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SUNY BUFFALO STATE

GRADUATE CATALOG

2013–2014

SUNY Buffalo State
1300 Elmwood Avenue
Buffalo, NY 14222-1095
www.buffalostate.edu

SUNY Buffalo State is an affirmative action/equal opportunity institution and does not discriminate on the basis of race, sex, ethnicity, national origin, sexual orientation, gender identity, religion, age, disability, genetic information, or marital or veteran status. Any person who believes a violation of this policy has occurred, should report such to the Chief Diversity Officer/Title IX Coordinator, Office for Equity and Campus Diversity, 415 Cleveland Hall, or call (716) 878-6210.

This catalog is current as of May 2013. The college reserves the right to cancel any course described in this catalog, and to change any rules governing curriculum, administration, tuition, fees, admissions, regulations affecting students, dates, and course content. Each student is expected to have knowledge of the information contained in this catalog and in other college publications.

This catalog describes all graduate programs of the college. For undergraduate programs, consult the undergraduate catalog <http://catalog.buffalostate.edu/undergraduate>.

The offices of the vice presidents supplied copy for their respective areas of responsibility.

This publication is available in large print or other accessible formats upon request; contact the Academic Affairs Office.

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DEAN'S MESSAGE



Welcome to the Graduate School at Buffalo State!

Buffalo State has a proud tradition of offering a wide variety of excellent graduate programs with courses taught by dedicated scholars in the classroom. Graduate faculty are keenly aware of the importance of research, scholarship, and creativity and are engaged in these processes in a variety of ways.

What you will find at Buffalo State is a wide assortment of excellent programs. Historically well known for our excellent teacher education programs, Buffalo State has become an institution with a comprehensive set of traditional and applied graduate programs. From english and history, to art conservation, museum studies, and creative studies, to public administration, criminal justice, and speech language pathology, to applied math, forensic science, Great Lakes Ecosystems Science and biology, Buffalo State provides a rich array of opportunities to further one's education and career.

Members of the graduate faculty maintain an ambitious research agenda and are responsible for generating more than \$30 million in research funds and grants. Other faculty members conduct applied research, publish articles and books, and work alongside community partners to effect change in local institutions and communities. This collective record positions Buffalo State as a leader in scholarly research and service in comparison to other master's-granting institutions across the state. Importantly, our faculty members also are committed to assisting graduate students in perfecting skills in their chosen fields of study. Our small classes promote productive faculty-student interactions, and provide ample opportunities for both professional and personal mentoring characteristic of the best graduate programs in the nation.

The Graduate School is located in Cleveland Hall 204 and serves as the hub for information about our graduate programs here at Buffalo State. A talented, caring staff is always welcoming—always ready and willing to assist students with the multitude of questions surrounding graduate programs and policies whether they concern

applications, admission, program information, graduate assistantships, fellowships, or graduation requirements.

Please know that students are encouraged to seek assistance from any of the talented Graduate School staff. They and I look forward to assisting you in whatever ways we can.

I am pleased to welcome you to Buffalo State's Graduate School.

Kevin Railey, Ph.D.
Associate Provost and Dean,
The Graduate School

Accreditations

Buffalo State is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104; (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. secretary of education and the Commission on Recognition of Postsecondary Accreditation. Buffalo State also is accredited by the Board of Regents, University of the State of New York. In addition, the following professional organizations have determined that Buffalo State programs meet their accreditation requirements:

Academy of Nutrition and Dietetics, Accreditation Council for Education in Nutrition and Dietetics (ACEND)*

Accreditation Association for Ambulatory Health Care (Weigel Health Center)

Accreditation Commission for Programs in Hospitality Administration

Accrediting Council on Education in Journalism and Mass Communications (ACEJMC)

American Association of Museums (Burchfield Penney Art Center)

American Chemical Society

American Speech-Language-Hearing Association

Council for Interior Design Accreditation (formerly Foundation for Interior Design Education Research—FIDER)

Council on Social Work Education

Engineering Technology Accreditation Commission (ETAC)**

International Association of Counseling Services (Counseling Center)

National Association of Industrial Technology (NAIT)

National Association of Schools of Art and Design (NASAD)

National Association of Schools of Music (NASM)

National Association of Schools of Theatre (NAST)

National Council for Accreditation of Teacher Education (NCATE)***

*The Didactic Program in Dietetics at Buffalo State is accredited by the Accreditation Council for Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, (312)899-0040 ext 5400.

[Http://www.eatright.org/ACEND](http://www.eatright.org/ACEND)

<http://www.eatright.org/ACEND>. *The Coordinated Program in Dietetics at Buffalo is accredited by the Accreditation Council for Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, (312)899-0040 ext 5400.

[Http://www.eatright.org/ACEND](http://www.eatright.org/ACEND)

<http://www.eatright.org/ACEND>

**Engineering Technology Accreditation Commission, Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202, (410) 347-7700. <http://www.abet.org> <http://www.abet.org>

***The professional education programs at Buffalo State are accredited by the National Council for Accreditation of Teacher Education, 2010 Massachusetts Avenue, NW, Suite 500, Washington, DC 20036, (202) 466-7496. The accreditation includes the initial teacher preparation and advanced levels of professional education offered at the college.

Accreditation papers may be reviewed in the Provost's Office, Cleveland Hall 519.

SUNY BUFFALO STATE

When the college opened its doors in 1871 as the Buffalo Normal School, its purpose was to train teachers to serve Buffalo's fast-growing student population in the public schools. Now, Buffalo State educates more than 11,000 undergraduate and graduate students each year. From the beginning, Buffalo State has consistently focused on making quality education accessible to students while addressing the needs of the Western New York community.

The only State University of New York (SUNY) college located in a metropolitan area, Buffalo State offers its students unparalleled educational, cultural, and recreational opportunities, both on the 115-acre campus and throughout the community.

Buffalo State is the largest college in the SUNY system, with 40 master's programs, two certificate of advanced study programs, and five graduate certificate programs, as well as 166 undergraduate programs. The college also offers 19 postbaccalaureate teacher certification programs. For more information see postbaccalaureate and graduate program options on page 3.

Why a Graduate Degree?

The world we work in has become increasingly complex, and advanced study beyond the baccalaureate degree is now a prerequisite for many career fields, particularly those in education, the sciences, and technology. Nearly 2,000 students enrolled in graduate study at Buffalo State find that a graduate degree allows them entry into new or related fields or eligibility for promotion in their current fields.

New York State has strengthened its teacher certification requirements. Teachers are now required to enter the classroom with master's degrees achieved through more rigorous teacher-education programs. The new requirements, unequalled in the United States, will ensure that teachers are prepared to help students meet new state Board of Regents high school graduation requirements.

Why a Graduate Degree at Buffalo State?

Buffalo State has been offering graduate degree programs since 1945. Twenty-three areas of specialization in the master's of science in education are offered—more choices in graduate education study than any other SUNY school.

Specialized graduate degree programs include art conservation, creative studies, educational technology,

teaching bilingual exceptional individuals, literacy specialist and a certificate of advanced study in art conservation. While teacher education remains a tradition at Buffalo State, other graduate programs in adult education, applied economics, and higher education and student affairs administration are unique within SUNY. New and applied programs in music education, great lakes ecosystem science, public and nonprofit management (MPA), museum studies, professional applied and computational mathematics, science education, and students with disabilities 7-12 generalist and students with disabilities 7-12 subject extensions offer exceptional opportunities for professional advancement.

Other notable graduate degree programs include criminal justice, industrial technology, applied economics, biology, English, history, and multidisciplinary studies.

Outstanding opportunities for internships and clinical practice abound. Because Buffalo State is located in New York State's second-largest city, the college can arrange many opportunities for field study or research.

Buffalo State's graduate teacher education programs are distinctive in their ability to provide training in urban, suburban, and rural settings. The training prepares teachers to work effectively in culturally diverse settings, enhance teaching and learning, and reach students with a variety of needs and abilities.

Through assistantships and externally funded research projects, an increased number of graduate students are able to attend full time and participate in research and scholarly activities. Most students complete an applied research project as a culminating activity for the master's degree. For example, all art conservation graduate students are required to complete a nine- to 12-month internship with senior conservators in placements in the United States or overseas, and the speech-language pathology program requires clinical practicum work in both on-campus and off-campus externships.

The campus also offers numerous opportunities for specialized study and research with its Great Lakes Center, the Burchfield Penney Art Center, the Speech-Language-Hearing Clinic, the Center for China Studies, the Center for Excellence in Urban and Rural Education, and various departmental initiatives.

Through the Career Development Center, students can obtain help seeking employment, and Buffalo State's alumni network provides employment leads.

The State University of New York

The State University of New York (SUNY), a statewide system of 64 campuses, enrolls more than 400,000 students. It is the largest, most diverse multicampus university in the nation. SUNY is committed to bringing its students the best and brightest faculty and the promise of a caring learning environment. State support keeps SUNY tuition much lower than rates charged at private colleges and universities.

ADMISSION TO A GRADUATE PROGRAM

Buffalo State welcomes qualified applicants seeking intellectual enrichment and professional advancement through advanced study in its master of arts, master of music education, master of public administration, master of science, master of science in education, certificate of advanced study, graduate certificate, and postbaccalaureate teacher certification programs.

Admission is granted jointly by the Graduate School and the academic department in which the student plans to pursue graduate studies. Individual departments establish specific standards by which they judge admission. These program requirements are listed in the program descriptions in this catalog.

Admission materials including the online application and supplemental department forms can be obtained at www.buffalostate.edu/graduateschool or through the Graduate School Office in Cleveland Hall 204, (716) 878-5601, gradoffc@buffalostate.edu.

Admission Classifications

Degree (Matriculated) Student — a student who has been accepted for matriculation in a master's degree, graduate certificate or certificate of advanced study. An adviser appointed by the department chair develops the student's program of study in consultation with the student. A student is not officially working toward a specific degree until he or she is admitted to degree candidacy. See Candidacy 14 for more information.

Premajor (Nonmatriculated) Student — a student who has been accepted to premajor status instead of the matriculated major due to a deficiency in admission credentials as determined by the academic department. A maximum of 6 credit hours may be applied toward degree requirements upon approval of the major department. Admission in this status does not imply or guarantee admission to a master's degree or certificate of advanced study program. Students accepted in this status may register for coursework with open seating only. Premajor students who wish to matriculate into a major must apply online to the appropriate master's program (unless otherwise directed by the academic department) once all admission deficiencies have been removed. Admission to some departments is not automatic.

Postbaccalaureate Teacher Certification Program (Nonmatriculated) Student (Undergraduate Status) — a student who has earned a baccalaureate degree in a teaching-related content area (or equivalent coursework)

from an accredited college or university and intends to complete required coursework for New York State teaching certification eligibility.

Some teacher certification programs may include only undergraduate courses, while others may require coursework at both the undergraduate and graduate levels. If graduate coursework is completed during the certification program and with the approval of the department, these credit hours may be applied toward a master's degree program.

After successfully completing the teacher certification program, students are eligible to apply online for New York State certification at www.highered.nysed.gov/tcert/teach. Contact the Teacher Certification Office, Caudell Hall 101, with questions. No degree or certification is awarded by Buffalo State.

Admission in this status does not imply or guarantee admission to a master's degree program. Students must apply for admission to the appropriate master's program; admission is not automatic upon completion of the teacher certification program.

Nondegree (Nonmatriculated) Student — a student who has obtained a bachelor's degree and who wishes to enroll in graduate coursework for reasons other than completing a master's degree, graduate certificate, or certificate of advanced study. A student who has missed the application deadline for matriculation in a master's or certificate program may also apply for nondegree status. Students denied admission to a degree program may apply for nondegree status.

All students are advised that a maximum of 6 credit hours taken as a nondegree student may be applied toward degree requirements upon approval of the major department.

Not all programs/departments permit nondegree students to take coursework intended for their graduate degree students. Preference will be given to students matriculated in degree programs. Therefore, registration for all nondegree students is on a space-available basis only.

Acceptance in this status does not imply or guarantee admission to a graduate degree program. Coursework may not be applicable to a degree program; department approval is required.

Undergraduates Enrolling in Graduate Courses

Students who have completed more than 106 credits by end of previous semester at Buffalo State may register for

graduate-level courses if they have maintained a minimum cumulative GPA of 2.5. A maximum of 6 graduate credit hours may be taken as a senior. The combined enrollment of undergraduate and graduate courses should not exceed 15 hours per semester.

Courses taken in this manner are related to a graduate program of study and will not apply toward an undergraduate degree. These courses may be applied toward an advanced degree if they are acceptable to the department. The six-year time limitation on the completion of the master's degree program applies to these as well as other credits.

An undergraduate request to enroll in a graduate course must be made by contacting the academic department offering the course. Permission must be granted by the instructor and department chair.

Admission Requirements

For admission to matriculated graduate study, a student must:

1. Hold an approved baccalaureate degree from an institution that is accredited by an approved regional accrediting agency. In accordance with federal regulations, all students (except Buffalo State graduates) are required to submit a final transcript with a degree posted to the Graduate School by the start of their graduate work for financial aid eligibility.
2. International students must hold a baccalaureate degree that is equivalent to a four-year baccalaureate degree in the United States, from an institution that is accredited by an approved regional or national accrediting agency.
3. Have a minimum cumulative GPA of 2.5 (4.0 scale) in the baccalaureate program or a 3.0 in previous graduate coursework. If the applicant has attended an institution using the quarter system, credit hours will be converted to semester hours using the following equation:

1 quarter hour	=	2/3 (.66) semester hour
2 quarter hours	=	1-1/3 (1.33) semester hours
3 quarter hours	=	2 semester hours

Some departments may establish higher standards for admission or require applicants to submit additional materials, such as a department application, letter of intent, letters of recommendation, teaching certificate, or recent test scores. Refer to the Academic Programs section of this catalog or contact academic departments to determine any additional requirements for admission.

For information on the Graduate Record Exam (GRE), visit www.gre.org; for information on the Miller Analogies Test (MAT), visit www.milleranalogies.com. Standardized test scores will be accepted within a five-year period; older scores will not be accepted. The Graduate School administers a computer-based version of the Miller Analogies Test (MAT) year-round, visit www.buffalostate.edu/graduateschool/admissionsrequirements.xml for additional information.

How to Apply

Buffalo State maintains a student-managed admissions process that requires an applicant to submit a complete application with all required components to the Graduate School by the appropriate deadline. Thus, applicants are assured the admissions committee has all the necessary information to evaluate their qualifications to avoid delay in the application process. Submitted materials are the property of the Graduate School. Copies of application materials will not be supplied to the student or any other institution.

Degree Applicants and Postbaccalaureate Teacher Certification Applicants — Complete the Graduate Admission Application and submit a complete application packet according to the directions below.

Nondegree Applicants — Complete the Nondegree Student Application and submit official transcripts from the institution granting your highest degree earned. See directions below.

Admission forms such as transcript request and supplemental department materials are available at www.buffalostate.edu/graduateschool/admissions; The Graduate School, Cleveland Hall 204; or e-mail gradoffc@buffalostate.edu.

Application Deadlines

Application deadlines vary by department. Some programs have specific deadlines, as indicated in their supplemental application materials or program description. Other programs may review applications on a continual basis. Applicants should allow up to four weeks for admissions procession (including the admission decision). Generally, applications must be received at least one week prior to the beginning of classes for programs with rolling admissions. Further information on deadlines can be obtained from the Graduate School, Cleveland Hall 204, www.buffalostate.edu/graduateschool/documents/appdeadline.pdf, (716) 878-5601.

Completed Application Packet

A completed application packet includes:

1. A completed Online Graduate Admission Application.
2. A \$65 nonrefundable application fee. Acceptable methods of online payment: Visa or MasterCard. Check or money order is also accepted made payable to Buffalo State.
3. Appropriate supplemental application materials, such as department application, letter of intent, letters of recommendation, copy of teaching certificate, or recent exam scores as stated in the program description. It is the applicant's responsibility to review the individual program admissions requirements before applying to determine if supplemental materials are required. Individual program descriptions may be found in the Academic Programs section of this catalog. Supplemental materials are available for download at www.buffalostate.edu/graduateschool/admissions. International applicants: see next section for instructions.

4. Official transcripts from all colleges and universities attended must be in sealed envelopes. Each institution must send the transcript directly to the student. Applicants submit unopened transcript envelopes with other application materials. Buffalo State students are not required to submit transcripts, as the Graduate School will obtain Buffalo State transcripts; however, if applicant attended other institutions these transcripts must be provided even if sent at time of a previous application. In accordance with federal regulations, all students (except Buffalo State graduates) are required to submit a final transcript with a degree posted to the Graduate School by the start of their graduate work for financial aid eligibility.
5. Master of Music Education application is entirely online. See <http://music.buffalostate.edu/>.

Note: Failure to report all previous college attendance on the application is considered to be academic dishonesty. Discovery of such dishonesty can result in dismissal from Buffalo State.

International Applicants

International student degree requirements

For admission to graduate study, international students must hold a baccalaureate degree from an institution that is accredited by an approved U.S. regional accrediting agency or a degree that is equivalent to a four-year bachelor's degree in the United States.

Deadlines

All international applications requiring student visas must be completed by July 1 for fall admission; December 1 for spring admission; and April 1 for summer admission for all graduate programs (except Canadian applicants). Students should also be aware of the individual department application deadline when considering enrollment. In some cases, departments want applications submitted prior to the Graduate School deadlines cited above. If there are questions, contact the Graduate School for further information on deadlines.

A completed international application packet includes:

1. A completed Online Graduate Admission Application.
2. A \$65 nonrefundable application fee. Acceptable methods of payment: Visa, or MasterCard.
3. Official or certified true copies of transcripts along with a certified English translation of all transcripts from postsecondary schools outside the United States.
4. A degree evaluation. Applicants must submit official copies of postsecondary diploma(s)/transcripts to one of the following organizations for a document-by-document evaluation to determine equivalency to a United States bachelor's degree:

Josef Silny and Associates, Inc., International Education Consultants, 7101 SW 102 Avenue, Miami, FL 33173, Phone: (305) 273-1616, Fax: (305) 273-1338

World Education Services Inc., P.O. Box 745, Old Chelsea Station, New York, NY 10113-0745, Phone: (800) 937-3895, Fax: (212) 739-6100

Students should contact the organization or visit its Web site for the most current requirements and to request or download an application. Completed applications listing the SUNY Buffalo State Graduate School as the recipient should be returned to the organization with the required fees and credentials. The organization will forward its evaluation report to Buffalo State. This evaluation can take up to four weeks to complete after all documents are received. Check with the organizations for specific fee structure(s).

Canadian Applicants: Students holding undergraduate degrees from a Canadian college or university should submit official transcripts to the Graduate School. If transcripts follow a system similar to that of the United States, they will be evaluated locally. If not, Canadian applicants will be required to comply with the above international student credential policy.

5. Applicants for whom English is a second language must submit a score of the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) as documentation of English language proficiency. Applicants with a minimum TOEFL score of 550 or higher on the paper exam or 79 on the Internet exam, or with an IELTS score of 6.0 or higher will be considered for admission. Information on the TOEFL can be found at www.toefl.org. Information on the IELTS can be found at www.ielts.org.

Applicants with a TOEFL score of less than 550 on the paper exam or below 79 on the Internet exam, or with an IELTS score of less than 6.0 can apply for conditional admission to the Graduate School if they want to pursue both English language study and graduate education at Buffalo State. Students who do not have the appropriate language scores can have their academic credentials reviewed, and if these meet Buffalo State expectations, students can enroll in our ESL program. For details of this program see below – English as a Second language Program.

English as a Second Language Program

International students who do not meet the required English language requirement can be admitted to the Buffalo State's English as a Second Language Program (ESLP). Students who wish to pursue this course of action first have their application materials reviewed by the program of their choice. If their academic qualifications are reviewed favorably, the student is granted conditional acceptance into the Graduate School and admission into the ESL program.

The English as a Second Language Program (ESLP) at Buffalo State is a non-degree, non-credit bearing program designed to help students with varying levels of English proficiency through coursework, interaction with native speakers of English, and individualized language practice. The program consists of six levels of English language study. Each level consists of 20 hours of class time per

week (15 weeks spring and fall semesters; 8 weeks summer), plus an additional 3 hours of small conversation group practice.

Students seeking this option must first submit a completed graduate admission application. After careful review of the students' academic qualifications and their ability to succeed academically, the Graduate School notifies students of their acceptance into the ESLP. Students must notify the Graduate School within 30 days of their acceptance whether they will pursue the ESLP option.

For program and general information about the ESLP, contact the Continuing Professional Studies Office (716) 878-5907 and for specific questions regarding homeland security rules and regulations, student visas, I-20, contact the International Student Affairs Office.

Other International Student Enrollment Information

Contact the International Student Affairs Office for more information about services for international students: Campbell Student Union 400, www.buffalostate.edu/internationalstudentaffairs/, or (716) 878-5331.

Student Visas: International students must show proof of financial support for the duration of studies on the Confidential Statement of Finances form. About \$30,303.00 per year should be budgeted to cover expenses. By the time they arrive on campus, international students should have arranged for the funds to cover their college career. Payment of all college-related expenses must be made prior to the beginning of each semester.

Once an applicant has been officially accepted to a degree program, the Graduate School will mail an acceptance letter and the paperwork necessary to apply for an I-20 form. The applicant must return these forms directly to the International Student Affairs Office, which will send an I-20 form to the student to obtain an F-1 (student) visa from the U.S. embassy or consulate in their home country.

Mandatory Student Health Insurance: International students are required to purchase SUNY International Health Insurance or have comparable coverage. The cost for the 2013-2014 academic year is \$1,113.00. If a student possesses comparable health insurance, he or she is still required to purchase the medical evacuation coverage for \$84.60. Services at the Weigel Health Center are available to all registered students free of charge regardless of insurance coverage. Visit www.buffalostate.edu/weigel/ or call (716) 878-6711 for more information.

