CAS	2206
Women's Studies	BA	4903

Combined Degree Programs	Award	HEGIS[2]
Aerospace Engineering/Business Administration	BSMBA	0506
Architecture/Business Administration	ARMBA	0202
Architecture/Media Arts Production	ARMFA	0202
Biological Sciences/Dentistry	BSDDS	0401
Business Administration (joint with Saint Bonaventure)	BAMBA	0506
Business Administration/Geography	MBAMA	0506
Chemical Engineering/Business Administration	BSMBA	0506
Civil Engineering/Business Administration	BSMBA	0506
Combined Registered BA Program/Law	BA/JD	4901
Computer Science/Business Administration	BAMBA	0506
Economics/Business Administration	BAMBA	0506
Electrical Engineering/Business Administration	BSMBA	0506
Geography/Business Administration	BAMBA	2206
Industrial Engineering/Business Administration	BSMBA	0506
Law/Business Administration	JDMBA	1401
Law/Social Work	JDMSW	1401
Mechanical Engineering/Business Administration	BSMBA	0506
Social Sciences Interdisciplinary/Social Work	MSMSW	4903
Social Sciences Interdisciplinary/Social Work	BAMSW	2104
Social Work/Business Administration	MBMSW	2104
Sociology/Business Administration	BAMBA	2208
Sociology/Social Work	BAMSW	2208

Graduate School of Education	Award	HEGIS[2]
Adolescence Education	CAS	0803
Biology 7-12	EDM	0401
Biology Education: Adolescence–Prof	EDM	0401
Biology Education: Adolescence, Init/Prof	EDM	0401
Chemistry 7-12	EDM	1905
Chemistry Education: Adolescence–Prof	EDM	1905
Chemistry Education: Adolescence, Init/Prof	EDM	1905
Childhood Education w/Biling Ext–Prof	EDM	0899
Childhood Education w/Biling Ext–Init/Prof	EDM	0899
Childhood Education Init/Prof	EDM	0802
Childhood Education Prof	EDM	0802
Counseling/School Psychology	PHD	2004
Counselor Education	PHD	0826
Early Childhood Education–Init/Prof	EDM	0823
Early Childhood Education–Prof	EDM	0823
Early Childhood w/Biling Ext Prof	EDM	0899

[1]Data Source: State Education Department list of registered programs affiliated with the University at Buffalo (as of 6/6/2008).
Some programs cited above may not be available for matriculation as of the report date. Contact Mark Molnar at (716) 645-3854 for details.
[2]Higher Education General Information Survey standardized codes for registered degree programs.

Graduate School of Education	Award	HEGIS[2]
Early Childhood/Childhood I/Prof	EDM	0802
Early Childhood/Childhood Prof	EDM	0802
Early Childhood w/Biling Ext/Init Prof	EDM	0899
Earth Science Education: Adolescence–Prof	EDM	1917
Earth Science Education: Adolescence Init/Prof	EDM	1917
Earth Science 7-12	EDM	1917
Educational Administration	EDD, EDM, PHD	0827
Educational Psychology	MA, PHD	0822
Educational Technology Specialist–Init/Prof	EDM	0899
Educational Technology Specialist–Prof	EDM	0899
Educational Technology	CAS	0899
Elementary Education	EDD, PHD	0802
Elementary Education N-6	EDM	0802
English for Speakers of Other Languages Init/Prof	EDM	1508
English 7-12	EDM	1501
English Education	PHD	1501
English Education: Adolescence I/Prof	EDM	1501
English Education: Adolescence Prof	EDM	1501
English for Speakers of Other Languages–Prof	EDM	1508
Foreign & Second Language Education	PHD	1101
French 7-12	EDM	1102
French Education: Adolescence–Init/Prof	EDM	1102
French Education: Adolescence–Prof	EDM	1102
General Education	EDM	0801
German 7-12	EDM	1103
German Education: Adolescence–Prof	EDM	1103
German Education: Adolescence–Init/Prof	EDM	1103
Higher Education	PHD	0805
Higher Education Administration	EDM	0805
Information & Library Science	MLS	1601
Italian 7-12	EDM	1104
Italian Education: Adolescence–Init/Prof	EDM	1104
Italian Education: Adolescence–Prof	EDM	1104
Japanese Education: Adolescence–Init/Prof	EDM	1108
Japanese Education: Adolescence–Prof	EDM	1108
Latin 7-12	EDM	1109
Latin Education: Adolescence–Init/Prof	EDM	1109
Latin Education: Adolescence–Prof	EDM	1109
Library & Information Science	CERT	1601
Linguistics/English for Speakers of Other Languages	BAEDM	1508
Literacy Specialist	EDM	0830
Mathematics 7-12	EDM	1701
Mathematics Education: Adolescence–Prof	EDM	1701
Mathematics Education: Adolescence–Init/Prof	EDM	1701
Mathematics Education	PHD	1701

[1]Data Source: State Education Department list of registered programs affiliated with the University at Buffalo (as of 6/6/2008).
Some programs cited above may not be available for matriculation as of the report date. Contact Mark Molnar at (716) 645-3854 for details.
[2]Higher Education General Information Survey standardized codes for registered degree programs.