Housing: International students may live on or off campus. On campus, they may live in the international residence hall, which remains open during U.S. holidays, or in any other residence hall, provided they move out of the hall during the holidays. Visit the Residence Life Office at www.buffalostate.edu/residencelife/ or call (716) 878-3000 for more information.

Incomplete Transcripts

Conditional admission may be granted to applicants whose baccalaureate degree or master's degree has not yet been conferred, or if grades for the current term have not yet closed at the time of application. Applicants must have a final official transcript showing the awarding of the degree sent to the Graduate School as soon as the degree is conferred but no later than 30 days after the beginning of the semester for which applicant was accepted. (The Graduate School will obtain final transcripts for Buffalo State graduates.) Failure to meet this requirement will result in prior acceptance to the college being rescinded. A "hold" will also be placed on the student's record resulting in ineligibility for future enrollment. This may impact Financial Aid eligibility.

Readmission to Graduate Study

Discontinuance Registration Procedure

Students who do not register for and complete one graduate course within four academic semesters (fall/spring) must apply for readmission to graduate study in accordance with established deadline dates and current admission requirements. Students who do not register for course work within one year of initial acceptance must reapply for admission. Those seeking readmission must follow the follow steps below.

1. A completed Online Graduate Admission Application.
2. A \$65 nonrefundable application fee. Acceptable methods of online payment: Visa or MasterCard. Check or money order is accepted made payable to Buffalo State.
3. Submit all transcripts (undergraduate and graduate) not on file in the Graduate School Office as well as all supplemental application materials as listed in current program admission guidelines.
4. Submit the online application and other supplemental application program department materials to the Graduate School, Cleveland Hall 204, by the appropriate deadline.
5. If degree candidacy was awarded during previous study, the student must complete a new degree candidacy application upon readmission. Any exceptions to the completion of a new candidacy must be approved by the academic department.

Academic Clemency Procedure

Conditions for academic clemency:

1. The graduate student will have the option to request clemency for up to two consecutive semesters of previous work (9 to 12 consecutive credit hours if earned on a part-time basis). A decision for clemency will include all coursework taken within the one or two semesters indicated at Buffalo State College and shall not be selectively applied. Therefore, the student forfeits all prior coursework up to the 12 credit hour maximum and any remaining credit hours at the time of clemency must result in a 3.0 GPA or greater.

2. Clemency cannot be used by students who have already earned a degree for any work completed prior to the award of that degree.
3. Credits for which the student has requested academic clemency will remain on the student's transcript but will not be calculated into the overall cumulative average and will not count toward graduation. The student's transcript will contain a notation of academic clemency.
4. The student will be required to sign a statement indicating his/her understanding of the conditions stated in the academic clemency policy and will file a formal petition with the Graduate School. Such a statement will indicate that computation of the grade point average for admissibility to other graduate programs could include all college work completed.
5. Students approved for academic clemency will be required to meet with their academic adviser in order to determine the appropriate selection of courses.
6. Students will be advised that the decision to file for academic clemency may affect qualification for financial aid.
7. The decision to exercise the academic clemency provision is final and irreversible.
8. The dean of the Graduate School will be responsible for overseeing the implementation of this policy.
9. Students eligible for academic clemency can apply for academic clemency by contacting the assistant dean of strategic and enrollment planning, The Graduate School, Cleveland Hall 204, (716) 878-5601.

Change of Major

Students wishing to transfer from one major to another must apply to the new degree program in accordance with established deadline dates and current admission requirements. Those seeking to change majors should:

1. Complete the Online Graduate Admissions Application. Follow instructions for applying as directed:
www.buffalostate.edu/graduateschool/howtoapply.xml
www.buffalostate.edu/graduateschool/howtoapply.xml.
2. Submit appropriate departmental supplemental materials (available to download online at www.buffalostate.edu/graduateschool/admissions) as one packet to the Graduate School, Cleveland Hall 204, by stated deadline.
3. Some departments may require their students to complete a Degree Candidacy Application at the time of admission to the program.

ACADEMIC REQUIREMENTS

Candidacy

Candidacy is a written agreement outlining a course of study necessary to receive a degree or certificate. All students pursuing a master's degree, graduate certificate, or a certificate of advanced study must apply for and be admitted to candidacy after the completion of 6, but before the completion of 12, graduate-level credit hours at Buffalo State. A degree candidacy application must be approved by the adviser, department chair, and school dean. (Degree candidacy applications for multidisciplinary studies students must be approved by the principal adviser, advisory committee (if required) and the graduate school dean.) Failure to develop an approved program and be admitted to candidacy before the completion of 12 graduate-level credit hours at the college could restrict further registration.

The degree candidacy application must be completed in consultation with the adviser. This process serves as academic advisement which includes course planning, the capstone experience, and professional development in relation to the degree, graduate certificate, or certificate of advanced study sought.

Degree candidacy applications are available from the academic department and are listed on the Graduate School Web site www.buffalostate.edu/graduateschool/forms. The current requirements for admission to candidacy are:

1. Completion of at least 6 credit hours of graduate-level coursework at Buffalo State.
2. Completion of all required prerequisite courses.
3. A minimum cumulative GPA of 3.0 (B grade) in all graduate-level coursework. No grade lower than a C grade (2.0) is acceptable to meet degree requirements.
4. Removal of all deficiencies and incomplete (I) grades.
5. If requesting transfer credit, the Graduate School must receive an official transcript from the regionally or nationally accredited institution where the graduate-level coursework was completed. Only grades of B grade (3.0) or better will be accepted for transfer credit. See policy under Transfer Credit on page 15.
6. A minimum of 15 credit hours of coursework at the 600- or 700-level is required in all degree programs.
7. A maximum of 6 credit hours of independent study (XXX 590) may be included in a degree program.
8. Coursework taken to fulfill degree requirements for one master's degree or certificate of advanced study may

not be applied toward another master's degree, graduate certificate, or certificate of advanced study.

9. A maximum of 6 credit hours of special topics (XXX 587), workshops (XXX 594), conferences (XXX 596), and microcourses (XXX 598) may be included in a master's degree program.

Graduate candidacy forms require several approval signatures for the purpose of ensuring the accuracy of the proposed program and compliance with academic policy. Graduate candidacy is not approved until all signatures have been obtained. The graduate candidacy includes a section titled Completion Date. These are anticipated completion dates. Due to course prerequisites, course availability, etc., it may not be possible to complete coursework in the term listed on the candidacy. Students should periodically check with advisers to review the anticipated completion dates.

Changes to Approved Degree Candidacy

Once the candidacy form has been approved, changes can be made only with approval of the student's adviser, department chair, and school dean. Change forms are available in department offices or at www.buffalostate.edu/graduateschool/forms.

Graduate Thesis/Project Continuation Policy

Graduate students who have 24 or more earned hours and who do not complete their capstone requirement by the end of the term in which they have registered will receive an IP grade on their transcript. Once a student has (a) earned 24 or more graduate hours, (b) registered for at least 1 graduate capstone requirement credit and received an IP grade, and (c) not completed the capstone requirement within two years, the student must register for 722 Thesis/Project Extended – non-credit bearing but billable for 1 credit at existing graduate tuition rates, until the thesis or project has been completed. If the student does not register for the 722 course, he or she will become a nonmatriculated student and will have to reapply for admission to the Graduate School and pay all other appropriate fees. Reapplication must be made in accordance with the established deadline dates and current admission requirements. See Readmission on page 12. Once a student has completed the thesis or project, the IP graduate will be changed to the appropriate grade.

Graduation/Commencement

In order for a graduate student to be awarded a master's degree or certificate of advanced study, the following minimum requirements must be met:

1. Completion of the Application for Graduation, submitted to the Graduate School, Cleveland Hall 204, by the specified deadline as listed in the Graduation Application www.buffalostate.edu/graduateschool/graduation. Failure to apply by the deadline date may delay the granting of the degree and may result in the omission of the student's name from the commencement program.
2. Completion of a minimum of 30 graduate-level credit hours.
3. A minimum cumulative GPA of 3.0 (B grade) in all graduate coursework.
4. Completion of all coursework and degree requirements within the six-year period immediately preceding the date of graduation.
5. Completion of a minimum of 15 credit hours of 600- or 700-level coursework.
6. Receipt by the Graduate School of official transcript(s) of approved transfer credit as listed on the Degree Candidacy Form. Transfer credit must meet all requirements as defined under Transfer Credit on page 15.
7. All graduate and undergraduate courses with a grade status of I, N, or X must be completed and appropriate grades submitted.
8. All financial obligations to the college must be met, and all college property must be returned.
9. Students who write a master's thesis must submit the final submission of their approved theses (to be done electronically) through Digital Commons before a diploma will be issued. Digital Commons is an electronic publishing mechanism sponsored and maintained by E.H. Butler Library. The submission is free to students and allows for wide distribution of student work via the world-wide web. Students should discuss the submission process with their thesis adviser. Information about Digital Commons and past theses can be found at <http://digitalcommons.buffalostate.edu/>.
10. Master of Science Multidisciplinary Studies candidates must submit the final submission of their approved research methods paper and master's project to the Graduate School Office before a diploma will be issued. Students should discuss the submission process with their project adviser.

Students who do not meet the requirements for graduation by the semester for which they applied must submit a new application for graduation, in accordance with established deadlines, for the semester in which the requirements will be completed.

Commencement

Commencement is held once each year at the end of the spring semester in May. Students eligible to participate in commencement are those who complete their degree requirements in December (previous), January (previous),

May (current), or August (anticipated). Visit the commencement Web site for more information: www.buffalostate.edu/commencement.

Initial/Professional Certification in Education

Buffalo State's graduate degree programs in education are registered with the New York State Department of Education. All graduates who meet state certification requirements are recommended by the college for the appropriate certification. Students eligible for initial/professional certification can apply online at www.highered.nysed.gov/tcert/teach. Contact the Teacher Certification Office, Caudell Hall 101, (716) 878-6121, with questions.

Project, Thesis, Comprehensive Examinations, and Defense of Graduate Portfolio

Degree programs require a project, thesis, comprehensive examination, or defense of graduate portfolio as evidence of mastery of the chosen field. Individual program descriptions in this catalog contain specific degree requirements. Contact hours stipulated for projects and theses will vary, depending on the nature of the work and departmental requirements. See Graduate Thesis/Project Continuation Policy on page 14.

Time Limit for Degree Completion

All coursework and degree requirements must be completed within the six-year period immediately preceding a student's graduation. Coursework completed more than six years prior to date of graduation cannot be used to satisfy degree requirements unless approved by the adviser, department chair and school dean.

Transfer Credit

There is no automatic transfer of credit toward a graduate degree or certificate of advanced study. A maximum of 12 graduate-level credit hours of transfer work from an approved regionally or nationally accredited institution may be applied to a degree program or certificate of advanced study upon departmental/adviser approval. Academic departments reserve the right to allow fewer transfer credits. The applicability of transfer credit to a graduate certificate program is determined by the department. The 12-credit maximum does not apply to the master's degree program in multidisciplinary studies, which allows a maximum of 15 credit hours of transfer work upon the principal adviser and advisory committee (if required) approval.

Specific restrictions:

1. Transfer work must be a coherent part of the required program of study and be approved by the major department.
2. Transfer work must be completed within the six-year period immediately preceding the date of graduation.
3. Only grades of B (3.0) or better are acceptable for transfer. Grades of S (satisfactory) or P (pass) are not acceptable.

4. Coursework taken to fulfill degree requirements for one master's degree or certificate of advanced study may not be applied toward another master's degree, graduate certificate, or certificate of advanced study.
5. Official transcripts must be submitted to the Graduate School (in a sealed envelope) from the institution at which the coursework being requested for transfer was completed. The institution must be accredited by an approved regional or national accrediting agency.
6. Transfer credit requested from institutions using the quarter system will be converted to semester hours using the following equation:
1 quarter hour = $\frac{2}{3}$ (.66) semester hour
2 quarter hours = $1\frac{1}{3}$ (1.33) semester hours
3 quarter hours = 2 semester hours

Transfer credit requests should be presented for consideration at the time the student applies for degree candidacy (see Candidacy section 14) or as soon as the coursework is completed. Approved transfer credit is added to the student's official record when the student's approved degree candidacy application and official transcripts of transfer credit are received by the Graduate School.

ACADEMIC POLICIES

Graduate students must assume full responsibility for knowledge of rules and regulations of the college and department requirements concerning their individual degree programs. Requirements and programs are subject to change, and students must be aware of current regulations.

Academic Misconduct

All students are expected to display honesty and integrity in completing course requirements and complying with college academic regulations. Academic misconduct refers to plagiarism or cheating on examinations or assignments and is inconsistent with the aims and goals of Buffalo State. Specifically, students may neither use the work of another individual without proper acknowledgment nor perform work for another individual. Other examples of inappropriate academic conduct include prior acquisition or possession of an examination or submission of false data. As a result of a sustained allegation of academic misconduct, a low or failing grade for part or all of the coursework may be given to the student at the discretion of the instructor. No penalty for an alleged instance of academic misconduct may be imposed unless the student has been apprised of the allegation, the penalty, and the procedures of due process that are available.

A statement outlining formal college policies and procedures to be followed in cases of alleged academic misconduct is on file in each dean's office, the Academic Standards Office, and the Student Life Office.

Cases of severe infractions of acceptable standards may be brought before the Academic Misconduct Board, chaired by the associate dean of Academic Standards, and may result in academic dismissal.

Academic Probation and Dismissal

All graduate students are required to maintain a minimum cumulative GPA of 3.0 (4.0 scale). A student is automatically placed on probation if the GPA falls below 3.0.

Matriculated full-time students are given one semester, and matriculated part-time students are given 9 credit hours to achieve a 3.0 GPA, provided total credit hours do not exceed the degree program by more than 6. Failure to achieve a 3.0 GPA within the specified time results in academic dismissal. In addition, failure to maintain a

minimum 3.0 GPA during each semester of academic probation results in academic dismissal.

Premajor (undeclared) students must have a 3.0 GPA by the completion of 12 or more credit hours. Failure to achieve a 3.0 GPA by the completion of 12 or more credit hours of graduate-level coursework results in academic dismissal. A student with fewer than 12 credit hours automatically is placed on academic probation should the GPA fall below 3.0. Failure to achieve a 3.0 GPA by the completion of 12 credit hours results in academic dismissal. In addition, failure to maintain a minimum 3.0 GPA during each semester of academic probation results in academic dismissal.

Nondegree students have until the completion of the next semester in which enrolled to bring his or her GPA to 3.0 after being placed on academic probation. Failure to do so renders the student ineligible for further registration.

A student who has been academically dismissed must wait one full year from the time of dismissal before applying for readmission.

A student may be readmitted to the college only once after an academic dismissal. If readmitted, the student is automatically returned to academic probation if his or her cumulative GPA is below 3.0. The student then has one full-time semester or 9 credits of part-time study to achieve a 3.0 cumulative GPA, and must maintain a minimum of 3.0 GPA during each semester of academic probation. Failure to do so results in final academic dismissal.

Alternative Methods of Earning Credit

Course by Contract

Students who have been accepted to a graduate degree program and are in good standing may request to take a course by contract by contacting the department offering the course. The instructor must be a member of the college's graduate faculty, and the course must be among those already approved by the college.

Under this option, a graduate faculty member provides the student with a course outline, bibliography, and a statement of responsibilities and dates by which these are to be met. The number of student-instructor conferences, the type of evaluation, and the culminating activity is determined by the faculty member and the student prior to registration for the course. These requirements must be filed with the department chair. Before initiating a graduate course by

contract, the student must register for the course using the Individual Graduate Study Application form, obtained from the department office, the Graduate School, or www.buffalostate.edu/graduateschool/forms. This form must be signed by the instructor, the department chair, and the school dean by the Individual Study Application deadline. Consult the academic calendar online at www.buffalostate.edu/academics (click on Academic Calendar).

Cross Registration

Graduate coursework may be taken at any public or private college in Western New York with which Buffalo State has a cross-registration agreement. Courses are taken on a space-available basis during the fall and spring semesters only. Students must be registered for at least one course at Buffalo State in order to cross register at another institution. International students must be registered for 9 credit hours at Buffalo State to participate.

Cross-registration forms are available in the Registrar's Office. They must be signed by the student's adviser and returned to the Registrar's Office for signature. Students then take signed forms to the campus where the course will be taken, where they follow the registration procedures of that campus.

Transcripts are forwarded automatically to Buffalo State at the end of the semester. Courses taken through cross registration are recorded as if they had been taken at Buffalo State; the credit hours and grades are included in the student's cumulative GPA.

Independent Study (XXX 590)

Independent study provides an opportunity for a student to pursue a topic that may be covered only briefly or not at all in a regular course offering. Independent study is never a substitute for a regular course.

Independent study may be offered by any member of the college's graduate faculty. All independent study is listed by the appropriate content area prefix and the number 590 (e.g., CRJ 590). A maximum of 6 credit hours of independent study may be included in a master's degree program.

Students must register for graduate-level independent study by completing the Individual Graduate Study Application, available from academic departments, the Graduate School, or www.buffalostate.edu/graduateschool/forms. The application must include a written paragraph describing the proposed course, including the purpose, objectives, method of instruction (e.g., readings, individual consultations with instructor, etc.), and method of evaluation (e.g., research paper, examination, etc.). The application must be signed by the instructor, the department chair, and the school dean by the Individual Study Application deadline. Consult the Academic Calendar for appropriate deadlines, online at www.buffalostate.edu/academics (click on Academic Calendar).

Special Topics (XXX 587), Workshops (XXX 594), Conferences (XXX 596), and Microcourses (XXX 598)

Special topics, workshops, conferences, and microcourses are graduate courses offered—at variable times and places—on particular themes outside the usual schedule of classes. These courses also carry variable credit. Special topics emphasize an in-depth examination of rapidly and significantly changing disciplinary issues, topics, or practices. Workshops emphasize process and implementation of theory, and they involve participants in the accomplishment of individualized objectives on a specific theme. Conferences emphasize a unique, one-time experience on a given theme. Microcourses offer intensive instruction with a specific, limited objective. A maximum of 6 credit hours of workshops, conferences, and microcourses may be included in a master's degree program.

Auditing Courses

Graduate students who are registered for one or more courses may audit courses, provided they have the approval of the department chair and the course instructor. An auditor attends a course without formal recognition, is not on the official class list from the Registrar's Office, is not required to meet the course requirements, is not charged tuition or fees for the course, and does not earn credit for the course.

Special audit: Individuals age 60 or older may audit courses on a space-available basis with the approval of the instructor. Arrangements can be made through the Admissions Office, Moot Hall 110, (716) 878-5511.

Course Load

1. Full-time status: Full-time academic status typically consists of a course load of 9 graduate-level credit hours per semester. Some departments, though, require that students take more credits for accreditation purposes (check with your department).
2. Graduate assistants: Full-time academic status for graduate assistants is 6-9 graduate level credit hours per semester. Final assignments are determined by the department supervising the GA appointment.
3. Last semester of study: Full-time academic status is granted to students in their final semester of study if they are working full-time on a master's project or master's thesis. Advisers and department chairs need to verify the student's workload in these cases.
4. Finances: In determining billing status, students pay tuition based on the number of credits they register for - up to 12 credits.
5. Financial Aid: To be eligible for financial aid, students must be enrolled as matriculated students in an eligible program of study. Other guidelines vary depending on the type of aid. Various state and federal financial aid programs require that students be registered for 12 graduate credits; loans typically do not. Students should contact the Financial Aid Office or the Graduate School for details and personalized counseling.

6. Fully employed part-time students registered in the fall and spring semester should limit themselves to a maximum of two courses each semester.

Grade Point Average (GPA)

To earn a graduate degree or certificate, a student must maintain a minimum cumulative GPA of 3.0 (B grade) on a 4.0 scale in all graduate courses completed at the college. Transfer credits are not included in the average. Undergraduate coursework completed while working toward the graduate degree is not included in the average but is shown on the transcript. Grades received for coursework completed at another institution through cross registration are included in the average.

At the graduate level, grades of C (2.0) or higher may be applied toward credit requirements for a master's degree. Typically, no more than 9 credit hours with a grade of C can be accepted toward a master's degree, and some degree programs permit even fewer than 9 credit hours of C work. Grades of C- (1.67) or lower are not used to satisfy degree requirements. Grades of C- or lower may be repeated (see Repeating Courses 20).

Grading

The college uses letter grades (including plus/minus) to indicate the scholarly achievement of a student at the completion of a course. All grades are awarded at the sole discretion of the faculty member in charge of the course. A grade must be submitted for each student on the course roster at the end of the semester. Students are apprised of class evaluation policies in each class at the beginning of the semester. Questions regarding grading policies or a grade received in a particular course should be addressed to the instructor or the instructor's department chair.

Grading System

- A = Superior
- A- = Above Average
- B+ = Above Average
- B = Average (required minimum cumulative GPA)
- B- = Below required average, but may be used to meet degree requirements
- C+ = Below required average, but may be used to meet degree requirements
- C = Below required average, but may be used to meet degree requirements
- C- = Below required average; may not be used to meet degree requirements
- D+ = Below average; may not be used to meet degree requirements
- D = Below average; may not be used to meet degree requirements
- E = Failure or unofficial withdrawal

- S = Satisfactory
- SD = Satisfactory with Distinction
- U = Unsatisfactory
- P = Pass; may not be given for graduate coursework
- F = Fail; may not be given for graduate coursework

The following letters are used to indicate status:

- I = Incomplete
- IP = In progress
- N = Grade delayed
- NR = Grade not required
- X = Grade not submitted
- W = Withdrawn

Explanation of Grades

S (Satisfactory), and U (Unsatisfactory) grades are reserved for graduate theses, student teaching or other field experience that is not suitably evaluated using standard letter grades. SD (Satisfactory with Distinction) is reserved for graduate theses. S, SD and U grades may be given only for courses so designated. Incomplete (I) Grades: An instructor may submit a grade of I (Incomplete) only when circumstances leading to a student's failure to complete course requirements are known to be beyond the student's control (e.g., serious illness or unavailability of material) and only when the department chair or program coordinator has been properly notified. The student must complete course requirements and the instructor must submit a grade change by the 10th week of the following spring or fall semester or the grade automatically converts to an E (Failure). In the event that the instructor who granted the I grade is unable to evaluate whether the student has fulfilled the course requirements during the stipulated time period, the chair or program coordinator takes responsibility for evaluating the student's work and changing the grade.

A grade of IP (In Progress) is reserved for graduate students who have not completed their thesis or project requirement. When work is completed, the instructor submits a grade change, replacing the IP with a final grade. A grade of N (Grade Delayed) may not be submitted for a thesis or project.

A grade of W (Withdrawn) may be submitted only when a student has officially withdrawn from a course.

Quality Point System

The grade point system is used to determine all cumulative GPAs. A student receives four grade points for each A earned; three points for each B; two points for each C; one point for each D; and zero points for each E. Instructors may choose to assign plus or minus grades as well. No other letter grades carry grade-point value. The possible grades and corresponding grade points are as follows:

- A = 4.0
- A- = 3.67

B+	=	3.33
B	=	3.0
B-	=	2.67
C+	=	2.33
C	=	2.0
C-	=	1.67
D+	=	1.33
D	=	1.0
E	=	0.0

A student's cumulative GPA is computed by dividing the total number of grade points awarded by the total number of semester hours attempted in which a grade carrying grade points is earned.

Change of Grade

Grades submitted at the end of the semester are considered final. In the case of a clerical error or other extenuating circumstance resulting in an incorrect grade, the instructor must submit a written justification to the appropriate associate dean requesting a grade change. The appropriate associate dean must approve all grade changes and forward the grade change form to the Registrar's Office, Moot Hall 210.

Repeating Courses

A student may repeat a given course once for which a C-, D+, D, or E grade was earned. The repeated course must have the same prefix, number, title, and credit. The repeated course must be taken at Buffalo State. Only the passing grade and those credit hours completed will be used to calculate the GPA. Graduate students may repeat a maximum of two courses of the total degree program.

All grades remain on the permanent record. A passing grade will not replace a U grade, since the U is not computed in the GPA. Courses with letter grades A through C cannot be repeated. Illegally repeated courses are not used to calculate the cumulative GPA.

Practicum courses may differ. Contact the academic department.

Repeating courses affects financial aid. Contact the Financial Aid Office for the current policy.

Once a student has completed a master's degree or certificate of advanced study, a final average for that degree or certificate is computed. Courses for that degree or certificate may not be repeated, and that final average is not affected by any subsequent coursework completed at Buffalo State.

Registration

Students are expected to complete registration within two weeks after they become eligible to register and to attend the first meeting of all classes in which they have enrolled.

Immunization Requirement

All students born on or after January 1, 1957, are required to submit proof of immunization against measles, mumps, and rubella. All students must submit a completed Meningitis Information Response Form indicating

immunization or decision not to obtain immunization. Students who do not submit proof of immunizations are not permitted to register. Contact the Weigel Health Center to submit proof of immunizations or for more information at (716) 878-6711 or www.buffalostate.edu/weigel.

Advisement

The department chair/graduate coordinator designates a member of the graduate faculty to serve as an adviser to the student and to assist in planning the course of study. It is the student's responsibility to seek a conference with the adviser before registration, application to degree candidacy, and application for graduation.

Change of Name, Address

Students are responsible for notifying the Graduate School of any change of name or address so that registration information and other mailings can be properly directed. Download data change form from www.buffalostate.edu/registrar/forms.xml and submit it along with name change proof by fax to (716) 878-5630, email gradoffc@buffalostate.edu or mail to: The Graduate School, Cleveland Hall 204.

Dropping Courses

Students may drop courses online through the first week of a fall or spring semester or the first two days of a Summer Session or January Term without financial penalty. Officially dropping a course removes all record of the course from the student's transcript, and no financial penalty is assessed.

Withdrawal from Courses

Students who wish to discontinue a course after the drop/add period but before the final withdrawal date (the end of the 10th week of the semester or the equivalent point in a Summer Session or Intersemester; see Academic Calendar) must complete and submit an official withdrawal form to the Registrar's Office, Moot Hall 210.

Withdrawal forms are available at most academic department offices. A course from which a student has officially withdrawn remains on the transcript, recorded as W, but does not count in credit hours or GPAs.

Instructors are required to apprise students of their academic standing no later than the end of the ninth week of the semester (or the equivalent point in a Summer Session or Intersemester; see Academic Calendar). If a student stops attending but does not officially withdraw from a class, a grade of E (Failure or unofficial withdrawal) is recorded.

An exception may be made for unusual circumstances beyond the student's control. In such cases, procedures for Waiver of Academic Regulations apply. Withdrawal from a course may affect eligibility for financial aid in current and future semesters. For additional information about financial aid eligibility, refer to the Financial Aid section of this catalog 29 or www.buffalostate.edu/financialaid.

Students withdrawing from coursework may be eligible for a tuition refund in accordance with the schedule 27. No refunds are issued beyond the end of the refund period.

A student who does not register for any course or withdraws from all courses during his or her first semester should inform the Graduate School.

Transcripts

Official transcripts are not issued directly to students but are forwarded, upon request, to authorities whom the student designates. Student copies may be ordered for personal use. A \$5 fee is charged for each transcript request. Photo identification is required when picking up student copies. Transcript request forms are available in the Registrar's Office, Moot Hall 210, or download from www.buffalostate.edu/registrar/documents/transcript.html.

Transcripts will not be furnished for students who have incurred a financial obligation to the college.

Transcript requests sent by mail must include the student's name, current address, Banner ID or social security number, dates of attendance, graduation date (if applicable), name and address of the party to whom the transcript is to be sent, the student's signature authorizing release of the transcript, and a \$5 check or money order payable to Buffalo State College. All checks or money orders must include the last four digits of the student's Banner ID number or social security number.

Transcript requests by telephone cannot be honored. Requests are filled in the order they are received. Sufficient time is necessary for processing. Requests for transcripts should be made well in advance (usually at least two weeks) of the date needed.

Unit of Credit

The credit hour is the unit of course credit. It represents completion of one 50-minute class period per week for one semester. A course having three class periods a week will earn 3 credit hours. Studio, laboratory, and shop classes usually earn 1 credit for each two hours of attendance. The college expects student preparation of two hours for each hour in class.

Student Complaints, Grievances, and Appeals

Buffalo State complies with New York State Education regulations requiring that campuses have procedures in place for filing complaints and seeking resolution of perceived problems.

Academic Appeals: Waiver of Academic Regulations

Students are expected to adhere to all regulations of the college. However, unusual and extenuating circumstances may warrant a modification of certain regulations.

Students should not request a waiver of any regulations without very strong evidence to justify the waiver. Requests for waivers are made by completing an Academic Appeals Petition in the Academic Standards Office, Twin Rise 100.

The assistant dean for University College/director of Academic Standards, makes decisions on requests for waivers that do not relate to a student's major after consulting with the Academic Appeals Committee. The

assistant dean's decision is final. A minimum of one month is necessary to process academic appeals.

Decisions on requests for a waiver related to a student's major are made by the appropriate department chair in accordance with procedures established by the department or area faculty.

Student Complaints Regarding Discrimination

If the complaint involves alleged harassment or discrimination based on race, sex, ethnicity, national origin, sexual orientation, religion, age, disability, or marital or veteran status, the student should use procedures administered through the Equity and Campus Diversity Office, Cleveland Hall 415. Acts of discrimination should be reported immediately to this office for confidential discussion of the alleged acts. Students have 45 days from the alleged act of discrimination or 45 days after receipt of a grade to file a complaint. A copy of the procedures may be obtained from the Equity and Campus Diversity Office.

Student Complaints Regarding Nonacademic Issues

If the complaint involves nonacademic issues, the student should deal with procedures administered by the Dean of Students Office, Campbell Student Union 306. However, students are encouraged to seek resolution of the perceived problem directly in the unit in question before initiating processes that are more formal.

Student Complaints Regarding Academic Issues

The procedures outlined in the next section pertain to complaints about academic issues other than those dealing with waiver of college wide academic regulations or graduation issues, which are addressed by petitions to the Academic Appeals Committee. The college seeks to resolve student grievances as promptly and informally as possible. No adverse action will be taken against any student initiating a complaint.

Students who feel aggrieved regarding any aspect of the academic program have a right to request a resolution by bringing the matter to the attention of the appropriate college personnel. The academic appeals process regarding a waiver of academic regulations is outlined in the Waiver of Academic Regulations section. If the perceived problem pertains to a grade or the conduct of a particular course, students should follow the Student Academic Grievance Procedures explained below.

Student Academic Grievance Procedures

The procedures that follow pertain to alleged violations or misapplication of college and/or course policies. They are also directed at a student grievance alleging that the student has been treated unfairly, in violation of established academic policy or practice. These procedures reflect the college's commitment to a fair and prompt resolution of student academic grievances.

These procedures begin with an informal process, but include a formal process that centers on hearings and recommended resolution of the grievance in a way that maximizes the opportunity for a full and impartial solution. Request to waive or otherwise alter college academic

policies shall continue to be the province of the Academic Appeals Committee (see Waiver of Academic Regulations section).

The procedures below do not deal with grievances that are based on issues of sexual harassment or discrimination. Such grievances are handled through the Equity and Campus Diversity Office. Similarly, complaints that deal with other nonacademic issues are administered by the Dean of Students Office (see previous section).

For academic grievances, students are advised to retain all documentation from the course, including (but not limited to) the syllabus, tests, quizzes, papers, and any graded evaluations. These materials are required to substantiate any grievance.

1. *Jurisdiction*

A grievance shall include, but not be restricted to, a complaint by a student:

- a. That college regulations and/or policies have been violated or misapplied to him or her.
- b. That he or she has been treated unfairly, defined in terms of established academic policy or practice governing or affecting students at the college.

2. *Time Limit*

- a. At the informal level before the fifth week of the following semester.
- b. At the formal level before the 10th week of the following semester.

3. *Grievance Resolution Process*

The process includes the possibility of hearings at two levels: the department and the school.

- a. At the department level, a student with a complaint should attempt to resolve the complaint informally with the faculty or staff member involved. The assistance of the chair may be sought to resolve the dispute to the satisfaction of both parties. A student must initiate the process no later than five weeks into the following semester. The student who is not able to achieve resolution with the instructor may initiate a formal grievance or grade appeal process no later than 10 weeks into the following semester by preparing a written statement, which includes:
 1. A statement of the case in detail.
 2. All information about the conference with the instructor.
 3. A statement of the reasons the student believes he or she is aggrieved or, in the case of a grade, why it should be reconsidered.
 4. All relevant supporting materials, which should be identified and listed in an index.

The student shall submit complete copies of the written statement and attachments to the chair of the department and the faculty member identified in the grievance. The chair shall carefully review the statement, confer with the student and instructor, and attempt to reach a resolution of the dispute. The chair may ask members of the department to serve as a committee to review the materials and assist him or her in reaching a decision. The chair's response must be made

within 10 days of the date of the student's request.

In conformance with state regulations, the department shall maintain adequate documentation about each formal complaint and its disposition for at least six years after final disposition of the complaint. If the department chair is the party against whom the grievance is brought, the student should initiate a review at the dean's level, which follows.

- b. If the matter is not resolved to the student's satisfaction at the departmental level, he or she may request a hearing at the school level by writing to the dean of the school and forwarding the documentation to that office. The request must be made within 10 academic days of the receipt of the recommendation of the department chair.

The dean or designee shall convene a three-person committee drawn from a panel of available faculty within 10 days. Such committee shall include one faculty member from the department in which the faculty member resides. Furthermore, after the committee is constituted, the faculty member and the student have the right to review the committee membership and request alternate members in the event it is believed a member of the committee is not neutral. The committee shall meet and review the materials presented and solicit a response from the instructor to each count of the student's case. In the case of a grade appeal, the committee will familiarize itself with the standards and objectives of the course and evaluative material presented. Concerns shall be limited to consideration of the fairness of the application of the standards and objectives, and whether the standards and objectives were made known to the student in a reasonable manner. The difficulty of the standards shall not be an issue.

The burden of proof shall be on the student, who may be asked to appear before the committee.

In the case of a grade appeal, if the majority of the committee feels no case can be made, the original grade will remain. If it finds that the standards and objectives were not reasonably known to the student or were unfairly applied, it may recommend a different grade and give its reasons for so recommending. The committee shall report its findings in writing to the student, the instructor, and the dean.

If the panel recommends a different grade, the instructor shall have 10 working days from receipt of the panel's report to inform the dean of the school of the intent to change the grade. If necessary, the dean may direct that the grade be changed. A change of grade shall not be interpreted as an admission of unfairness in grading.

In the case of a grievance, if the majority of the committee members adjudge the grievance to be without foundation, written notification of their findings will be forwarded to the student, the instructor, and the dean of the school. If, in the

judgment of the committee, there is a basis for the grievance, a written report will be forwarded to the dean of the school with specific recommendations for redress. Copies shall be forwarded to the student and the instructor.

The dean of the school will notify all parties of his or her final decision regarding the grievance within 10 working days of receipt of the committee's findings and recommendations.

In conformance with state regulations, the dean's office shall maintain adequate documentation about each formal complaint and its disposition for at least six years after the final disposition of the complaint.

4. *Committees*

Committee members shall be drawn from a list of faculty nominated by departments. In naming the committee to hear a grievance, the dean shall take care to ensure that no member has an interest in the case being heard.

5. *Confidentiality*

Once the grievance committee has been convened to hear a complaint, principals and committee members shall have the obligation to maintain the confidentiality of the proceedings and of all materials presented.

6. *Review*

This procedure must be reviewed after two years. The review process should identify any irregularities in grade changes. To facilitate this review, a copy of all documentation/findings at the formal level shall be retained in the department office.

Complaints to State Education Department

Any individual who continues to feel aggrieved after pursuing the options outlined previously, is unable to resolve the problems, or believes the institution has not properly addressed the concerns may file a written complaint with one of the following:

State University of New York
Central Administration
State University Plaza
Albany, NY 12246

New York State Education Department
Office of College and University Evaluation
Education Building
5 North Mezzanine
89 Washington Avenue
Albany, NY 12234

Middle State Commission on Higher Education
3624 Market Street
2nd Floor West
Philadelphia, PA 19104

Students Unable to Attend Classes on Certain Days Because of Religious Beliefs

1. No person shall be expelled from or be refused admission as a student to an institution of higher education because he or she is unable, due to religious

beliefs, to register for or attend classes, or to participate in any examination, study, or work requirements on a particular day or days.

2. Any student in an institution of higher education who is unable, because of his or her religious beliefs, to attend classes on a particular day or days shall, because of such absence on the particular day or days, be excused from any examination or any study or work requirements.
3. It shall be the responsibility of the faculty and the administrative officials of each institution of higher education to make available to each student who is absent from school, because of his or her religious beliefs, an equivalent opportunity to register for classes or make up any examination, study, or work requirements that he or she may have missed because of such absence on any particular day or days. No fees of any kind shall be charged by the institution for making available to the said student such equivalent opportunity.
4. If registration, classes, examinations, study, or work requirements are held on Friday after 4 p.m. or on Saturday, similar or makeup classes, examinations, study, or work requirements shall be made available on other days, where it is possible and practical to do so. No special fees shall be charged to the student for these classes, examinations, study, or work requirements held on other days.
5. In effectuating the provisions of the Education Law, it is expected that faculty and administrative officials will exercise the fullest measure of good faith. No adverse or prejudicial effects shall result to any student for availing himself or herself of the provisions of this section.
6. Any student who is aggrieved by the alleged failure of any faculty or administrative official to comply in good faith with the provisions of this section shall be entitled to maintain an action or proceeding in the supreme court of the county in which such institution of higher education is located for the enforcement of his or her rights under this section.
7. The term "religious beliefs" shall mean beliefs associated with any corporation organized and operated exclusively for religious purposes, which is not disqualified for tax exemption under Section 501 of the United States Code.
8. At Buffalo State College, we sharpen the mandate of the state and endorse the policy that prohibits administering evaluative examinations on Rosh Hashanah, Yom Kippur, and Good Friday.

Notification of Rights under the Family Educational Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights include:

1. The right to inspect and review the student's education records within 45 days of the day the college receives a request for access. A student should submit to the registrar, dean, head of the academic department, or

other appropriate official a written request that identifies the record(s) the student wishes to inspect. The college official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the college official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.

2. The right to request the amendment of the student's education records that the student believes are inaccurate, misleading, or otherwise in violation of the student's privacy rights under FERPA. A student who wishes to ask the college to amend a record should write the college official responsible for the record, clearly identify the part of the record the student wants changed, and specify why it should be changed.

If the college decides not to amend the record as requested, the college will notify the student in writing of the decision and the student's right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

3. The right to provide written consent before the college discloses personally identifiable information from the student's education records, except to the extent that FERPA authorizes disclosure without consent.

The college discloses education records without a student's prior written consent under the FERPA exception for disclosure to school officials with legitimate educational interests. A school official is a person employed by the college in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the college has contracted as its agent to provide a service instead of using college employees or officials (such as an attorney, auditor, or collection agent); a person serving on the College Council; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks; and National Student Clearinghouse officials. A school official has a legitimate educational interest if the official needs to review an education record to fulfill his or her professional responsibilities for the college. Upon request, the college also discloses education records without consent to officials of another school in which a student seeks or intends to enroll.

Buffalo State hereby designates the following categories of student information as public or directory information. Such information may be disclosed by the institution for any purpose, at its discretion.

- a. Name, address, electronic mail address, telephone listing, dates of attendance, enrollment status (e.g., undergraduate or graduate; full-time or part-time), class level, and academic adviser.
- b. Most recent educational agency or institution attended; major field of study; degrees, honors, and awards received.

- c. Participation in officially recognized activities and sports, weight and height of members of athletic teams, date and place of birth, photographs.

Currently enrolled students may withhold disclosure of any category of information under the Family Educational Rights and Privacy Act of 1974. To withhold disclosure, written notification must be received by September 15 in the Registrar's Office, Moot Hall, Buffalo State, 1300 Elmwood Avenue, Buffalo, NY 14222-1095. Nondisclosure of information will commence thereafter and be effective until September 14 of the following year. Written notification to withhold disclosure must be made each academic year.

Buffalo State assumes that failure on the part of any student to specifically request the withholding of categories of directory information by the deadline date indicates individual approval for disclosure.

4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by Buffalo State to comply with the requirements of FERPA. The name and address of the office that administers FERPA is Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202- 5901.

Assessment

Buffalo State is committed to continuous improvement through assessment. Periodically students are expected to participate in assessment activities designed to elicit information that serves as a basis for quality improvement in our programs and services.

FINANCES

Electronic bills (eBills) are now the exclusive billing method for all Buffalo State student account balances. Paper bills are no longer mailed to students. Students should print their QuikPAY statement if needed. All e-billing notifications will be sent to your Buffalo State student email address.

Students are required to pay tuition and fees upon receipt of invoice with cash, credit card, or through a deferred payment plan. Deductions will be made under various financial aid programs upon approval of the Financial Aid Office.

Room and board charges must be paid prior to arrival on campus. These charges are usually included in the bill covering tuition and fees. **The rates listed below are subject to review and may change without prior notice.** Further information concerning payment is available in the Student Accounts Office, Moot Hall 260, (716) 878-4121, www.buffalostate.edu/studentaccounts.

Explanation of Terms

Full time—A student registered for 12 or more credit hours a semester is considered a full-time student.

Part time—A student registered for 1 to 11 credit hours a semester is considered a part-time student.

Semester—An academic year at the college consists of a fall semester and a spring semester. Yearly expenses are twice the semester rate.

Resident (for tuition purposes)—As established by the State University Board of Trustees, an individual university registrant is considered a New York State resident and is charged in-state tuition rates when that individual is determined to have a permanent and principal home in New York State for 12 months prior to registration. Those who do not meet this requirement are presumed to be out-of-state residents and are charged out-of-state tuition rates unless satisfactory proof is presented to show that domicile in New York State has, in fact, been established.

Tuition

Tuition for full-time Buffalo State College graduate students is \$4,935 per semester for New York State residents and \$9,175 per semester for out-of-state students. Tuition for part-time graduate students is \$411 per credit

hour for New York State residents and \$765 per credit hour for out-of-state residents.

Tuition for Undergraduate Coursework

Matriculated (degree-seeking) graduate students pay graduate tuition rates for any undergraduate coursework taken, regardless of its applicability to the student's degree program.

Postbaccalaureate, premajor, undeclared, and nondegree students are charged undergraduate tuition rates for undergraduate coursework and graduate tuition rates for graduate coursework. Full-time registration cannot be less than \$2,935 or more than \$4,935 (New York State resident tuition rates).

Fees

Graduate Student Fee

A mandatory graduate student fee of \$26.64 per semester for full-time students and \$2.22 per credit hour for part-time students is collected from matriculated students to fund the Graduate Student Association.

College Fee

A mandatory college fee of \$12.50 per semester for full-time students and \$.85 per credit hour for part-time students is collected by all units of the State University system to finance the operating budget.

Health Fee

All full-time students are required to pay a \$138.75 per semester health fee; part-time students pay \$11.60 per credit hour per semester. This fee provides basic medical assistance to students on campus through the Weigel Health Center. A mandatory health fee is collected by all units of the State University system.

Waiver for off-site distance-education students

Students enrolled exclusively in off-campus or distance learning courses with no on-campus meetings are eligible for a waiver or refund of the student health fee (not the mandatory health insurance), provided they are not concurrently enrolled in on-campus courses. If a student is enrolled in both on-campus and off-campus or distance learning courses, the health fee applies to all courses for which the student is registered. The Weigel Health Center

is responsible for processing health fee waivers. More information and refund forms are available at www.buffalostate.edu/weigel or contact the Weigel Health Center at (716) 878-6711.

Technology Fee

A mandatory technology fee of \$163.75 per semester for full-time students and \$13.70 per credit hour for part-time students is collected to provide enhancements to campus technology.