Graduate School of Education	Award	HEGIS[2]
Mental Health Counseling	MS	2104
Mentoring Teacher	CAS	0899
Music Education	CAS	0832
Music Education–Init/Prof	EDM	0832
Music Education–Prof	EDM	0832
Physics 7-12	EDM	1902
Physics Education: Adolescence–Init/Prof	EDM	1902
Physics Education: Adolescence–Prof	EDM	1902
Reading Education	PHD	0830
Reading Teacher	EDM	0830
Rehabilitation Counseling	MS	1222
Russian 7-12	EDM	1106
Russian Education: Adolescence–Init/Prof	EDM	1106
Russian Education: Adolescence–Prof	EDM	1106
School Administrator & Supervisor	CAS	0828
School Building Leadership	CAS	0828
School Business & Human Resource Administration	CAS	0827
School Counseling	CERT, EDM	0826
School District Business Leadership	CAS	0827
School District Leadership	CAS	0827
School Psychology	MA	0826
Science Education	PHD	4902
Secondary Education	CAS	0803
Social Foundations	PHD	0821
Social Studies Education: Adolescence–Init/Prof	EDM	2201
Social Studies 7-12	EDM	2201
Social Studies Education: Adolescence–Prof	EDM	2201
Spanish 7-12	EDM	1105
Spanish Education: Adolescence–Init/Prof	EDM	1105
Spanish Education: Adolescence–Prof	EDM	1105
Special Education	PHD	0808
Specialist in Educational Administration	CERT	0827
Teaching English to Speakers of Other Languages	EDM	1508
Teaching and Leading for Diversity	CAS	0899

Law School	Award	HEGIS[2]
Criminal Law	LLM	1499
Law	JD, LLM	1401

Roswell Park Institute	Award	HEGIS[2]
Biochemistry	MA, PHD	0414
Biological Sciences	MA, PHD	0401
Biometry	MS	0419
Biophysics	MS, PHD	0415

[1]Data Source: State Education Department list of registered programs affiliated with the University at Buffalo (as of 6/6/2008).
Some programs cited above may not be available for matriculation as of the report date. Contact Mark Molnar at (716) 645-3854 for details.
[2]Higher Education General Information Survey standardized codes for registered degree programs.

Roswell Park Institute	Award	HEGIS[2]
Chemistry	PHD	1905
Microbiology	MA, PHD	0411
Natural Science–Interdisciplinary	MS	4902
Pathology	MA, PHD	0408
Pharmacology	MA, PHD	0409
Physiology	PHD	0410

School of Architecture and Planning	Award	HEGIS[2]
Architectural Technology	BPS	0202
Architecture	BS, MARCH	0202
Architecture/Urban Planning	ARMUP	0202
Environmental Design	BA	0201
Urban Planning	MUP	0206

School of Dental Medicine	Award	HEGIS[2]
Biomaterials	MS	1205
Dentistry	DDS	1204
Endodontics	CERT	1205
Fixed Prosthodontics	CERT	1205
Maxillofacial Prosthodontics	CERT	1205
Oral & Maxillofacial Pathology	CERT	1205
Oral & Maxillofacial Surgery	CERT	1205
Oral Biology	PHD	1205
Oral Sciences	MS	1205
Orthodontics	CERT, MS	1205
Pediatric Dentistry	CERT	1205
Periodontics	CERT	1205
Removable Prosthodontics	CERT	1205
Temporomandibular Disorders & Orofacial	CAS	1205

School of Engineering and Applied Sciences	Award	HEGIS[2]
Aerospace Engineering	BS, ME, MS, PHD	0902
Bioinformatics & Computational Biology	BS	0499
Chemical Engineering	BS, ME, MS, PHD	0906
Civil Engineering	BS, BS/ME, ME, MS, PHD	0908
Computer Science/Computer Science & Engineering	BS/MS	0701
Computer Engineering	BS	0999
Computer Science	BA, BS	0701
Computer Science and Engineering	MS, PHD	0701
Electrical Engineering	BS, ME, MS, PHD	0909
Engineering Physics	BS	0919
Engineering Science	BS, MS	0901
Environmental Engineering	BS	0922

[1]Data Source: State Education Department list of registered programs affiliated with the University at Buffalo (as of 6/6/2008).
Some programs cited above may not be available for matriculation as of the report date. Contact Mark Molnar at (716) 645-3854 for details.
[2]Higher Education General Information Survey standardized codes for registered degree programs.

School of Engineering and Applied Sciences	Award	HEGIS[2]
Industrial Engineering	BS, ME, MS, PHD	0913
Information Assurance	CAS	5199
Mechanical Engineering	BA, ME, MS, PHD	0910
Structural Engineering	BS	0908

School of Management	Award	HEGIS[2]
Accounting	MBA, MS	0502
Accounting/Business Administration	BSMBA	0506
Business Administration	BS, BSMBA, MBA	0506
Finance	MS	0504
Information Assurance	CAS	5199
Management	PHD	0506
Management Information Systems	MS	0702
Organizational Leadership, Change, Development	MS	0506
Supply Chains & Operations Management	MS	0599

School of Medicine and Biomedical Sciences	Award	HEGIS[2]
Anatomical Sciences	PHD	0402
Anatomy	MA	0412
Biochemistry	BS, MA, PHD	0414
Bioinformatics & Computational Biology	BS	0499
Biomedical Science	BS	0499
Biophysics	BS, MS, PHD	0415
Biotechnology	BS, MS	1223
Interdisciplinary Graduate Program—Biomedical Science	PHD	1299
Medical Technology	BS	1223
Medical/Health Informatics	CAS	1217
Medicine	MD	1206
Microbiology	MA, PHD	0411
Neuroscience	MS, PHD	0425
Nuclear Medicine Technology	BS	1299
Pathology	MA, PHD	0408
Pharmacology	MA, PHD	0409
Pharmacology & Toxicology	BS, BS/MS	0409
Physiology	MA, PHD	0410
Structural Biology	MS, PHD	0415

School of Nursing	Award	HEGIS[2]
Acute Care Nurse Practitioner	CAS, MS	1203
Adult Health Nursing	CAS, MS	1203
Case Management	CAS	1203
Child Health Nursing	MS	1203

[1]Data Source: State Education Department list of registered programs affiliated with the University at Buffalo (as of 6/6/2008).
Some programs cited above may not be available for matriculation as of the report date. Contact Mark Molnar at (716) 645-3854 for details.
[2]Higher Education General Information Survey standardized codes for registered degree programs.

School of Nursing	Award	HEGIS[2]
Family Nurse Practitioner	CAS	1203
Family Nursing	MS	1203
Geriatric Nurse Practitioner	CAS, MS	1203
Maternal & Women's Health Nursing	MS	1203
Maternal & Women's Health Nurse Practitioner	CAS	1203
Neonatal Nurse Practitioner	MS, CAS	1203
Nurse Anesthetist	MS	1203
Nursing	BS, DNS, PHD	1203
Nursing–Accelerated Format	BS	1203
Nursing Administration	MS	1203
Nursing Education	CERT	1201
Nursing/Acute Care Nurse Practitioner	BS/MS	1203
Nursing/Adult Health Nursing	BS/MS	1203
Nursing/Child Health Nursing	BS/MS	1203
Nursing/Family Nursing	BS/MS	1203
Nursing/Geriatric Nurse Practitioner	BS/MS	1203
Nursing/Maternal & Women's Health	BS/MS	1203
Nursing/Neonatal Nurse Practitioner	BS/MS	1203
Nursing/Nurse Anesthetist	BS/MS	1203
Nursing/Nursing Administration	BS/MS	1203
Nursing/Psychiatric–Mental Health	BS/MS	1203
Pediatrics Nurse Practitioner	CAS	1203
Psychiatric/Mental Health Nurse Practitioner	CAS	1203
Psychiatric–Mental Health Nursing	MS	1203

School of Pharmacy and Pharmaceutical Sciences	Award	HEGIS[2]
Pharmaceutical Sciences	BS, MS, PHD	1910
Pharmaceutics	BS/MS	1910
Pharmacy	PHARD	1211

School of Public Health and Health Professions	Award	HEGIS[2]
Assistive & Rehabilitative Technology	CAS	1208
Biostatistics	MA, PHD	1702
Community Health	PHD	1299
Epidemiology	MS, PHD	1299
Exercise Science/Nutrition	BS/MS	0424
Exercise Science	BS, BS/MS, MS, PHD	1299
Health Science Education & Evaluation	MS	0837
Nutrition	MS	0424
Occupational Therapy/Physical/Developmental/Disabilities	MS	1208
Occupational Therapy–Early Intervention	MS	1208
Occupational Science	BS	1201
Occupational Science/Occupational Therapy	BS/MS	1208

[1]Data Source: State Education Department list of registered programs affiliated with the University at Buffalo (as of 6/6/2008).
Some programs cited above may not be available for matriculation as of the report date. Contact Mark Molnar at (716) 645-3854 for details.
[2]Higher Education General Information Survey standardized codes for registered degree programs.

School of Public Health and Health Professions	Award	HEGIS[2]
Occupational Therapy	BS	1208
Physical Therapy	DPT	1212
Public Health	MPH	1214
Rehabilitative Science	PHD	1299
Statistics	BA	1702

School of Social Work	Award	HEGIS[2]
Social Welfare	PHD	2104
Social Work	MSW	2104

Undergraduate Education	Award	HEGIS[2]
General Business	AAS	5001
General Studies	AA	4901
Special Studies	BA, BS	4999
Technology	AAS	5301

Vice Provost for Graduate Education	Award	HEGIS[2]
Computational Science	CAS	0799

[1]Data Source: State Education Department list of registered programs affiliated with the University at Buffalo (as of 6/6/2008).
Some programs cited above may not be available for matriculation as of the report date. Contact Mark Molnar at (716) 645-3854 for details.
[2]Higher Education General Information Survey standardized codes for registered degree programs.

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