Parking Fee

Students who wish to park on campus pay \$70 per academic year and \$10 for summer-only permits.

Room and Board

Residence hall room rates are \$3,362 per semester for a double-occupancy room. Room rental does not include telephone service, which students arrange with the telephone company. Student Apartment Complex bedrooms start at \$4,805 per semester; Moore Complex starts at \$3,787 for double occupancy. Meal plan rates vary, starting at \$1,621 per semester.

Miscellaneous Expenses

Miscellaneous expenses will vary depending on the student's academic program, personal spending habits, and commute distance.

Mandatory Student Health Insurance

The Buffalo State College student health insurance plan has been developed especially for Buffalo State College students. The plan provides coverage for sickness and injuries that occur on and off campus and includes cost-saving features to keep the coverage as affordable as possible.

All full-time domestic undergraduate and graduate students who attend Buffalo State College are eligible and automatically enrolled in the Buffalo State College student health insurance plan unless an online waiver providing proof of health insurance coverage is completed by the applicable deadline.

Part-time domestic students are eligible to purchase this coverage, during open enrollment; however, they are not automatically enrolled in the plan. Spouse and dependent coverage is available.

Please visit www.buffalostate.edu/weigel for enrollment information or to complete the online waiver or contact the Weigel Health Center at (716) 878-6711.

International students must purchase the SUNY International Health Insurance or have comparable coverage.

International Student Health Insurance

All international students must enroll in a group health insurance plan available through Buffalo State College. If

students carry a health insurance policy that provides coverage comparable to the SUNY-mandated health insurance, it may be accepted as an alternative, if approved by the director of the Weigel Health Center. The premium was \$1,113.00 per year for August 2013 through August 2014. There also are rates for coverage during any semester. The premium is subject to change each year. All American students studying abroad must carry this insurance.

Summer Session Tuition and Fees

Tuition and fees are charged at the credit-hour rate for all courses taken during Summer Session.

An Estimated Budget

Estimated college costs can be found in the following table for the 2013–2014 academic year. Costs may vary according to a student's place of residence, academic program, and individual needs. All tuition rates, fees, and fines are subject to change without notice as directed by the State University Board of Trustees.

Estimated Budget Per Semester for 2013–2014 New York State Resident

	Commuter	Resident
Fixed costs (per semester)		
Tuition	\$4,935.00	\$4,935.00
Fees	\$341.64	\$341.64
Total fixed costs	\$5,276.64	\$5,276.64
Variable costs (per semester)		
Books and supplies	\$510.00	\$510.00
Maintenance at home	\$2,282.00	—
Room	—	\$3,362.00
Board	—	\$2,282.00
Miscellaneous expenses	\$515.00	\$515.00
Transportation	\$566.50	\$566.50
Total variable costs	\$3,873.50	\$7,235.50
Estimated total costs/semester	\$9,150.14	\$12,512.14
Estimated annual costs (two semesters)	\$18,300.28	\$25,024.28

Automatic Payment Plan

The college has established a payment plan to assist students and their families in meeting the cost of tuition, fees, and room and board. Information and online enrollment are available from the Student Accounts Web site at www.buffalostate.edu/studentaccounts.

Refund Policies

All financial refunds are sent to students in the following order:

1. Transferred electronically to the student's bank account if a direct deposit application is on file in the Student Accounts Office;

2. Mailed to the permanent address of record on file in the Registrar's Office.

Graduate students are responsible for informing the Graduate School of any address change. Send e-mail to gradoffc@buffalostate.edu, or download a data change form at www.buffalostate.edu/registrar/forms.xml and fax it to (716) 878-5630.

Tuition

Tuition refunds will be processed only if the student officially withdraws through the Registrar's Office. Students given permission to cancel their registration are responsible for payment of tuition according to the following schedule:

Date of Course Withdrawal	Tuition Liability
<i>Spring and Fall Semesters</i>	
First week of class*	0%
Second week	30%
Third week	50%
Fourth week	70%
After fourth week	100%
<i>Summer Sessions</i>	
First two days of Session A, B, or C	0%
Third day through end of first week of Session A or B	50%
Third day through end of first week of Session C	65%
Second week of Session A, B, or C	100%

*The first week of class ends on Saturday of the week in which classes are scheduled.

Room Rentals

During the fall and spring semesters, a refund can be made only if a student withdraws due to circumstances beyond his or her control. Questions covering refunds are addressed in the residence hall license.

Board Charges

Refunds are calculated according to college and federal regulations and guidelines, less a \$20 service charge for processing. No refunds are given after the drop/add period at the start of each semester. Contact the Buffalo State Campus Dining Services Office, Campbell Student Union 223, for additional information.

College Fee

Health Fee

Technology Fee

These fees are refunded only when registration is canceled during drop/add period.

Parking Fee

The parking fee is refundable within the first two weeks of class upon surrender of the parking permit.

Service Fees

The following fees are administered to comply with mandatory State University of New York policy:

Late Registration Fee

Registrations on "late registration day" (the first day of classes) or later are charged a mandatory \$40 late registration fee that cannot be waived or deferred. Exceptions are registrations for graduate workshops, independent study, special projects, contracts, and courses requiring performance auditions. Registrations for independent study, special projects, or contracts turned in after the second week of classes that generate the only registration for a student also are assessed the \$40 late fee.

Billing Fee

A billing fee of \$30 is assessed to each delinquency notice sent by the college. Late filing of financial aid does not waive this fee. All financial aid should be filed by March 1.

Late Payment Fee

A \$30 fee is charged if the semester bill is not paid by the due date.

Late Drop/Add Fee

A \$20 late drop/add fee is charged for each transaction after the first week of classes. Independent study, special projects, or contracts added after the second week of classes also are charged this fee.

Academic Transcript Fee

There is a \$5 fee for each transcript request.

Returned-Check Fee

A \$20 fee is charged for each check returned by the bank or any declined credit card transaction. The fee is nondeferrable and cannot be waived. An additional billing fee is charged on any transaction covering a course and/or room registration. If payment is not received within 10 days from the date of notification, the account is referred to the New York State Attorney General's Office for collection and handling.

Graduate Admission Application Fee

A nonrefundable \$65 processing fee (for first-time applicants) must accompany the application for admission to a graduate program at Buffalo State. Payment of the fee is not contingent on any action or decision the college may render on the application, or on any subsequent decision by the applicant to withdraw the application.

New York State Debt Collection Mandate

The State University reserves the right to withhold academic records from any student who has not satisfied or made provision to satisfy all obligations incurred in the State University system. Unpaid accounts are, in due course, turned over to an external collection agency. Collection costs are added to the amount of indebtedness.

Teacher Waiver Certificates

Supervising (critic) teacher tuition waiver certificates may be redeemed in accordance with the regulations printed on the certificate. A student must be a full-time teacher in the district to use a waiver certificate. A certificate may be redeemed for any term scheduled to begin after the effective date but before the expiration date on the certificate.

Waivers may be transferred between professional employees of the same school district. Transferred certificates must be signed by the district administrator.

If a student withdraws from a course at a time when partial or full tuition liability exists, the waiver certificate is forfeited. Waiver certificates do not cover college fees, which must be paid by the student. Transferred waivers are not accepted after the fourth week of classes. For Summer Session, transferred waivers are not accepted after the first registration date of any session.

FINANCIAL AID

The goal of the Financial Aid Office is to assist students with securing sufficient funding to cover their educational expenses. According to our records, the vast majority of graduate students receive some form of financial aid (federal; state; institutional; private) while attending SUNY Buffalo State.

Staff members in the Financial Aid Office, Moot Hall 230, are available year-round to assist students and their families with the financial aid application process. Contact the Financial Aid Office at (716) 878-4902 and/or finaid@buffalostate.edu. Additional information is available on-line at www.buffalostate.edu/financialaid.

Application Procedures

There are multiple steps in the financial aid application process. Students must file the Free Application for Federal Student Aid (FAFSA) after January 1st of each year to apply for aid for the upcoming year.

Federal Student Aid

The Free Application for Federal Student Aid (FAFSA) can be found on-line at www.fafsa.ed.gov. To expedite this process a student will need to have a federal pin number. Pin numbers can be requested at www.pin.ed.gov. The pin number serves as the individual's electronic signature on official financial aid documents.

After submitting the FAFSA, a student will receive a Student Aid Report (SAR) from the federal processor. This form contains the data the student entered on the FAFSA. The Department of Education will send it to the student either by e-mail (three to five days) or postal mail (two to three weeks). Students must review the SAR carefully for errors (the form highlights items that may need attention) and follow directions for making corrections. Students are encouraged to submit corrections promptly to avoid long delays in processing of their application. Students should retain a copy of the SAR for their records.

Graduate Tuition Scholarship Opportunity Program (EOP, SEEK, HEOP)

The State University of New York offers a Graduate Tuition Scholarship Opportunity Program to eligible

students who are New York State residents and graduates of SUNY's Educational Opportunity Program (EOP); City University of New York's Search for Education, Elevation, and Knowledge (SEEK) Program; or the Higher Educational Opportunity Program (HEOP) conducted by private colleges. Applicants must provide written verification of participation in EOP, HEOP, or SEEK.

For additional information, contact the Graduate School, Cleveland Hall 204, (716) 878-5601, www.buffalostate.edu/graduateschool/scholarships.xml.

SUNY Graduate Diversity Fellowship Program

The State University of New York offers a fellowship program to recruit, enroll, and retain students who will contribute to the diversity of the student body in SUNY's graduate and professional programs. Applicants must be U.S. citizens or permanent residents and pursuing their first master's degree. A student who is awarded a Graduate Diversity Fellowship must enroll full time (9 graduate credit hours in his or her degree program) each semester to receive a stipend (currently \$7,000 annually) and full tuition scholarship. College fees are paid by the student. Fellows must maintain a 3.0 cumulative GPA each semester to continue to receive funding and may receive funding for up to three semesters. Fellowships are available for fall and spring semesters only. For details and an application, contact the Graduate School or go to www.buffalostate.edu/graduateschool/fellowships.xml.

Graduate Assistantships

Graduate assistantships are available through various academic departments and administrative offices on campus. Duties of graduate assistants consist of nonteaching functions such as grading papers, monitoring exams, assisting in administrative assignments, or participating in research projects.

Assignments range from 12 to 20 hours per week and provide stipends from \$3,000 to \$6,000 per academic year. A graduate assistant may receive a tuition award and a stipend. Graduate assistants are considered full time when registered for 9 graduate credits per semester. A tuition scholarship, if awarded, is for a maximum of 9 graduate credits each fall/spring semester. Stipends and/or tuition awards do not cover college fees, which are the responsibility of the student.

Graduate students appointed to an assistantship must be in good academic standing in a degree program with a minimum GPA of 3.0 and maintain a full-time registration (nine credit hours) concurrent with the appointment.

Application forms may be obtained from the department or office offering the assistantship. A list of available assistantships can be found at <https://jobs.buffalostate.edu/>.

Military, Veteran, and Dependent Benefits (Location: Cleveland Hall Room 210)

Military, Veterans, and/or Dependents (i.e., Spouse/Child) may be able to receive aid for approved postsecondary study. To find out what your eligibility is, please contact the Veteran and Military Services at (716) 878-5907.

Aid for Students with Disabilities

Students with disabilities pursuing higher education may be eligible for assistance through the state Adult Career and Continuing Education Services – Vocational Rehabilitation (ACCES-VR) or Office of Children and Family Services, Commission for the Blind and Visually Handicapped (CBVH). Criteria and funding vary. Applications and eligibility requirements may be obtained at the Buffalo-area offices or at your local area offices for ACCES-VR and CBVH.

Aid to Native Americans

The U.S. Bureau of Indian Affairs offers need-based grants for college study to applicants who are enrolled tribal members of an American Indian, Eskimo or Aleut tribe, band, or group recognized by the Bureau of Indian Affairs. An application is necessary for each year of study and must be accompanied by an official needs analysis from the Financial Aid Office after submission of the Free Application for Federal Student Aid (FAFSA).

First-time applicants also must submit tribal enrollment certification from the bureau, agency, or tribe that records enrollment for the tribe. Applications are available from the education office of the tribe, band, or group with which you are affiliated or possess membership. For further information, contact the Bureau of Indian Education at (202) 208-6123 or <http://www.bie.edu>.

New York State also offers grants to Native Americans who are members of one of the Native American tribes located on reservations within New York State. Applications and program details may be obtained from the Native American Indian Education Unit, State Education Department, Room 461EBA, Albany, NY 12234, (518) 474-0537.

Summer Session Aid

Summer financial aid is available at Buffalo State. Students wishing to apply for summer financial aid must complete

the supplemental Summer Aid Application form that becomes available by early-April each year.

Since summer aid eligibility is dependent upon a student not having exhausted their eligibility during the fall and spring semesters. Therefore, it is advisable that students seek advice from the Financial Aid Office prior to registering for classes.

Eligibility for Financial Aid

Eligibility for financial aid is based on many factors, including but not limited to: citizenship status, matriculation status, enrollment status and satisfactory academic progress. In accordance with federal regulations, all students (except Buffalo State graduates) are required to submit a final transcript with a degree posted to the Graduate School by the start of their graduate work for financial aid eligibility.

Matriculation

To be eligible for federal financial aid, a student must be a U.S. citizen or eligible non-citizen and matriculated into a degree or certificate program. Visiting students and special-status students who have been allowed to take courses but have not been formally accepted by the college are considered non-matriculated and are ineligible for federal financial aid. Graduate students enrolled in preparatory coursework are eligible for loans for one consecutive 12-month period (not per program) beginning on the first day of the loan period. Preparatory coursework does not include courses taken solely to raise one's GPA to meet graduate admission standards and does not include coursework in a graduate degree program.

Enrollment Status

Students must be enrolled at least half time (6 credit hours) in course(s) required for their degree program to be eligible for federal financial aid. Students may be eligible for a TEACH grant when enrolled less than half time.

Satisfactory Academic Progress - Federal Aid

Satisfactory Academic Progress (SAP) is the process used to determine if a student is making acceptable progress toward a degree or certificate. At the end of each payment period (semester), a review of a student's progress is conducted. A student's failure to meet the Satisfactory Academic Progress standards (for all terms enrolled, not just those terms that aid was received) may result in loss of federal aid eligibility.

An electronic notification detailing the student's SAP status will be sent to the student's Buffalo State email address; if unavailable a hard copy notification will be mailed to the permanent address on file.

The following Satisfactory Academic Progress (SAP) standards must be met:

Cumulative Grade Point Average (GPA) - Qualitative Component :

- A student must have a minimum cumulative GPA of 3.0 (Buffalo State's GPA only).

Minimum Pace rate for Attempted Credit Hours - Quantitative Component:

- A student must complete at least two-thirds (66.67%) of all cumulative attempted credit hours.
- The following designations are considered to be attempted credit hours but are not considered to be successfully completed: I, IP, N, X, W, U, E and F grades.
- Transfer credit hours posted to the official transcript record will be counted as attempted credit hours.
- All courses removed through the academic clemency process will be counted as attempted credit hours. On a case-by-case basis, academic clemency may be subject to appeal.
- Readmission to the college after an absence does not automatically mean reinstatement of aid eligibility.

Repeated Courses

Courses that are repeated to improve a grade are counted as attempted each time they are taken but are only counted as completed once.

Financial Aid Warning

A student who fails to maintain cumulative GPA or meet Pace requirements is placed on Financial Aid Warning as long as it is mathematically possible to recover in one payment period. There is no action required by the student; federal aid eligibility continues for one payment period/semester.

Appeal Process for Special Circumstances

If the student is still not making satisfactory academic progress after the Financial Aid Warning semester, he or she is ineligible for federal financial aid until the required standard is achieved.

A student has a right to appeal the loss of federal financial aid eligibility if mitigating circumstances (events totally beyond the student's control) existed. All SAP Appeals should be submitted to the Academic Standards Office, Twin Rise 100.

Financial Aid Probation

A student who fails to maintain the cumulative GPA and/or meet the Pace rate standard is placed on Financial Aid Probation only if the student has successfully appealed. The student will continue to receive federal financial aid for one payment period/semester. The student must meet SAP at the end of the probationary period or comply with

the requirements of an Academic Plan (a contractual agreement designed to ensure that the student will make SAP by a specified point in time).

If the student is still not making Satisfactory Academic Progress or fails to meet the Academic Plan requirements after the probationary period, he/she will become ineligible for federal financial aid until all SAP standards are successfully met.

Award Notification

After you are accepted, the Financial Aid Office will send a SUNY Award Letter detailing the aid you are eligible to receive based on program eligibility requirements. Students must accept, revise or decline award(s) by the prescribed deadline date. Failure to accept aid by the deadline date may result in the loss of some types of financial aid.

The Financial Aid Office will send initial paper SUNY Award Letters to all new students. All students are responsible to monitor their campus e-mail and their financial aid status on-line via the Banner Self-service site.

Continuing students will receive their notification via campus e-mail directing them to view their awards on-line at the Banner Self-service site. All students are given the opportunity to reduce or decline any award offered. Some aid programs require additional steps to complete the application process.

Eligibility for Federal Work-Study

The Federal Work-Study program provides employment opportunities in various on-campus offices and in off-campus community service agencies. Students who qualify for the Federal Work-Study program will be paid at an hourly rate and receive bi-weekly paychecks for the hours worked. Federal Work-Study will not be credited to your account. It is the responsibility of the student to secure employment. Federal Work-Study positions are limited; therefore, there is no guarantee of eligibility from one year to the next. Students are encouraged to complete the FAFSA by March 1st to receive full consideration to participate in the Federal Work-Study program.

Eligible students will receive a letter before the start of the semester with details regarding the steps to log on to the Financial Aid Web site to research available positions. Students who do not qualify for Federal Work-Study or who are not successful in securing a job may be able to secure employment with the assistance of the Career Development Center in Cleveland Hall 306.

ELIGIBILITY FOR THE TEACH GRANT

TEACH Grant eligibility is determined after the fall or spring semester starts. Those students who meet the eligibility requirements will be invited to apply for the TEACH Grant. Students must complete Entrance Counseling and an annual Service Agreement.

In exchange for receiving a TEACH Grant, students must agree to serve as a full-time teacher in a high-need field in a public or private elementary or secondary school that serves low-income students.

A TEACH Grant recipient must teach for at least four academic years (within eight calendar years). If a student fails to complete his/her service obligation, all amounts of TEACH Grants that were received will be converted to a Federal Direct Unsubsidized Loan. You must then repay this loan to the U.S. Department of Education. You will be charged interest from the date the grant(s) was disbursed. Note: TEACH Grant recipients will be given a 6-month grace period prior to entering repayment if a TEACH Grant is converted to a Federal Direct Unsubsidized Loan.

Eligibility for Federal Direct Unsubsidized Loan

Federal Direct Unsubsidized Loan is a low-interest loan for eligible students to help cover the cost of higher education. Students are not required to demonstrate financial need to receive a Federal Direct Unsubsidized Loan. Students can pay the interest while in school and during grace periods and deferment or forbearance periods, or students can allow it to accrue and be capitalized (that is, added to the principal amount of your loan). Students that choose not to pay the interest as it accrues will have an increased total amount to repay because interest will be charged on a higher principal amount.

If you are a first time Federal Direct Loan borrower you must sign a Master Promissory Note. The electronic Master Promissory Note (e-MPN) is the agreement to pay back any Direct Loans. The e-MPN is available on-line.

On-line Entrance Counseling is required for first-time Direct Loans borrowers. Entrance Counseling will educate students on the rights and responsibilities associated with receiving funds that must be repaid. To satisfy your on-line Entrance Counseling requirements, students must complete the tutorial and pass a quiz. Failure to comply with this

requirement will prevent the disbursement of the student's loan proceeds.

The U.S. Department of Education issued PIN is required to complete Entrance Counseling and the e-MPN.

ELIGIBILITY FOR FEDERAL DIRECT PLUS LOANS FOR GRADUATE STUDENTS

Graduate students can borrow a low, fixed interest rate guaranteed Federal Direct PLUS Loan up to the cost of attendance less any other aid received to help cover educational expenses. This loan requires the student to be credit-worthy.

Buffalo State must determine the student's maximum eligibility for the Federal Direct Unsubsidized Loan before a student can receive a Federal Direct PLUS Loan.

The first time a graduate student applies for a Federal Direct PLUS Loan, he/she will need to complete a Federal Direct PLUS e-MPN. This e-MPN is separate from the Federal Direct Unsubsidized Loan e-MPN.

Overawards

Each year, a number of students receiving aid are overawarded. This occurs, in part, when students are awarded other forms of assistance (e.g., scholarships; tuition waivers; loans) from outside agencies after they have accepted their award package. Students may have portions of their federal aid reduced or canceled as a result of overawards, which may leave an outstanding balance on their college accounts. Students should notify the Financial Aid Office in writing immediately if they receive additional funds that were not included in their award package.

Withdrawal from Classes

If a student who has received financial aid funds withdraws, takes a leave of absence, or drops out during a semester, a portion of the financial aid may need to be repaid to the granting institution. In some situations, students may have incurred full liability for charges but only have "earned" a portion of the aid they were awarded. In such cases, the unearned portions of aid will be returned, but students will still owe the full balance to the college. Students who unofficially withdraw (i.e., stop attending classes without formally withdrawing from school) may also be subject to returning a portion of the aid they received. Students considering withdrawal should consult with staff in the Financial Aid Office prior to taking any actions.

Return of Title IV (R2T4) Funds

Federal regulations mandate a Return of Title IV Funds calculation when a student receiving Title IV financial aid (e.g. Direct Loans) completely withdraws. If a student never attends, ceases enrollment or withdraws from all courses in the semester and he/she received federal financial aid, the college must determine if these funds are required to be returned to the appropriate financial aid programs within forty-five (45) days.

R2T4 Calculation

The R2T4 calculation may result in a reduction of the student's federal loan(s) and grant(s) if he/she attended 60 percent or less of the semester. The R2T4 calculation is based on the following:

- The number of days the student attended
- The institutional charges assessed
- The total amount of federal Title IV aid awarded, accepted and or disbursed

As a result, the school and the student may be required to return any "unearned" federal aid received.

Unofficial Withdrawal

Federal Title IV financial aid is processed for a student under the assumption that the student will attend courses for the entire period for which the financial assistance is provided. A registered student who failed to earn a passing grade in at least one course is presumed to have "unofficially withdrawn" for federal Title IV financial aid eligibility purposes.

The Financial Aid Office will work with the student and his/her faculty members to ascertain official proof regarding the student's last date of attendance (known as the withdrawal date) for the semester and perform the R2T4 calculation to determine the "unearned" federal financial aid that must be returned to the designated program(s). The student will be notified by U.S. Postal mail regarding the results of R2T4 calculation.

Academic Withdrawal

While there is no academic penalty associated with the 'W' grade, there may be Financial Aid implications regardless of the reason (e.g. medical; etc.). Any student who received federal Title IV financial aid funding (e.g. Direct Loans) will have their eligibility recalculated in order to determine:

the amount of financial aid the student is eligible to retain
the amount of "unearned financial aid" that must be returned

Additionally, the calculation will be based on the earliest date documented that the student provided official notification of his/her intent to withdraw.

Withdrawal from Modular (Mini-Session/Term) Courses

A student who withdraws from a modular course(s) before the start of a future course within the same payment period (semester) will be considered as withdrawn for Return of Title IV (R2T4) purposes.

An exception is made if the student provides written notification affirming his/her intent to attend a future course (prior to the start of the course) within the payment period or the student provides affirmation of attendance by enrolling/registering in a future course within the same payment period after the original withdrawal date. Written notification MUST be received prior to the first day of the future course.

Notification of attendance in a future course must be made in writing by submitting the Affirmation of Future Attendance form to the Financial Aid Office, Moot Hall 230.

It remains the responsibility of the student to provide accurate and timely notification of future course attendance.

Unearned Aid

A determination regarding the percentage of the semester the student completed must be performed and this will reveal the percentage of the federal Title IV aid that the student has earned. The total amount of federal aid disbursed to the student, or that could have been disbursed to the student minus the amount of federal aid earned by the student equals the amount of federal loan(s) and grant(s) that is unearned and that must be returned: (688.22(e)).

Total Title IV Disbursable Aid
- (minus) Title IV Aid Earned

= Title IV Loan(s) and Grant(s) to be Returned

If the college is required to return any unearned aid, we will reduce or cancel the federal award(s), debit the student's account and return the unearned portion of aid to the U.S. Department of Education.

This adjustment may result in a balance due to Buffalo State College. It is the student's responsibility to repay the "unearned" portion of aid that was charged back to the student account. Students will receive notification of this action via a U.S. Postal letter and he/she will receive an updated student bill.

Post-Withdrawal Disbursement

A post-withdrawal disbursement of federal Title IV aid occurs when the amount of federal aid earned by the student is greater than the amount of the federal aid disbursed for the semester. A student eligible for a post-withdrawal disbursement will receive written notification from the college. Students receive a notification via U.S. Postal mail that they have the right to accept or decline, some, or all, of the offered post-withdrawal loan disbursement(s).

R2T4 Distribution of Financial Aid Refund

Refunds returned to the U.S. Department of Education on behalf of the student are distributed among the financial aid programs in the following order:

1. Federal Direct Unsubsidized Loan
2. Federal Perkins Loan
3. Federal Direct PLUS Loans for Graduate Students

Scholarships

Buffalo State offers scholarships to students demonstrating outstanding leadership qualities, academic abilities and/or financial need. Staff in the Financial Aid Office, Moot Hall 230 can assist students in locating scholarships offered by agencies not affiliated with Buffalo State. Students may also visit our Web site at www.buffalostate.edu/financialaid for scholarship information including application deadline dates.

SERVICES AND FACILITIES

Services and Facilities for Graduate Students

Buffalo State's impressive research, cultural, academic, athletic, and performing arts facilities offer unlimited learning and social opportunities for those enrolled in graduate studies. In addition, the college's professional staff and offices can assist with career planning, child care, computing, counseling, dining, health care, or living arrangements (on or off campus). Special services are available for minority students, students with disabilities, international students, and veterans.

Barnes & Noble at Buffalo State Bookstore

Campbell Student Union, (716) 878-5509
<http://buffalostate.bkstore.com>

The bookstore carries a wide range of merchandise, including textbook rental, new, used and digital textbooks; trade books; special-order books; emblematic clothing; art, school, and office supplies; greeting cards; gifts; and computer supplies. The store features Starbucks Café. The store accepts cash, personal checks, and credit cards. A bookstore deferment program is available. The bookstore is a service of Barnes & Noble College Bookstores Inc.

Burchfield Penney Art Center

Rockwell Hall, Third Floor, (716) 878-6011
www.burchfieldpenney.org

The Burchfield Penney Art Center at SUNY Buffalo State is the only museum dedicated exclusively to the art and design of Western New York. It serves as a resource for students, faculty, and the community. The center holds the world's largest collection of work by renowned American watercolorist Charles E. Burchfield (1893–1967) and more than 7,000 works by other important Western New York artists. The center is accredited by the American Association of Museums and is part of the Elmwood Museum District. Admission is free to students, faculty, and staff of the college.

Campbell Student Union

Student Life Office
Campbell Student Union 400, (716) 878-4631
www.buffalostate.edu/studentlife

The Campbell Student Union, located in the center of campus, houses an eclectic blend of student services,

activities, and recreation. The bookstore and Information Center are located in the union, as are the Offices of the Associate Vice President and Dean of Students, the Associate Vice President for Campus Life, Campus Dining Services, United Students Government, International Student Affairs Office, Student Life Office, and the campus radio station, WBNY-FM 91.3. The union offers a variety of programming space, dining services, Internet access, Java-U Café, ATM machines, and several informal lounge and study areas, as well as the recently renovated Residential and Retail Dining Services.

Campus Dining Services

Campbell Student Union 223, (716) 878-5214
www.bengaldining.com

Campus Dining Services, located in the Student Union, provides students with a variety of food choices. Meal plans are available for both resident and commuter students. Meal plans are convenient, flexible, and economical, and they are tax free and deferrable against financial aid. Vending machines are located throughout the campus.

Career Development Center

Cleveland Hall 306, (716) 878-5811
www.buffalostate.edu/offices/cdc

The Career Development Center (CDC) provides a full range of services for graduate students, including comprehensive career planning and job-search assistance. In addition to a Web site listing full-time, part-time, and summer jobs and internships, the CDC sponsors annual recruitment events, hosts on-campus interviewing, presents job search workshops, and maintains reference files. The CDC also houses the Volunteer and Service-Learning Center, where students can find community volunteer opportunities and can identify service-learning coursework options.

Campus Academy for the Scholarship of Teaching and Learning

South Wing 510, (716) 878-3292
www.buffalostate.edu/orgs/castl

Buffalo State is one of 12 international institutions selected as leaders in the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL). CASTL is a network of campuses around the world that provide structure and

support for faculty and staff to identify ways to enrich teaching and learning in higher education. The work of faculty involved in CASTL leads to relevant, meaningful, and educational experiences for students.

Center for Excellence in Urban and Rural Education

Caudell Hall 107, (716) 878-3610
www.buffalostate.edu/ceure

CEURE—Center for Excellence in Urban and Rural Education—is committed to the enhancement of high-need urban and rural schools through the recruitment, retention, and continuing education of highly qualified teachers, as well as the support of reform efforts and research about effective schools. To support educational reform and school improvement, CEURE partners with schools, community groups, foundations, and other institutions of higher education across Western New York.

CEURE offers a variety of programs and services to school partners and campus colleagues. Partnerships are developed in conjunction with our undergraduate and graduate teacher education programs and include such collaborative efforts as:

- Recruitment incentives for high-need areas and underrepresented constituencies.
- Specialized staff-development programs for teachers and administrators.
- Alternative certification opportunities for high-need subject-area teachers.
- Internship opportunities.
- Future and nascent teacher mentorship and support programs.
- School partnership projects that employ teacher education majors as tutors.
- Grant submission and program implementation.

Child Care Center (Buffalo State Child Care Center)

Campus West, (716) 878-5335
www.buffalostate.edu/offices/bscchild

The Buffalo State Child Care Center is open to the children of Buffalo State students, faculty, and staff. The Center is also open to children of community members. Accredited by the National Association for the Education of Young Children (NAEYC) and licensed by the New York State Office of Children and Family Services, the Center accepts children between the ages of 6 weeks and 5 years on a first-come, first-served basis. A summer school-age program is also available for children (up to age 12). The Center is committed to providing developmentally appropriate programs in a safe, predictable environment, where children can develop socially, emotionally, cognitively, and physically.

Computing and Technology Services

Twin Rise 206, (716) 878-4611
www.buffalostate.edu/cts <http://www.buffalostate.edu/cts>

Computing and Technology Services supports computing hardware, software, and networking for instruction, research, and administrative activities on campus. There are many public and department-specific networked labs as well as wireless access available across campus. Labs are equipped with up-to-date computers and a variety of standard and curriculum-specific state-of-the-art software to support the educational needs of the campus. Campus computing- and technology-related questions can be directed to the Computing Help Desk, chd@buffalostate.edu, located in E. H. Butler Library. Visit the CTS website www.buffalostate.edu/cts <http://www.buffalostate.edu/cts> for additional information and supporting materials.

Continuing Professional Studies

Cleveland Hall 210, (716) 878-5907
www.buffalostate.edu/academics/cenc

The Continuing Education Office offers a comprehensive array of learning opportunities to meet the needs of all potential students. Working in partnership with the college's academic and public service units and research centers, the office extends the college's offerings to people of all ages and cultures within Western New York and beyond. A variety of methods is offered, including distance-education programs, workshops, seminars, traditional courses, and credit- and noncredit-bearing certificate programs.

Buffalo State recognizes that mature students bring prior knowledge gained through life experiences and skills, and often can credit this knowledge toward a degree. This process, known as Prior Learning Assessment, can allow students to be eligible to achieve college credit for skills and knowledge they already have gained through work or other life experiences. A fee is assessed for any credits awarded.

The Continuing Education Office meets the training and development needs of many area employers. The center provides custom-designed courses, seminars, workshops, organizational and training needs analysis, and employee development programs. The center works with each organization to provide individualized programs, either on site or at the college's conference and training facilities.

Counseling Center

Weigel Health Center, Second Floor, (716) 878-4436
www.buffalostate.edu/counselingcenter

The Counseling Center provides professional psychological services to students experiencing developmental or situational difficulties that may interfere with their ability to take advantage of the educational opportunities at Buffalo State. The staff includes licensed psychologists, a substance-abuse counselor, social workers, and a part-time psychiatrist. Information shared in counseling is confidential and is protected to the full extent of the law.

Dean of Students

Campbell Student Union 306, (716) 878-4618

www.buffalostate.edu/deanofstudents

The dean of students works closely with students and student groups to further their intellectual, emotional, and social development. The dean serves as an advocate for the rights of students, and the college's judicial system and mediation services are administered through the dean's office. As a spokesperson for students, the dean helps address important student-life issues and helps foster a positive atmosphere conducive to educational excellence. The dean assists students with their campus needs and promotes high standards of academic performance, social behavior, and citizenship.

Disability Services Office

South Wing 120, (716) 878-4500, fax: (716) 878-3804
www.buffalostate.edu/offices/disabilityservices

Buffalo State ensures access to on-campus academic programs, services, and activities on campus to qualified individuals with disabilities in accordance with guidelines established by the Rehabilitation Act of 1973, Section 504, and by the Americans with Disabilities Act of 1990. This office provides advocacy and coordinates appropriate accommodations for students with disabilities. To receive services, students must contact the office, provide appropriate documentation, and meet with staff. Together, students and staff plan for support before assistance is given.

E. H. Butler Library

(716) 878-6300
www.buffalostate.edu/library

E. H. Butler Library is committed to supporting the scholarship, research, and creativity of the Buffalo State community with more than 530,000 books, 12,000 audiovisual items, subscriptions to hundreds of print periodicals, over 100 databases that provide full-text articles from more than 27,000 serials and journals, and multimedia databases that offer sound files and images. Library databases are accessible both on and off campus, allowing students to conduct research any time of the day or night right from their desktop.

The library Web site includes an online catalog, over 35 subject guides designed by reference librarians, and links to information about support services and resources offered by the library's Information Commons. Services include a Computing Help Desk, Application Support and Training Desk, Writing Help Center, and Equipment Loan. Student proctors provide peer-to-peer computer support. Librarians staff the Reference Desk every day of the week and offer an online chat service and e-mail reference. Graduate students are encouraged to schedule appointments for more in-depth research assistance. Books and articles not available at Butler Library may be requested via ILLiad, an online system for interlibrary loan that provides fast delivery of materials.

Butler Library houses the only open computer lab on campus, with approximately 200 computers, both PCs and Macs. Wireless hot spots are available in several areas of the library with networked black-and-white and color laser

printers. StudyQuad, a state-of-the-art study facility with computers, is open 24/7 during the semester to provide a safe, well-lighted area for Buffalo State students to work.

Media Services houses a diverse array of DVDs and CDs, including a wide selection of boxed music sets and educational videos covering a broad range of subjects. The Curriculum Materials Lab is a special collection of teaching resources offering a variety of preschool, elementary, and secondary level books, textbooks, and award-winning children's literature. The Creative Studies Library, the largest collection of creativity books in the world, is a noncirculating collection that supports the International Center for Studies in Creativity at Buffalo State. Archives/Special Collections maintains the official and historical documents of the college dating from the 1860s, as well as a wide range of unique materials.

Butler Library is in tune with the unique needs of graduate students. Whether it is scheduling individual research appointments, providing quiet study areas, loaning books and laptop computers, maintaining a Web site rich in full-text library resources, or offering coffee, pastries, and sandwiches in the library's café, we have the best of both worlds: real and virtual. Library staff welcomes graduate students to visit in person or on the Web to explore the services and resources that will enhance and improve the academic experience at Buffalo State.

Electronic Learning Office

Bulger Communication Center 113, (716) 878-3877, toll free (866) 411-0779
www.buffalostate.edu/offices/ir/E-Learning

The Electronic Learning Office supports the design and development of credit-bearing online and hybrid courses. Staff provides instructional design and technology training for faculty using ANGEL, the college's Learning Management System, as well as Turnitin.com and other Web-related software programs supported by the college. The office also serves students by providing a list of online and hybrid courses on its Web site. The office will assist students in locating online courses within the SUNY system.

Great Lakes Center

Science Building, Room 261 and Porter Avenue, Buffalo, (716) 878-4329
<http://greatlakescenter.buffalostate.edu/>
<http://greatlakescenter.buffalostate.edu/>

The Great Lakes Center brings together more than 25 affiliated faculty members from eight academic departments at Buffalo State to conduct research in aquatic ecology, fisheries, environmental toxicology and chemistry, urban ecology, watershed dynamics, and environmental education.

The center consists of a complex of laboratories on the main campus and an aquatic research laboratory on a 4.5-acre site at the junction of Lake Erie and the Niagara River. The Great Lakes Center also maintains two 28-foot vessels, a 25-foot heavy lifting work boat, several Boston Whalers, an electrofishing boat, jon-boats, and a number of smaller

boats for near-shore work, as well as a variety of sampling instruments.

Intercollegiate Athletics

Houston Gym 234, (716) 878-3816
www.buffalostate.edu/athletics

The 70,000-square-foot Sports Complex, home to the NCAA Division III Buffalo State Bengals, comprises the Ice Arena; Houston Gymnasium with its pool, dance studios, and basketball, raquetball, and volleyball courts; and the Sports Arena. The Sports Arena boasts a 3,500-seat basketball arena, a one-tenth-mile (160-meter) indoor track, the 1,800-seat Ice Arena (Buffalo's only collegiate ice rink), and the Buffalo State College Intercollegiate Athletics Hall of Fame. Surrounding athletics facilities are Coyer Field, a softball field, practice fields, a quarter-mile (400-meter) outdoor track, and tennis courts. Students can sign up for intramural activities (including team and individual sports) or use athletic facilities with a valid Buffalo State ID. There is a membership fee to use the state-of-the-art fitness center located in Houston Gym.

International Center for Studies in Creativity

Chase Hall 244, (716) 878-6223
www.buffalostate.edu/creativity

The International Center for Studies in Creativity is an internationally recognized unit within Buffalo State. Center faculty conduct research, teach, and work with a variety of groups and organizations to improve the understanding of creativity and creative problem solving.

The history and development of the center are tied to the work of Alex F. Osborn, developer of the brainstorming technique and the creative problem solving (CPS) process. Osborn, director of the New York City-based advertising agency Batten, Barton, Durstine, and Osborn, used his work to encourage innovative thinking among his associates and, later, among young people. His successor, Sidney J. Parnes (professor emeritus), founded the center at Buffalo State in 1967.

The center's programs have a tradition of more than 40 years of research, development, and teaching in the field of creativity studies. Documentation of the program's effectiveness shows positive impact on students' personal and professional growth. The educational program consists of courses that can lead to an undergraduate minor or a master of science degree in creative studies, or a graduate certificate in creativity and change leadership. Courses help students to become better thinkers and problem solvers, and to work more effectively with groups. Skills developed in creative studies courses help improve performance in other classes and provide a competitive edge in the job market. Our alumni work in business and industry, education (all levels), the social sciences, technology, and the arts. Companies or organizations interested in change or change management find creative studies skills to be particularly useful.

In conjunction with E. H. Butler Library, the Creative Studies Special Collection comprises the largest collection of materials on creativity in the world. The collection

includes print and nonprint resources, including books, curricular materials, software programs, dissertations, research projects, and theses on creative thinking and its cultivation. The Creativity-Based Information Resources (CBIR) database, maintained by the center, includes annotations of periodical literature, chapters, software, assessments, and other resources relating to the study of creativity, invention, and innovation. For more information, visit www.buffalostate.edu/orgs/cbir.

The center's academic program is enhanced by the Alex F. Osborn Visiting Professorship, which has attracted to campus some of the most important minds in creativity research to date.

International and Exchange Office

University College
South Wing 410, (716) 878-4620

This office oversees the functions of several centers and offices:

Center for China Studies
South Wing 420, (716) 878-6328
www.buffalostate.edu/centers/ccs

The center promotes and coordinates research, scholarly exchanges, academic programs, and economic development with China.

International Education Office
South Wing 410B, (716) 878-4620
www.buffalostate.edu/studyabroad

This office coordinates Buffalo State-sponsored international study in Australia, Canada, England, Italy, and Netherlands, Puerto Rico, and Spain. Faculty and staff may develop short-term study sessions in other countries as well.

International Graduate Programs for Educators Office
(Formerly: International Learning Styles Center)
South Wing 430, (716) 878-6832
www.buffalostate.edu/ilsc

The International Graduate Programs for Educators (IGPE) Office assumes the responsibility for the development, management, and delivery of a master of science program in multidisciplinary studies, as well as professional development for education professionals working at American/International Schools. Courses are delivered at the school site, electronically or through a combined approach of on-site/online instruction, depending on the course as well as the needs of the cohort.

International Student Affairs Office
Campbell Student Union 400, (716) 878-5331
www.buffalostate.edu/internationalstudentaffairs

The International Student Affairs Office offers a variety of services to international students, including academic advisement and personal counseling. In addition, the office helps students regarding visas, work permits, and immigration regulations. A three-day orientation program is provided for new international students at the beginning of each semester. The office also administers English-

language competency and placement exams in conjunction with the English Department.

Performing Arts Center

Rockwell Hall 210, (716) 878-3032
www.buffalostate.edu/pac

The Performing Arts Center (PAC) at Rockwell Hall, an 856-seat multipurpose theater, hosts more than 180 events each year. Faculty and students of the Theater and Music Departments regularly present concerts here. The PAC is also home to the Buffalo City Ballet, Neglia Ballet, and numerous other community and campus events.

Research Foundation

Bishop Hall B17, (716) 878-6700
www.rf.buffalostate.edu

The Research Foundation at Buffalo State, a nonprofit educational corporation, processes all grant proposals for research, educational projects, training programs, and equipment acquisitions submitted by faculty, staff, and students. Assistance is provided in identifying federal, state, and private support of researchable topics, proposal preparation, fiscal administration of funded grants and contracts, and evaluation of completed projects.

Externally funded research at the college yields numerous opportunities for graduate and research assistantships. The office works closely with the Research Foundation of the State University of New York's central office in Albany.

Residence Life Office (On-Campus Housing)

Porter Hall, (716) 878-3000
www.buffalostate.edu/residencelife

Graduate students who choose to live on campus generally choose to live in Moore Complex apartments, in which three to four students share a bathroom, living room, and kitchen.

The Residence Life Office supports, complements, and enhances the academic mission of the college through a dynamic residence life program that encourages individual growth and development for a diverse residential student population. Management systems ensure the orderly and effective administration of all aspects of the program, including facility management, housekeeping, and security.

Year-round housing also is provided on a space-available basis in Twin Rise North. Room and board fees must be paid in full before room assignment can be finalized.

Off-campus housing is available near campus.

Speech-Language-Hearing Clinic

Caudell Hall 150, (716) 878-3530
www.buffalostate.edu/speech/clinic.xml

The Speech-Language-Hearing Clinic provides individual and group speech, language, and hearing services to clients of all ages. Services are provided by graduate students in the Speech-Language Pathology Department under the direct supervision of clinical faculty and professional staff members who are licensed by New York State and hold the

Certificate of Clinical Competence from the American Speech-Language-Hearing Association.

State-of-the-art equipment is available to aid in the diagnosis and remediation of a variety of disorders, including articulation and phonological disorders; language impairments in children; aphasia; auditory processing disorders; voice and fluency disorders; and traumatic brain injury. Communication enhancement services are available to non-native speakers of English. Services are free to Buffalo State students.

Teacher Certification Office

Caudell Hall 101, (716) 878-6121
www.buffalostate.edu/teachercertification

The Teacher Certification Office recommends Buffalo State graduates to the New York State Department of Education for teacher certification after they have completed an approved program and met all other requirements. It also assists students completing certification-only and postbaccalaureate study leading to teacher certification. The office verifies program completion for graduates applying for out-of-state certification and is a resource for a variety of teacher certification-related topics.

University Police

Chase Hall 100, (716) 878-6333
<http://police.buffalostate.edu>

The State University Police Department at Buffalo State is the law-enforcement agency responsible for crime prevention and control, criminal investigations, traffic and parking supervision, physical plant security, disaster coordination, community policing, and the maintenance of public order. The department offers many special services, including personal-safety awareness education, a motorist assistance program, a safety escort service, a property identification system, and a found-property department. To make arrangements for educational programs, complete the request form at <http://police.buffalostate.edu/educational-programs>

Parking Rules and Regulations

The rules governing motor vehicles on campus are intended to ensure maximum pedestrian and vehicular safety and to establish the most convenient arrangements possible for students, staff, and visitors. Motor vehicles may park in any of the designated areas shown on the campus map. Only vehicles with special permits authorizing them to park in spaces designated for persons with disabilities are allowed to park in such spaces. All vehicles parked on the grounds of Buffalo State must display valid college parking permits. Maps and parking permits are available in the Parking Services office, Chase Hall 126 and at <http://www.buffalostate.edu/parking.xml>.

Parking is prohibited:

- On all roadways
- In all fire lanes
- On lawns, grass, or grounds

- On or over painted lines in parking areas or crosswalks
- In such a way as to interfere with free and proper use of a roadway or pedestrian crossings

The department may authorize towing of any vehicle found to be in violation of the college's rules and regulations. Violations will result in parking fines and/or summonses. The college assumes no responsibility for automobiles and/or their contents. Rules regarding parking for persons with disabilities are strictly enforced. Parking tickets may be paid in the Student Accounts Office, Moot Hall 260. For more information, call the Parking Services Office at (716) 878-3041.

Crime Statistics Availability

A copy of the Buffalo State campus crime statistics as reported annually to the U.S. Department of Education will be provided upon request. Please direct all requests to the Chief of University Police, Chase Hall, Buffalo State, 1300 Elmwood Avenue, Buffalo, NY 14222, (716) 878-6332. Information also can be obtained from the U.S. Department of Education Web site at <http://ope.ed.gov/security> or University Police's Web site at <https://police.buffalostate.edu/sites/police.buffalostate.edu/files/uploads/Documents/stats20092012.pdf>.

Veterans Certification Office

Moot Hall 141, (716) 878-5045

The Veterans Certification Office assists current and prospective students who are veterans, servicepersons, or dependents or survivors of veterans with Veterans Affairs educational benefits. Information on current regulations affecting educational benefits, tutorial assistance, and dependency allowance also is provided.

Weigel Health Center

(716) 878-6711
www.buffalostate.edu/weigel

The Weigel Health Center provides health and wellness services for all registered students. In addition to diagnosing and treating illness and injury, the professional staff stresses health education and preventive medicine. Students are seen on an appointment basis or a walk-in basis if a clinician is available. There is no charge for most services. Laboratory services are available at Weigel Health Center. Some services may be sent to an outside lab which may result in insurance co-pays.

The Health Promotions program provides the campus community with workshops, trainings, events, and campaigns. Topics include: bystander intervention, wellness, stress, sexual health, tobacco prevention, alcohol and other drug abuse prevention. Internship and volunteer opportunities are available to students. Educational resources also are available for student research or classroom projects.

All students must be in compliance with New York State law regarding immunizations. Measles, mumps, and rubella immunizations are provided at no charge at the center for those students who need vaccinations. Students must be in compliance to register for classes. New York State Public Law and SUNY Buffalo State also requires that all students enrolled complete and return the Meningitis Information Response Form to Weigel Health Center. The form is available at www.buffalostate.edu/weigel
<http://www.buffalostate.edu/weigel/>.

All full-time students (12 credit hours or more) are required to have health insurance. Students with their own health coverage must submit proof of insurance by completing an insurance waiver [online] by stated deadlines. Students who have not completed waivers will be automatically enrolled in and charged for the SUNY Buffalo State Plan. Students who lose their existing insurance coverage at any time after completing the waiver are NOT automatically enrolled in the student health insurance plan. Once waived, students must request enrollment to be covered under the college's student health insurance plan. Part-time students are not automatically enrolled but may apply for coverage.

International students must purchase SUNY international health insurance or have comparable coverage.

Whitworth Ferguson Planetarium

www.fergusonplanetarium.net
<http://www.fergusonplanetarium.net>

Due to construction of the new Science and Mathematics Complex, the Whitworth Ferguson Planetarium is now closed. A new state-of-the-art planetarium will be open in the final phase of construction, currently scheduled for 2018.

When re-opened, the Whitworth Ferguson Planetarium will continue to serve as a unique Buffalo State resource for the Western New York community. Students studying astronomy, geology, and other courses will use the planetarium as an immersive visualization laboratory. The planetarium will again offer public programs about the planets, stars, constellations, and recent advances in the exploration of the universe as well as programs for schoolchildren, scout groups and a variety of other private groups.

Graduate Programs at Buffalo State

School of Arts and Humanities

Benjamin C. Christy, Ph.D., Dean
Rockwell Hall 222

Art Conservation	M.A. and C.A.S.	Art Conservation	MA-AH, CAS-AH	CNS	1099
Art Education (K–12)	M.S.Ed.	Art Education	MSED-AH	AED	0831
Art Education	PTCP+	Art Education	PBC-AH	AED	0831
English	M.A.	English	MA-AH	ENG	1501
English Education (7–12)	M.S.Ed.	English	MSED-AH	ENS	1501.01
English Education (7–12)	PTCP+	English	PBC-AH	ENS	1501.01
Foreign Language Education (1–6 extension; 7–12)	M.S.Ed.	Modern and Classical Languages	MSED-AH	FLE	1199
French Education (7–12)	PTCP+	Modern and Classical Languages	PBC-AH	FRS	1102.01
Music Education	M.M.	Music	MM-AH	MUS	0832
Spanish Education (7–12)	PTCP+	Modern and Classical Languages	PBC-AH	SPS	1105.01

Graduate-level courses are also offered in the following departments: communication, design, fine arts, modern and classical languages. *

School of Education

Wendy Paterson, Ph.D., Dean
Caudell Hall 114

Adult Education	M.S. and Graduate Certificate	Educational Foundations	MS-ED, GRCT-ED	ADE	0807
Business and Marketing Education	M.S.Ed.	Educational Foundations	MSED-ED	BME	0838.01
Business and Marketing Education	PTCP+	Educational Foundations	PBC-ED	BME	0838
Career and Technical Education	M.S.Ed.	Educational Foundations	MSED-ED	CTE	0839.03
Career and Technical Education	PTCP+	Educational Foundations	PBC-ED	CTE	0839.03
Childhood and Early Childhood Curriculum and Instruction	M.S.Ed.	Elementary Education and Reading	MSED-ED	CUR	0829
Childhood and Early Childhood Education (Birth–Grade 6) including initial teaching certification	M.S.Ed.	Elementary Education and Reading	MSED-ED	CEC	0802
Educational Leadership	C.A.S.	Elementary Education and Reading	CAS-ED	EDL	0828
Human Resource Development	Graduate Certificate	Educational Foundations	GRCT-ED	HRD	0807
Literacy Specialist (Birth– Grade 6; Birth–Grade 12)	M.S.Ed.	Elementary Education and Reading	MSED-ED	LTB	0830
Literacy Specialist (Grades 5–12)	M.P.S.	Elementary Education and Reading	MPS-ED	LTS	0830
Special Education: Adolescence	M.S.Ed.	Exceptional Education	MSED-ED	EXA	0808
Special Education: Childhood	M.S.Ed.	Exceptional Education	MSED-ED	XCE	0808
Special Education: Early Childhood	M.S.Ed.	Exceptional Education	MSED-ED	EXC	0808
Teaching Bilingual Exceptional Individuals	M.S.Ed. and Graduate Certificate	Exceptional Education, GRCT- ED	MSED-ED, GRCT-ED	BXE	0808

School of Natural and Social Sciences

Mark W. Severson, Ph.D., Dean
Classroom Building A113

Applied Economics	M.A.	Economics and Finance	MA-NS	AEC	2204
Biology	M.A.	Biology	MA-NS	BIO	0401
Biology Education (7–12)	M.S.Ed.	Biology	MSED-NS	BIS	0401.01
Biology Education (7–12)	PTCP+	Biology	PBC-NS	BGS	0401.01
Biology Education (7–12; 5–6 extension)	PTCP+	Biology	PBC-NS	BGX	0401.01

Chemistry Education (7–12)	M.S.Ed.	Chemistry	MSED-NS	CHS	1905.01
Chemistry Education (7–12)	PTCP+	Chemistry	PBC-NS	CGX	1905.01
Chemistry Education (7–12; 5–6 extension)	PTCP+	Chemistry	PBC-NS	CGX	1905.01
Earth Science Education (7–12)	M.S.Ed.	Earth Sciences and Science Education	MSED-NA	EAS	1917.01
Earth Science Education (7–12)	PTCP+	Earth Sciences and Science Education	PBC-NS	EGS	1917.01
Earth Science Education (7–12; 5–6 extension)	PTCP+	Earth Sciences and Science Education	PBC-NS	EGX	1917.01
Forensic Science	M.S.	Chemistry	MS-NS	FSC	1999.20
History	M.A.	History and Social Studies Education	MA-NS	HIS	2205
Great Lakes Ecosystem Science	M.A.	Great Lakes Center	MA-NS	GLE	0420
Great Lakes Ecosystem	M.S.	Great Lakes Center	MS-NS	GLE	0420
Mathematics Education (7– 12)	M.S.Ed.	Mathematics	MSED-NS	MTS	1701.01
Mathematics Education (7– 12)	PTCP+	Mathematics	PBC-NS	MTS	1701.01
Mathematics Education (7– 12; 5–6 extension)	PTCP+	Mathematics	PBC-NS	MTX	1701.01
Museum Studies	Graduate Certificate	History and Social Studies Education	GRTC-NS	MTS	1099
Physics Education (7–12)	M.S.Ed.	Physics	MSED-NS	PHS	1902.01
Physics Education (7–12), Alternative Certification	M.S.Ed.	Physics	MSED-NS	PHA	1902.01
Physics Education (7–12)	PTCP+	Physics	PBC-NS	PGS	1902.0
Physics Education (7–12; 5–6 extension)	PTCP+	Physics	PBC-NS	PGS	1902.0
Professional Applied and Computational Mathematics	M.S.	Mathematics	MS-NS	ACM	1701
Public Administration in Public and Nonprofit Management	M.P.A.	Political Science, Division of Public Administration	MPS-NS	PNM	2101.00
Public Management	Graduate Certificate	Political Science, Division of Public Administration	GRCT-NS	PMG	2102
Science Education	M.S.Ed.	Earth Sciences and Science Education	MSED-NS		
Social Studies Education (7–12)	M.S.Ed.	History and Social Studies Education	MSED-NS	SSS	2201.01
Social Studies Education (7–12)	PTCP+	History and Social Studies Education	PBC-NS	SSS	2201.01
Social Studies Education (7–12; 5–6 extension)	PTCP+	History and Social Studies Education	PBC-NS	SSX	2201.01

Graduate-level courses are also offered in the following departments: anthropology, geography and planning, health and wellness, political science, sociology.*

School of the Professions

Rita M. Zientek, Ph.D., Interim Dean
Cleveland Hall 214

Creative Studies	M.S.	Creative Studies	MS-SP	CRS	4903
Creativity and Change Leadership	Graduate Certificate	Creative Studies	GRCT-SP	CRT	4903
Criminal Justice	M.S.	Criminal Justice	MS-SP	CRJ	2105
Educational Technology	M.S.Ed.	Computer Information Systems	MSED-SP	EDT	0899
Higher Education and Student Affairs Administration	M.S.	Higher Education and Student Affairs Administration	MS-SP	HEA	0826
Industrial Technology	M.S.	Technology	MS-SP	IDT	0925
Speech-Language Pathology	M.S.Ed.	Speech-Language Pathology	MSED-SP	SLP	1220
Student Personnel Administration	M.S.	Student Personnel Administration	MS-SP	SPD	0826
Technology Education	M.S.Ed.	Technology	MSED-SP	TED	0839.01
Technology Education	PTCP+	Technology	PBC-SP	TED	0839.01

Graduate-level courses are also offered in the following departments: business, dietetics and nutrition, health and wellness, social work.*

The Graduate School

Kevin Railey, Ph.D., Dean
Cleveland Hall 204

Multidisciplinary Studies	M.A.	The Graduate School	MA-GR	MUL	4999
Multidisciplinary Studies	M.S.	The Graduate School	MS-GR	MUL	4999

*See course listings in this catalog [Guide to Course Descriptions](#).

+Postbaccalaureate Teacher Certification Program (PTCP): No degree or certificate is awarded by Buffalo State College. See program descriptions for details.

ADULT EDUCATION (M.S. AND GRADUATE CERTIFICATE)

Master of Science Program

Program Code: MS-ED
Major Code: ADE
HEGIS 0807

Department of Adult Education

Susan K. Birden, Chair
Bacon Hall 306, (716) 878-4303
www.buffalostate.edu/adulteducation

The master of science in adult education program prepares professionals for careers in adult education and human resource development. Community agencies employ adult educators to conduct literacy, personal development, and workforce-preparation programs. Similarly, businesses employ human resource development professionals to train new workers and retrain experienced workers. Graduates of the program are also well prepared for doctoral programs in adult education. This program does not lead to teaching certification.

The master's program is offered both on the Buffalo State campus and through web-based courses.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.5 (4.0 scale), or a master's degree from an accredited institution with a minimum GPA of 3.0 (4.0 scale).
2. Applicants who hold a bachelor's degree but do not meet either of the above criteria may be admitted if they attain a minimum combined quantitative/verbal score of 1000 on the Graduate Record Examination (GRE), attain a minimum score of 45 on the Miller Analogies Test (MAT), or complete 6 credit hours of 500-level coursework at the college as an accepted graduate student with a minimum cumulative GPA of 3.5.
3. A letter describing the applicant's interest in the field and experience with teaching or administering adult programs.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Graduation Requirements: A minimum of 30 credit hours completed with a minimum cumulative 3.0 GPA including 9 hours in an elective field specialization, selected under advisement. The 9-credit field specialization is developed by each student and his or her academic advisor to incorporate courses from related academic disciplines. Examples of field specializations include administration, linguistics, literacy, English as a second language, job development, workplace learning and staff development, vocational education, counseling, human resource development, student personnel administration, multiculturalism, creativity, exceptionality, criminal justice, health and wellness, educational computing, and business. The field specialization could also include an

internship for those students with minimal adult education experience.

Students also must complete a written comprehensive examination as a culminating requirement.

Application Deadline: Applicants must apply by July 1 for fall admission or by December 1 for spring admission. No applications are accepted for summer admission.

Program Requirements

REQUIRED COURSES		21 CR
ADE 500	Introduction to Adult Education	
ADE 600	Adulthood and Development	
ADE 605	Historical, Social, and Philosophical Foundations of Adult Education	
ADE 608	Instructional Design	
ADE 610	Methods of Adult Education	
ADE 655	Diversity in Adult Education and Training	
ADE 689	Methods of Educational Research	

Elective Field Specialization Courses	9 cr
Three content courses plus comprehensive examination	
Total Required Credit Hours	30 cr

All courses are 3 credit hours.

Graduate Certificate Program

Program Code: GRCT-ED
Major Code: ADE
HEGIS 0807

Department of Adult Education

Susan K. Birden, Chair
Bacon Hall 306, (716) 878-4303
www.buffalostate.edu/adulteducation

The graduate certificate in adult education is designed for professionals who desire graduate-level training in the discipline of adult education but do not need a master's degree. The graduate certificate program consists of four courses from the master of science in adult education program. Students who complete the certificate program and choose to continue their graduate studies at Buffalo State may request that certificate program courses be applied toward the master's degree in adult education. This program does not lead to teaching certification.

The graduate certificate program is offered both on the Buffalo State campus and through web-based courses.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.5 (4.0 scale), or a master's degree from an accredited institution with a minimum GPA of 3.0 (4.0 scale).
2. Applicants who hold a bachelor's degree but do not meet either of the above criteria may be admitted if they

attain a minimum combined quantitative/verbal score of 1000 on the Graduate Record Examination (GRE), attain a minimum score of 45 on the Miller Analogies Test (MAT), or complete 6 credit hours of 500-level coursework at the college as an accepted premajor student with a minimum cumulative GPA of 3.5.

3. A letter describing the applicant's interest in the field and experience with teaching or administering adult programs.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Graduation Requirements: Completion of the 12 required credit hours with a minimum cumulative 3.0 GPA.

Application Deadline: Applicants must apply by July 1 for fall admission or by December 1 for spring admission. No applications are accepted for summer admission.

Program Requirements

Required Courses		12 cr
ADE 600	Adulthood and Development	
ADE 605	Historical, Social, and Philosophical Foundations of Adult Education	
ADE 608	Instructional Design	
ADE 610	Methods of Adult Education	

APPLIED ECONOMICS (M.A.)

Master of Arts Program

Program Code: MA-NS

Major Code: AEC

HEGIS 2204

Economics and Finance Department

Theodore F. Byrley, *Chair*

Victor Kasper Jr., *Graduate Director*

Classroom Building B204, (716) 878-5132

www.buffalostate.edu/economics

The master of arts in applied economics is designed for students who want to gain an in-depth knowledge of modern economics and finance, particularly those interested in or already working in:

- Financial institutions and finance departments in business and government
- Policy-oriented and community service occupations in the private and public sectors
- Economic and financial consulting and advising
- High school business, economics, and social studies education

The program integrates real-world application with the latest theory and enhances opportunities for graduates in a broad range of occupations and institutions; the program also has prepared students for continued education at the Ph.D. level. In addition, it has prepared students to take the Chartered Financial Analyst (CFA) exam.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.7 (4.0 scale), or a master's degree from an accredited institution with a minimum cumulative GPA of 3.0 (4.0 scale).
2. Applicants who hold a bachelor's degree but do not meet either of the above criteria may be admitted if they attain a minimum combined quantitative/verbal score of 1000 on the Graduate Record Exam (GRE), attain a minimum score of 45 on the Miller Analogies Test (MAT), or complete 6 credit hours of 500-level coursework at the college as an accepted premajor student with a minimum cumulative GPA of 3.5.
3. Three letters of reference.
4. A letter describing the applicant's interest in the program.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Graduation Requirements: A minimum of 30 credit hours at the graduate level, including a minimum of 15 credit hours at the 600 level. Students also must complete required core courses and one of the following: a master's project, a master's thesis, or a comprehensive examination. A field of specialization is recommended but not required.

Program Requirements

Required Courses		12 cr
ECO 505	History of Economic Thought	
ECO 507	Applied Microeconomic Theory	
ECO 508	Applied Macroeconomic Theory	
ECO 524	Applied Econometrics	

Suggested Content Specialty Courses

A. Economic Policy Analysis Courses

Select three courses from the following:

ECO 600	Labor Economics
ECO 610	Economics of Education
ECO 612	Urban Economic Analysis
ECO 650	Public Finance
ECO 660	Cost-Benefit Analysis

B. Financial Economics Courses

Select three courses from the following:

ECO 650	Public Finance
FIN 619	Risk Management
FIN 622	Capital Markets
FIN 630	International Finance
FIN 645	Estate Planning and Taxation

Other Elective Courses ¹		3-9 cr
ECO 502	Workshop in Economic Education	
ECO 510	Economics of Education	
ECO 601	Engineering Economics (cross-listed as INT 601)	

Master's Project, Master's Thesis, or Comprehensive Examination 3 cr

Select one option:

ECO 690	Master's Project
ECO 695	Master's Thesis
	Comprehensive Examination (0)

Total Required Credit Hours	30 cr
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¹ Selected under advisement
All courses are 3 credit hours unless otherwise indicated.

ART CONSERVATION (M.A. AND C.A.S.)

Master of Arts Program

Program Code: MA-AH
Major Code: CNS

Certificate of Advanced Study Program

Program Code: CAS-AH
Major Code: CNS
HEGIS 1099

Art Conservation Department

Patrick Ravines, *Director*
Rockwell Hall 230, (716) 878-5025
www.buffalostate.edu/depts/artconservation

This three-year master of arts program prepares students for careers as professional conservators to care for works of artistic, historical, or cultural significance, from famous paintings to family heirlooms. The instructional program, which includes a 12-month internship at a museum or other institution, provides students with a broad background in conservation to help ensure continued professional growth throughout their careers. In their second year, students select objects, paintings, or paper conservation as a specialty. They may choose to focus on a subspecialty, such as ethnographic or archaeological objects, photographs, or books. A certificate of advanced study in art conservation is awarded with the M.A. degree.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.8 (4.0 scale).
2. Acceptable scores on the Graduate Record Examination (GRE).
3. Completion of at least the following:
 - a. art history-21 semester hours. Courses should include broad surveys of art history and more focused studies of particular movements or works of significant artists. At the discretion of the admissions committee, courses can include up to 12 semester hours outside of an art history department. For example, classics, archaeology or anthropology courses that focus on artifacts, history of the book, history of photography, history of furniture and other material culture courses may be accepted. The admissions committee may ask for syllabi to verify the content of coursework.
 - b. chemistry-16 credit hours: a two-semester introductory (general) chemistry lecture course with accompanying laboratory sections and a two-semester organic chemistry sequence with accompanying laboratory sections. Chemistry courses for nonscience majors will not be accepted.
 - c. studio art (drawing, printmaking, painting, sculpture)-9 credit hours.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Application Deadline: Completed admission applications must be received by the department office no later than February 1 of the year in which admission is sought.

Program Requirements

Required Courses	57 cr
CNS 600	Techniques of Examination and Documentation I (2)
CNS 601	Techniques of Examination and Documentation I Laboratory (1)
CNS 602	Techniques of Examination and Documentation II (2)
CNS 603	Techniques of Examination and Documentation II Laboratory (1)
CNS 604	Techniques of Examination and Documentation III (2)
CNS 605	Techniques of Examination and Documentation III Laboratory (1)
CNS 606	Techniques of Examination and Documentation IV (2)
CNS 607	Techniques of Examination and Documentation IV Laboratory (1)
CNS 610	Conservation Science: Properties and Behavior of Materials; Methods of Analysis I (2)
CNS 611	Conservation Science: Properties and Behavior of Materials; Methods of Analysis I Laboratory (1)
CNS 612	Conservation Science: Polarized Light Microscopy, Light and Matter (2)
CNS 613	Conservation Science: Polarized Light Microscopy, Light and Matter Laboratory (1)
CNS 614	Conservation Science: Inorganic Materials in Art and Conservation (2)
CNS 615	Conservation Science: Inorganic Materials in Art and Conservation Laboratory (1)
CNS 616	Technical Aspects of Preventive Conservation (3)
CNS 617	Technical Aspects of Preventive Conservation Laboratory (1)
CNS 620	Technology and Conservation of Paintings I (2)
CNS 621	Technology and Conservation of Paintings I Laboratory (1)
CNS 622	Technology and Conservation of Paintings II (2)
CNS 623	Technology and Conservation of Paintings II Laboratory (1)
CNS 624	Technology and Conservation of Paintings III (2)
CNS 630	Technology and Conservation of Works of Art on Paper I (2)
CNS 631	Technology and Conservation of Works of Art on Paper I Laboratory (1)
CNS 632	Technology and Conservation of Works of Art on Paper II (2)
CNS 633	Technology and Conservation of Works of Art on Paper II Laboratory (1)
CNS 634	Technology and Conservation of Works of Art on Paper III (2)
CNS 640	Technology and Conservation of Objects I (2)
CNS 641	Technology and Conservation of Objects I Laboratory (1)
CNS 642	Technology and Conservation of Objects II (2)
CNS 643	Technology and Conservation of Objects II Laboratory (1)
CNS 644	Technology and Conservation of Objects III (2)
CNS 685	Professionalism in Conservation I (2)
CNS 686	Professionalism in Conservation II (1)
CNS 695	Student Specialization Project (4)

Elective Courses¹

4 cr

Select one course from the following:

CNS 626	Technology and Conservation of Paintings IV (4)	
CNS 636	Technology and Conservation of Works of Art on Paper IV (4)	
CNS 646	Technology and Conservation of Objects IV (4)	
Internship¹		12 cr
CNS 698	Internship Sustaining (0)	
CNS 699	Internship (12)	
Final Examination		0 cr
May be oral and/or written.		
Total Required Credit Hours		73 cr
¹ Selected under advisement		

ART EDUCATION (M.S.Ed.)

Master of Science in Education Program

Program Code: MSED-AH

Major Code: AED

HEGIS 0831

Art Education Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

National Association of Schools of Art and Design (NASAD) Accredited

Shirley Hayes, *Chair*

Bishop Hall 103, (716) 878-4106

www.buffalostate.edu/arteducation

The Art Education Department offers graduate studies that lead to a master of science in art education and eligibility to apply for New York State professional certification to teach art in grades pre-kindergarten–12 (PK-12). This certifying degree program requires 30 credit hours of study and enables students to acquire competence in theory, research, and methodology in art. Within the required program format, students are encouraged to pursue individualized programs of study.

Advisement: Academic advisers are assigned by the department and must be consulted each semester in order to register for courses; however, students remain responsible for fulfilling department and college requirements specific to the program.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale) in the major area of study and 2.5 overall, and/or a minimum combined quantitative/verbal score of 1000 on the Graduate Record Examination (GRE).
2. Submit a copy of a New York State Certificate of Qualification (CQ) initial certificate to teach art. If you are a recent graduate or are just completing your undergraduate program at the time of application, you must submit documentation showing that you have completed all requirements for certification (i.e., copies of test scores and certificates of workshop completion).
3. An interview with the Art Education Department chair.

Requests for exceptions to admission requirements may be directed to the department chair. In addition, all applicants

should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Courses		6 cr
AED 688	Seminar	
AED 689	Research	
Content Specialty Courses¹		15-21 cr
Art education, fine arts, design		
General Studies Courses¹		0-6 cr
Master's Project or Master's Thesis¹		3-6 cr
AED 690	Master's Project	
AED 695	Master's Thesis (6)	
Total Required Credit Hours		30 cr
¹ Selected under advisement		
All courses are 3 credit hours unless otherwise indicated.		

ART EDUCATION (PTCP)

Postbaccalaureate Teacher Certification Program

Program Code:UG PBC-AH

Major Code: AED

HEGIS 0831

Art Education Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

National Association of Schools of Art and Design (NASAD) Accredited

Shirley Hayes, *Chair*

Bishop Hall 103, (716) 878-4106

www.buffalostate.edu/arteducation

This program is designed for students who have earned a baccalaureate degree with coursework in fine arts, design, and/or art education from an accredited college or university and intend to complete the coursework required for New York State certification to teach art. After successfully completing the teacher-certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State initial certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

Students are expected to complete the entire sequence of coursework and are responsible for any additional certification requirements established by the New York State Teacher Certification Division, including fingerprinting and at least four state-mandated seminars. Students in the program may elect to attend part time or full time, yet must attend full time during the student teaching semester. Courses are offered each semester (excluding summer) during the day to accommodate practical experiences in public schools.

Advisement: Academic advisers are assigned by the department and must be consulted each semester in order to register for courses; students remain responsible for fulfilling department and college requirements specific to the program.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements: A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale) in the major area of study (fine arts, design, and/or art education) and 2.5 overall.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

First Semester		12 cr
AED 200	Fundamentals of Art Inquiry	
AED 300W	Foundations in Art Education	
AED 301W	Theoretical Constructs in Art Education	
AED 398	Computer Applications for Art Educators	
Second Semester		9 cr
AED 302W	Functions and Practices in Art Education	
AED 315	Arts in Living	
ATS 325	Art and Special Needs	
Third Semester		15 cr
AED 303	Elementary Student Teaching in Art (6)	
AED 304	Secondary Student Teaching in Art (6)	
AED 400	Student Teaching Seminar	
Total Required Credit Hours		36 cr
All courses are 3 credit hours unless otherwise indicated.		

BIOLOGY (M.A.)

Master of Arts Program

Program Code: MA-NS

Major Code: BIO

HEGIS 0401

Biology Department

Gregory J. Wadsworth, *Chair*

Science Building 261, (716) 878-5203

www.buffalostate.edu/biology

The master of arts in biology prepares students for advanced research, professional employment, or study at the Ph.D. level.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75 (4.0 scale).
2. Scores on the Graduate Record Examination (GRE) general test.
3. Three letters of recommendation evaluating the applicant's academic qualifications.
4. An official transcript of the student's undergraduate program, giving evidence of satisfactory completion of 48 credit hours of college science and mathematics courses, including a minimum of 18 credit hours in biology. It is strongly recommended that this coursework also include one year of college physics,

one year of organic chemistry, one semester of statistics, and one semester of calculus. The absence of any of these courses may be regarded as a deficiency and students may be required to complete these recommended courses before graduation.

5. A written statement of the applicant's academic background, future plans, and area of research interest.

Applicants interested in completing a thesis must identify a faculty sponsor and request a letter of support from him or her to accompany the admissions application.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Graduation Requirements:

1. A minimum cumulative GPA of 3.0 (4.0 scale). The candidate may take no more than 36 credit hours to achieve this average.
2. A minimum of 30 credit hours. Courses in which a candidate earns a grade below C do not bear credit toward the degree but are calculated in the cumulative average.
3. Two semesters of Research Seminar (BIO 617).

Program Requirements

Biology Courses ¹	22-28 cr
Research	2 cr
BIO 617	Research Seminar (1)

Thesis or Comprehensive Exam

0-6 cr

BIO 695

Master's Thesis (6)

or

Comprehensive Exam (0)

Total Required Credit Hours

30 cr

¹Selected under advisement

BIOLOGY EDUCATION (7-12, M.S.Ed.)

Master of Science in Education Program

Program Code: MSED-NS

Major Code: BIS

HEGIS 0401.01

Biology Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

Gregory J. Wadsworth, *Chair*

Science Building 261, (716) 878-5203

www.buffalostate.edu/biology

The master of science in biology education is designed for teachers who wish to combine advanced work in biology with graduate work in education.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75 (4.0 scale).
2. A New York State Certificate of Qualification (CQ), provisional certificate, or initial certificate to teach science, or an approved equivalent.

- Three letters of recommendation evaluating the applicant's academic qualifications.
- An official transcript of the student's undergraduate program showing evidence of completion of at least 18 credit hours in biology and satisfactory preparation in chemistry, physics, and mathematics.
- A written statement of the applicant's academic background and career goals.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Graduation Requirements:

- A minimum cumulative GPA of 3.0 (4.0 scale). The candidate may take no more than 36 credit hours to achieve this average.
- A minimum of 30 credit hours. Courses in which a candidate earns a grade below C do not bear credit toward the degree but are calculated in the cumulative average.
- Successful oral presentation of the written master's project or thesis.

Program Requirements

Biology Courses at the 600-level¹	12-15 cr
Science Education Courses	9 cr
SCI 628 Seminar in Secondary Science Education	
SCI 632 Curricular Trends in Secondary School Science	
SCI 685 Evaluation in Science Education	
Biology Elective Course	3 cr
Master's Project or Master's Thesis	3-6 cr
<i>Select one option:</i>	
BIO 690 Master's Project	
BIO 695 Master's Thesis (6)	
Total Required Credit Hours	30 cr

¹Selected under advisement
All courses are 3 credit hours unless otherwise indicated

BIOLOGY EDUCATION (7-12; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-NS
Major Code: BGS
HEGIS 0401.01

Biology Department

National Council for Accreditation of Teacher Education (NCATE) Accredited
Gregory J. Wadsworth, *Chair*
Science Building 361, (716) 878-5203
www.buffalostate.edu/biology

The biology education (7-12) postbaccalaureate teacher certification program leads to eligibility for a New York State initial certificate to teach both biology and general science in grades 7-12. This program is designed for students who have earned a baccalaureate degree in biology or a related field from an accredited college or

university and intend to complete the coursework required for New York State certification to teach biology in secondary schools or general science in middle schools.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

A minimum GPA of 2.75 in required biology courses is needed for admission to SED 405, SED 407, and SED 408.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements: A bachelor's degree in biology or a related area from an accredited college or university with a minimum GPA of 2.75 (4.0 scale) in required biology courses.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Biology Courses or equivalents:	31 cr
BIO 111 Introduction to Biology (4)	
BIO 212 Introduction to Organismal Biology and Diversity (4)	
BIO 213 Introduction to Ecology, Evolution, and Behavior (4)	
BIO 214 Introduction to Cell Biology (4)	
BIO 303 Genetics (4)	
BIO 315 Ecology (4)	
BIO 405 Organic Evolution	
<i>Select one course from the following:</i>	
BIO 308/ BIO 309 Human Anatomy and Physiology and Laboratory (4)	
BIO 402 Comparative Animal Physiology (4)	

Total Required Credit Hours in Professional Education	24 cr
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SPF 303 Educational Psychology: Middle and Secondary Education	
EDU 416 Teaching Literacy in Middle and Secondary Schools	
EXE 372 Foundations of Teaching Adolescents with Disabilities	
SCI 445 Literacy for Teaching Science	
SED 200 Field Experience in Secondary Science Education	
SED 401 Techniques for Teaching Laboratory Activities in the Secondary Science Classroom	
SED 405 Methods and Materials for Teaching Secondary School Science	
SED 409 Seminar in Secondary Science Education	

Total Required Credit Hours in Student Teaching	12 cr
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SED 407 Practice Teaching Science in the Middle School (6)	
SED 408 Practice Teaching Science in the High School (6)	

Total Required Credit Hours in Other Fields for Certification	27-35 cr
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A. One Year (or Equivalent) of a Foreign Language 0-6 cr

B. Cognate Science Courses	23-25 cr
CHE 111/	Fundamentals of Chemistry I and II (4,4)
CHE 112	
GES 101	Introductory Geology (3)
GES 103	Introductory Geology Laboratory (1)
PHY 107/	University Physics I and II (4,4)
PHY 108	
OR	
PHY 111/ PHY	University Physics I, II (5,5)
112	
<i>Select one course from the following:</i>	
GES 111	General Oceanography
GES 131	Introductory Astronomy
GES 241	Meteorology
C. Mathematics Courses	4 cr
MAT 126	Calculus (or equivalent) (4)
Total Required Credit Hours	94 cr
All courses are 3 credit hours unless otherwise indicated.	

BIOLOGY EDUCATION (7–12; 5–6 EXTENSION; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-NS

Major Code: BGX

HEGIS 0401.01

Biology Department

National Council for Accreditation of Teacher Education (NCATE)

Accredited

Gregory J. Wadsworth, *Chair*

Science Building 261, (716) 878-5203

www.buffalostate.edu/biology

The biology education (7–12 with 5–6 extension) postbaccalaureate teacher-certification program leads to eligibility for a New York State initial certificate to teach both biology and general science in grades 5–12. This program is designed for students who have earned a baccalaureate degree in biology or a related field from an accredited college or university and intend to complete the coursework required for New York State certification to teach biology in secondary schools or general science in middle schools.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

A minimum GPA of 2.75 in required biology courses is needed for admission to SED 405, SED 407, and SED 408.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements: A bachelor's degree in biology or a related area from an accredited college or university

with a minimum GPA of 2.75 (4.0 scale) in required biology courses.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Total Required Credit Hours in Biology 31 cr

Or equivalents:

BIO 111	Introduction to Biology (4)
BIO 212	Introduction to Organismal Biology and Diversity (4)
BIO 213	Introduction to Ecology, Evolution, and Behavior (4)
BIO 214	Introduction to Cell Biology (4)
BIO 303	Genetics (4)
BIO 315	Ecology (4)
BIO 405	Organic Evolution

Select one course from the following:

BIO 308/ BIO	Human Anatomy and Physiology and Laboratory (4)
309	
BIO 402	Comparative Animal Physiology (4)

Total Required Credit Hours in Professional Education 30 cr

SPF 303	Educational Psychology: Middle and Secondary Education
EDU 416	Teaching Literacy in Middle and Secondary Schools
EXE 372	Foundations of Teaching Adolescents with Disabilities
SCI 323	Science as Inquiry
SCI 445	Literacy for Teaching Science
SED 200	Field Experience in Secondary Science Education
SED 310	Teaching Science in a Middle School
SED 401	Techniques for Teaching Laboratory Activities in the Secondary Science Classroom
SED 405	Methods and Materials for Teaching Secondary School Science
SED 409	Seminar in Secondary Science Education

Total Required Credit Hours in Student Teaching 12 cr

SED 407	Practice Teaching Science in the Middle School (6)
SED 408	Practice Teaching Science in the High School (6)

Total Required Credit Hours in Other Fields for Certification 27-35 cr

A. One Year (or Equivalent) of Foreign Language (0-6 cr)

B. Cognate Science 23-25 cr

CHE 111/	Fundamentals of Chemistry I and II (4,4)
CHE 112	
GES 101	Introductory Geology
GES 103	Introductory Geology Laboratory (1)
PHY 107/	University Physics I and II (4,4)
PHY 108	
OR	
PHY 111/	University Physics I, II (5,5)
PHY 112	

Select one course from the following:

GES 111	General Oceanography
GES 131	Introductory Astronomy
GES 241	Meteorology

Mathematics Courses

4 cr

MAT 126 Calculus (or equivalent) (4)

Total Required Credit Hours **100 cr**

All courses are 3 credit hours unless otherwise indicated.

**BUSINESS AND MARKETING EDUCATION
(M.S.Ed.)****OMaster of Science in Education Program**

Program Code: MSED-ED

Major Code: BME

HEGIS 0838.01

Department of Career and Technical Education/Business and Marketing Education

National Council for Accreditation of Teacher Education (NCATE) Accredited,

N. John Popovich, *Chair*

Bacon Hall 316S, (716) 878-4717

www.buffalostate.edu/educationalfoundations

The business and marketing education program is designed to develop, extend, and enhance the professional competencies of business and marketing education teachers. Completion of the program provides a master of science in education degree and satisfies the requirements for eligibility to apply for permanent/professional certification to teach business and marketing in New York State.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.5 (4.0 scale).
2. A New York State Certificate of Qualification (CQ), provisional certificate, or initial certificate to teach business or distributive education.

Program Requirements**Required Professional Courses** **18 cr**

BME 600	Principles of Business and Marketing Education
BME 601	Research Seminar
or	
SPF 689	Methods and Techniques of Educational Research
BME 602	Curriculum Development and Planning in Business and Marketing Education
BME 604	Improving Instruction in Business and Marketing
BME 605/SPF 611	Evaluation in Business and Marketing Education
CTE 690 or SPF 690	Master's Project

Elective Courses **15 cr**

Courses by advisement that are appropriate in terms of the career goals of the student

Total Required Credit Hours **33 cr**

All courses are 3 credit hours unless otherwise indicated.

**BUSINESS AND MARKETING EDUCATION
(PTCP)****Postbaccalaureate Teacher Certification Program**

Program Code: UG PBC-ED

Major Code: BME

HEGIS 0838

Department of Career and Technical Education/Business and Marketing Education

National Council for Accreditation of Teacher Education (NCATE) Accredited

N. John Popovich, Ed.D. *Chair*

Bacon Hall 316S, (716) 878-4717

www.buffalostate.edu/educationalfoundations

This program is designed for students who have earned a baccalaureate or master's degree in business and marketing education or a business-related field from an accredited college or university, and intend to complete the coursework required for New York State certification to teach business and marketing in secondary schools. After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements:

1. A bachelor's or master's degree from an accredited college or university, with a concentration of at least 36 credit hours in business and marketing education or related courses, with a minimum GPA of 2.5 (4.0 scale). The department will accept up to 6 credit hours in computer information systems and/or economics. All other courses should match the required courses in the undergraduate business and marketing education program.
2. Two letters of recommendation to the Educational Foundations Department.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements**Business and Marketing Education Courses** **36 cr**

Accepted courses per review of Business Department

Professional Courses **33 cr**

BME 301	Principles of Business and Marketing Education
BME 302/CTE 302	Curriculum and Evaluation in Business and Marketing Education
BME 303	Instructional Strategies in Business and Marketing Education
BME 411/CTE 404	Applied Teaching Methods in Business and Marketing
BME 415	Student Teaching (6)
BME 416	Student Teaching (6)

	Educational Psychology/Secondary
SPF 303	
EDU 416	Teaching Literacy in Secondary Schools
EXE 100/ CTE 421	Nature and Needs of Individuals with Special Needs

Total Required Credit Hours **69 cr**

All courses are 3 credit hours unless otherwise indicated.

CAREER AND TECHNICAL EDUCATION (M.S.Ed.)

Master of Science in Education

Program Code: MSED-ED

Major Code: CTE

HEGIS 0839.03

Department of Career and Technical Education/Business and Marketing Education

National Council for Accreditation of Teacher Education
(NCATE) Accredited

N. John Popovich, *Chair*

Bacon Hall 316S, (716) 878-4717

www.buffalostate.edu/educationalfoundations

The master's program in career and technical education (CTE) extends and improves the professional competencies of CTE teachers. Candidates interested in becoming certified as coordinators of diversified cooperative work-study programs may take the two related required courses: CTE 550 and CTE 555.

Advisement: Students are assigned academic advisers to plan programs based on individual needs and degree requirements. All courses should be selected by advisement.

Admission Requirement: All applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Courses 6 cr

BME 602	Curriculum Development and Planning in Business and Marketing Education
SPF 611/BME 605	Evaluation in Occupational Education

Elective Courses 15-18 cr

Select five to six courses from the following:

CTE 530	Career Education: Rationale, Nature, and Concepts
CTE 536	Contemporary Methodology
CTE 550	Organization of Diversified Cooperative Work-Study Programs
CTE 555	Operation of Diversified Cooperative Work-Study Programs
CTE 600	Contemporary Issues in Occupational Education
CTE 601	Supervision of Vocational Education
CTE 602	Administration of Vocational Education
CTE 603	Selected Topics in the Organization, Administration, and Supervision of CTE
CTE 604	Technical Project
CTE 606	History and Philosophy of Occupational Education
CTE 620	Structure of Occupational Programs

CTE 625	Interrelationships of Labor, Management, and Occupational Education
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Research and Master's Project 6 cr

BME 601/ SPF 689	Research Seminar: Occupational Education
CTE 690	Master's Project

Total Required Credit Hours 30 cr

All courses are 3 credit hours unless otherwise indicated.

CAREER AND TECHNICAL EDUCATION (PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-ED

Major Code: CTE

HEGIS 0839.03

Department of Career and Technical Education/Business and Marketing Education

National Council for Accreditation of Teacher Education
(NCATE) Accredited

N. John Popovich, *Chair*

Bacon Hall 316S, (716) 878-4717

www.buffalostate.edu/educationalfoundations

This program is designed for students who have earned a baccalaureate degree in an area other than career and technical education (CTE) from an accredited college or university, and intend to complete the coursework required for New York State certification as a career and technical teacher.

This postbaccalaureate teacher certification program prepares career and technical teachers for teaching positions in high schools, vocational schools, technical institutes, correctional facilities, and community colleges. It provides theoretical and practical preparation in planning, instructing, and managing the learning environment for students who have or will have extensive work experience in a specific trade.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

This program is offered during the evening at Buffalo State. Some courses are offered via interactive distance learning at off-campus BOCES sites.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements:

1. A bachelor's degree from an accredited college or university in an area other than career and technical education, with a minimum cumulative GPA of 2.5 (4.0 scale).

- Minimum of one year of work experience in a CTE area.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Occupational Competency Exams 30 cr

CTE 100	Theory (or equivalent) (15)
CTE 200	Practice (or equivalent) (15)

Required Courses 36 cr

CTE 301/BME 301	Foundations of Career and Technical Subjects Education
CTE 302/BME302	Course Organization
CTE 306	Laboratory Management
CTE 311	Career Mentoring Internship
CTE 350	School and Community Relationship Field Experience
CTE 402	Assessment Techniques in Career and Technical Subjects
CTE 404/BME411	Methods of Teaching Career and Technical Subjects
CTE 413	Student Teaching in Career and Technical Education (6)
CTE 421	Occupational Education for Individuals with Special Needs
SPF 303	Educational Psychology/Secondary
OR	
SPF 353	Human Development during Early Adolescence

Total Required Credit Hours 36-66 cr

All courses are 3 credit hours unless otherwise indicated.

CHEMISTRY EDUCATION (7-12; M.S.ED.)

Master of Science in Education Program

Program Code: MSED-NS
Major Code: CHS
HEGIS 1905.01

Chemistry Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

M. Scott Goodman, *Chair*

Science Building 267, (716) 878-5204

www.buffalostate.edu/chemistry

The master of science in chemistry education (7-12) is designed for teachers who wish to combine advanced work in chemistry with graduate work in education.

Admission Requirements:

- A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.6 (4.0 scale) in chemistry courses.
- A New York State Certificate of Qualification (CQ), provisional certificate, or initial certificate to teach at the secondary level.
- A minimum of 24 credit hours of undergraduate chemistry courses, including one year of physical chemistry.

- A minimum of one year each of calculus, general physics, biology, and geosciences.

- Three letters of recommendation.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Courses 9 cr

Select from the following:

CHE 540	Special Topics in Organic Chemistry
CHE 550	Advanced Physical Chemistry (4)
CHE 560	Special Topics in Inorganic Chemistry
CHE 620	Kinetics and Reaction Mechanisms (4)
CHE 625	Physical Methods of Structure Determination (4)
CHE 670	Biomolecules: Proteins, Nucleic Acids, and Enzymes
CHE 680	Advanced Analytical Chemistry

Science Education Courses 9 cr

SCI 628	Seminar in Secondary Science Education
SCI 632	Curricular Trends in Science Teaching in the Secondary School
SCI 685	Evaluation in Science Education

Elective Courses 3-6 cr

Research and Master's Project or Master's Thesis 6 cr

Select from the following:

CHE 690*	Master's Project in Chemistry
and	
SCI 694	Research Methods and Techniques in Science Education

or

CHE 795*	Master's Thesis in Chemistry (6)
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*Can be counted toward both the 15-credit chemistry requirement and the 6-credit research requirement.

Total Required Credit Hours 30 cr

All courses are 3 credit hours unless otherwise indicated.

CHEMISTRY EDUCATION (7-12; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-NS

Major Code: CGS

HEGIS 1905.01

Chemistry Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

M. Scott Goodman, *Chair*

Science Building 267, (716) 878-5204

www.buffalostate.edu/chemistry

The chemistry education (7-12) postbaccalaureate teacher certification program leads to eligibility for a New York State initial certificate to teach both chemistry and general science in grades 7-12.

This program is designed for students who have earned a baccalaureate degree in chemistry or a related field from an accredited college or university and intend to complete the coursework required for New York State certification to

teach chemistry in secondary schools or general science in middle schools.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

A minimum GPA of 2.75 in required chemistry courses is needed for admission to SED 405, SED 407, and SED 408.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements: A bachelor's degree in chemistry or a related area from an accredited college or university with a minimum cumulative GPA of 2.75 (4.0 scale) in required chemistry courses.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

NOTE: Undergraduate or post-baccalaureate candidates seeking New York State Teacher Certification are strongly advised to review the Master of Science Education in Science Education degree program. This new program is designed to enable students to quickly and efficiently develop both the knowledge and skills required for teaching; the program leads to initial NYS certification for those candidates already holding undergraduate science degrees. Candidates currently in undergraduate or post-baccalaureate programs should strongly consider transitioning to the new program

Program Requirements

Required Chemistry Courses or equivalents 43 cr

CHE 111/ CHE 112	Fundamentals of Chemistry I and II (8)
CHE 201/ CHE 202	Organic Chemistry I and II (6)
CHE 203/ CHE 204	Organic Chemistry Laboratory I and II (2)
CHE 301	Analytical Chemistry (4)
CHE 305/ CHE 306	Physical Chemistry I and II (6)
CHE 307/ CHE 308	Physical Chemistry Laboratory I and II (2)
CHE 310	Literature of Chemistry (1)
CHE 403	Instrumental Analysis (4)
CHE 460	Inorganic Chemistry
CHE 461	Inorganic Chemistry Laboratory (2)
CHE 470	Biochemistry
CHE 471	Biochemistry Techniques (2)

Professional Education Courses 24 cr

SPF 303	Educational Psychology: Middle and Secondary Education
EDU 416	Teaching Literacy in Middle and Secondary Schools
EXE 372	Foundations of Teaching Adolescents with Disabilities
SCI 445	Literacy for Teaching Science (or equivalent)
SED 200	Field Experience in Secondary Science Education
SED 401	Techniques for Teaching Laboratory Activities in the Secondary Science Classroom

SED 405	Methods and Materials for Teaching Secondary School Science
SED 409	Seminar in Secondary Science Education

Student Teaching Courses 12 cr

SED 407	Practice Teaching Science in the Secondary School I (6)
SED 408	Practice Teaching Science in the Secondary School II (6)

Courses in Other Fields for Certification 42 cr

A. Foreign Language Courses 6 cr

One year or equivalent

B. Cognate Science Courses 25 cr

GES 101	Introductory Geology
GES 103	Introductory Geology Laboratory (1)
PHY 111/ PHY 112	University Physics I and II (5,5)

Select two courses from the following:

BIO 212	Introduction to Organismal Biology and Diversity (4)
BIO 213	Introduction to Ecology, Evolution, and Behavior (4)
BIO 211	Introduction to Cell Biology and Genetics (4)

or

BIO 214	Introduction to Cell Biology (4)
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Select one course from the following:

GES 111	General Oceanography
GES 131	Introductory Astronomy
GES 241	Meteorology

C. Mathematics Courses 11 cr

MAT 161	Calculus I (4)
MAT 162	Calculus II (4)
MAT 263	Calculus III

Total Required Credit Hours 121 cr

¹Selected under advisement

All courses are 3 credit hours unless otherwise indicated.

CHEMISTRY EDUCATION (7–12; 5–6 EXTENSION; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-NS

Major Code: CGX

HEGIS 1905.01

Chemistry Department

National Council for Accreditation of Teacher Education (NCATE)

Accredited

M. Scott Goodman, *Chair*

Science Building 267, (716) 878-5204

www.buffalostate.edu/chemistry

The chemistry education (7–12 with 5–6 extension) postbaccalaureate teacher certification program leads to eligibility for a New York State initial certificate to teach both chemistry and general science in grades 5–12.

This program is designed for students who have earned a baccalaureate degree in chemistry or a related field from an accredited college or university and intend to complete the coursework required for New York State certification to

teach chemistry in secondary schools or general science in middle schools.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

A GPA of 2.75 in required chemistry courses is needed for admission to SED 405, SED 407, and SED 408.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements: A bachelor's degree in chemistry or a related area from an accredited college or university with a minimum GPA of 2.75 (4.0 scale) in required chemistry courses.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

NOTE: Undergraduate or post-baccalaureate candidates seeking New York State Teacher Certification are strongly advised to review the Master of Science Education in Science Education degree program. This new program is designed to enable students to quickly and efficiently develop both the knowledge and skills required for teaching; the program leads to initial NYS certification for those candidates already holding undergraduate science degrees. Candidates currently in undergraduate or post-baccalaureate programs should strongly consider transitioning to the new program

Program Requirements

Required Chemistry Courses or equivalents 43 cr

CHE 111/ CHE 112	Fundamentals of Chemistry I and II (8)
CHE 201/ CHE 202	Organic Chemistry I and II (6)
CHE 203/ CHE 204	Organic Chemistry Laboratory I and II (2)
CHE 301	Analytical Chemistry (4)
CHE 305/ CHE 306	Physical Chemistry I and II (6)
CHE 307/ CHE 308	Physical Chemistry Laboratory I and II (2)
CHE 310	Literature of Chemistry (1)
CHE 403	Instrumental Analysis (4)
CHE 460	Inorganic Chemistry
CHE 461	Inorganic Chemistry Laboratory (2)
CHE 470	Biochemistry
CHE 471	Biochemistry Techniques (2)

Professional Education Courses 30 cr

SPF 303	Educational Psychology: Middle and Secondary Education
EDU 416	Teaching Literacy in Middle and Secondary Schools
EXE 372	Foundations of Teaching Adolescents with Disabilities
SCI 323	Science as Inquiry
SCI 445	Literacy for Teaching Science (or equivalent)
SED 200	Field Experience in Secondary Science Education
SED 310	Teaching Science in a Middle School

SED 401	Techniques for Teaching Laboratory Activities in the Secondary Science Classroom
SED 405	Methods and Materials for Teaching Secondary School Science
SED 409	Seminar in Secondary Science Education

Student Teaching Courses 12 cr

SED 407	Practice Teaching Science in the Secondary School (6)
SED 408	Practice Teaching Science in the Secondary School (6)

Courses in Other Fields for Certification 42 cr

A. Foreign Language Courses 6 cr

One year or equivalent

B. Cognate Science Courses 25 cr

GES 101	Introductory Geology
GES 103	Introductory Geology Laboratory (1)
PHY 111/ PHY 112	University Physics I and II (5,5)

Select two courses from the following:

BIO 212	Introduction to Organismal Biology and Diversity (4)
BIO 213	Introduction to Ecology, Evolution, and Behavior (4)
BIO 211	Introduction to Cell Biology and Genetics (4)
or	
BIO 214	Introduction to Cell Biology (4)

Select one course from the following:

GES 111	General Oceanography
GES 131	Introductory Astronomy
GES 241	Meteorology

C. Mathematics Courses 11 cr

MAT 161	Calculus I (4)
MAT 162	Calculus II (4)
MAT 263	Calculus III

Total Required Credit Hours 127 cr

¹Selected under advisement
All courses are 3 credit hours unless otherwise indicated.

CHILDHOOD AND EARLY CHILDHOOD CURRICULUM AND INSTRUCTION (M.S.Ed.)

Master of Science in Education Program

Program Code: MSED-ED
Major Code: CUR
HEGIS 0829

Elementary Education and Reading Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

Nancy A. Chicola, *Chair*

Ellen S. Friedland, *Assistant Chair for Graduate Programs*
Bacon Hall 302, (716) 878-5916

www.buffalostate.edu/elementaryeducation

Teachers with New York State initial teaching certification in childhood and/or early childhood education, or provisional teacher certification in elementary education may apply for admission to the master's program in

curriculum and instruction. Students who successfully complete this master of science in education program may apply for professional teaching certification (for those with initial certification) or permanent teaching certification (for those with provisional certification) from the New York State Department of Education.

Admission Requirements:

1. A bachelor’s degree from an accredited college or university with a minimum cumulative GPA of 2.5 (4.0 scale).
2. A New York State Certificate of Qualification (CQ) or provisional certification in elementary education, or initial certification in childhood and/or early childhood education. Recent graduates or students who are completing their undergraduate programs at the time of application should write in the anticipated date of certification on the admission application. Students must submit proof of certification to the Elementary Education and Reading Department by the time they apply for degree candidacy (after completing 6 credits and before completing 12 credits).
3. A word-processed statement addressing the following:
 - a. Describe what you see as your strengths as a teacher.
 - b. Describe the professional challenge(s) you encountered during your field experiences/first classroom experiences that you hope to address in your graduate work.
 - c. Discuss what you hope to learn in your graduate program. If you know which concentration you are selecting, please describe your reasons for selecting it.

The statement will be evaluated according to the following criteria:

 1. Organization
 2. Conventions of language
 3. Content

Note: Please sign and date the statement.
4. Professional resume'
5. Three letters of reference on special department forms that attest to the applicant’s potential as a graduate student. Please note that two references must be from college professors/instructors. Department forms may be downloaded at <http://www.buffalostate.edu/graduateschool/supplementalforms.xml>

These are the minimum criteria for admission; satisfaction of these criteria does not guarantee admission to the program. In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Additional Admission Information:

Each applicant will be evaluated in terms of his or her baccalaureate degree, academic performance, letters of recommendation, experiential background, and substance and quality of the personal statement. Please refer to the Graduate Admissions Committee rubric (attached to the supplemental application information) used for evaluating applications.

Program Requirements

Required		6cr
EDU 501	Seminar for the Reflective Teacher (to be taken as first course)	
EDU 620	Teaching and Learning in Diverse Elementary School Classrooms	
Content Courses		12cr
Can be taken any time in your program after or concurrent with EDU 501		
EDU 513	Theory, Research and Practice in Literacy Instruction or equivalent by advisement	
EDU 651	Theory, Research and Practice in Mathematics Instruction or equivalent by advisement	
EDU 654	Theory, Research and Practice in Social Studies Instruction or equivalent by advisement	
EDU 671	Theory, Research and Practice in Science Instruction or equivalent by advisement	
Concentration (9-12 credits) Select one of the following concentrations. Courses can be taken any time in your program or concurrent with EDU 501.		
<i>Literacy</i>		
EDU 613	Assessment of Literacy for the Classroom Teacher	
Required:	(prerequisites EDU 513 and one other literacy course)	
Choose two:		
EDU 535	Teaching Writing: B-12	
EDU 609	Literacy Instruction in the Upper Grades	
EDU 611	Literacy Instruction in the Primary Grades	
EDU 612	Developing Literacy Through Literature	
<i>Early Childhood</i>		
EDU 543	(Appropriate for those without Early Childhood Certification) Curriculum for the Young Child	
Required		
EDU 626	Integrating the Content Areas in the Teaching of Young Children (prerequisite EDU 543)	
Required		
Choose one:		
EDU 528	Families and Early Childhood Programs	
EDU 611	Literacy Instruction in the Primary Grades	
<i>Gifted/Talented</i>		
EDU/CRS 509	All courses are required. The Gifted Individual	
CRS 559	Principles in Creative Problem Solving	
EDU/CRS 621	Curriculum Development in Gifted, Talented and Creative Education. (prerequisite EDU/CRS 509)	
EDU 619	Practicum in Gifted, Talented and Creative Education (prerequisites EDU/CRS 509, CRS 559,EDU/CRS 621) (If you select this concentration and complete the other NYSED requirements for Gifted and Talented certification, Buffalo State will recommend you for certification.)	
<i>Educational Technology</i>		
EDU 672	Advanced Educational Technology for K-6 Classrooms	
Required		

Choose two:

EDC 500	Microcomputer Systems
EDC 601	Instructional Technologies
EDC 603	Instructional Design and Problem Solving with Technology (prerequisite EDC 601)
EDC 604	Authoring for Educators (prerequisite 601)
EDC 606	Internet for Educators (prerequisite EDC 601)
EDC 614	Educational Graphics & Animation (prerequisite EDC 601)

Educational Leadership

SPF 689	Methods and Techniques of Educational Research
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Required

EDL 552	Public School Law
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Required

Choose one:

EDL 607	Site-based Leadership
EDU 670	Principles of Curriculum Design

Elective-Select one from the list (3 credits). (Prerequisites may be required for some of the following courses). Other courses may be accepted through advisement only. Students who select the Gifted and Talented concentration do not need an elective to obtain the 33 required credits for completion of the program.

CRS/EDL559	Principles in Creative Problem Solving
EDC 500	Microcomputer Systems
EDC 601	Instructional Technologies
EDC 604	Authoring for Educators
EDC 606	Internet for Educators
EDC 614	Educational Graphics & Animation
SPF 503	Educational Psychology
SPF 528	Human Relations
SPF 611	Evaluation in Education
SPF 689	Methods and Techniques of Educational Research
EDL 552	Public School Law
EDL 652	Special Education Law
EDL 607	Site-based Leadership
EDU/CRS 509	The Gifted Individual
EDU 528	Families and Early Childhood Programs
EDU/EDL 534	Holistic Curriculum
EDU 535	Teaching Writing: B-12
EDU 574	Elementary School Curriculum
EDU/EXE 577	Teaching Individuals with Exceptionalities in the Regular Classroom
EDU 609	Literacy Instruction in the Upper Grades
EDU 611	Literacy Instruction in the Primary Grades
EDU 612	Developing Literacy Through Literature
EDU 613	Assessment of Literacy for the Classroom Teacher (prerequisite: EDU 513 and one other graduate literacy class)
EDU 640	Conflict Resolution and Peaceable Schools
EDU 654	Theory, Research, and Practice in Social Studies Instruction
EDU 670	Principles of Curriculum Design
EDU 672	Advanced Educational Technology for K-6 Classrooms
EXE 500	Individuals with Special Needs(Cannot be taken by Buffalo State graduates)
HIS 500	Studies in American History
SSE 605	Topics for In-Service Education

NOTE: Other courses acceptable by advisement ONLY.

EDU 690 Master's Project (Culminating Course)

Required

Total Required Credit Hours 33-36 cr (15 credits at 600-level)

All courses are 3 credit hours unless otherwise indicated.

CHILDHOOD AND EARLY CHILDHOOD EDUCATION (BIRTH–GRADE 6; M.S.Ed.)

Master of Science in Education Program

Childhood & Early Childhood Education Including Initial Teacher Certification (MIITC)*

Program Code: MSED-ED

Major Code: CEC

HEGIS 0802

Elementary Education and Reading Department

National Council for Accreditation of Teacher Education (NCATE)

Accredited

Accredited by Association of Childhood Education International

Nancy A. Chicola, *Chair*

Ellen S. Friedland, *Assistant Chair for Graduate Programs*

Bacon Hall 302, (716) 878-5916

www.buffalostate.edu/elementaryeducation

*Master Including Initial Teacher Certification

This program is designed for students who have an undergraduate degree in one of the liberal arts and sciences. It leads to an M.S. in education and eligibility to apply for initial certification in childhood and early childhood education from the New York State Department of Education. To receive initial certification, students must pass the applicable New York State certification exams and fulfill other New York State certification requirements.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with an academic major in one of the liberal arts or sciences.
2. A minimum cumulative GPA of 2.5 (4.0 scale)
3. Meeting with a department advisor to review college transcripts to determine eligibility prior to applying to the program.
4. A completed Application Requirement Worksheet (included in the application packet) detailing:
 - a. College-level work in each of the following: English, mathematics, science, and social studies. Each applicant will have completed this requirement as an undergraduate or will be required to complete 6 credit hours of study in each of these four disciplines. Basic college writing courses (ENG 101 or ENG 102) do not count toward the English requirement.
 - b. Two years of high school or two semesters of college study in one foreign language (high school transcript should be submitted with application).
5. A word-processed statement addressing the following:
 - a. Reasons for wanting to become a childhood/early childhood teacher.

b. Related professional experiences.

The statement will be evaluated according to the following criteria:

1. Organization
2. Conventions of language
3. Content

Note: Please sign and date the statement.

6. Three letters of reference on special department forms that attest to the applicant's potential as a graduate student and as a teacher. Please note that two references must be from college professors/instructors. Department forms may be downloaded at <http://www.buffalostate.edu/graduateschool/supplementalforms.xml>.

These are the minimum criteria for admission; satisfaction of these criteria does not guarantee admission to the program. In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Additional Admission Information:

Each applicant will be evaluated in terms of his or her baccalaureate degree, academic performance, letters of recommendation, experiential background, and substance and quality of the personal statement. Please refer to the Graduate Admissions Committee rubric (attached to the supplemental application information) used for evaluating applications.

Program Requirements

Seminar	3 cr
EDU 501 Seminar for the Reflective Teacher (To be taken early in the program)	
Multicultural Perspectives and Diversity Course	3 cr
Choose one:	
SPF 500 Multicultural Education	
EDU 620 Teaching and Learning in Diverse Elementary School Classrooms	
SSE 640 The Sociohistorical Context and Issues of Diversity in American Schooling	
Foundation Course	3 cr
SPF 503 Educational Psychology	
Exceptional Education Course	3 cr
Choose one:	
EDU 577 Teaching Individuals with Exceptionalities in the Regular Classroom	
EXE 500 Individuals with Special Needs	
Curriculum	12 cr
EDU 528 Families and Early Childhood Programs	
EDU 543 Curriculum for the Young Child	
EDU 654 Theory, Research, and Practice in Social Studies Instruction	
EDU 672 Advanced Technology for K-6 Classrooms	
Literacy Course	3 cr
EDU 546 Theory, Research and Practice in Language Arts Instruction (Must be taken prior to EDU 511)	
Methods and Practicum Courses	27 cr
EDU 511 Methods of Teaching English Language Arts (6)	

	(Prerequisites apply; must be taken prior to EDU 682)
EDU 626	Integrating the Content Areas in the Teaching of Young Children (Includes a 40- hour Field Experience)(Prerequisite EDU 543)
EDU 682	Teaching Math & Science in the Elementary School (6) (Prerequisites apply)
EDU 500	Practicum in Childhood Education (6)
EDU 510	Practicum in Early Childhood Education (6)

Research and Master's Project	6 cr
SPF 689	Methods and Techniques of Educational Research (Must be taken prior to EDU 690)
EDU 690	Master's Project (Culminating Course)
Total Required Credit Hours:	60 cr
All courses are 3 credit hours unless otherwise indicated.	

CREATIVE STUDIES (M.S.)

Master of Science Program

Program Code: MS-SP
Major Code: CRS
HEGIS 4903

Creative Studies Department

<http://www.buffalostate.edu/creativity>
Gerard J. Puccio, *Chair*
Chase Hall 248, (716) 878-6223
www.creativity.buffalostate.edu

The Creative Studies Department and its International Center for Studies in Creativity credential creativity through a diverse menu of programs that cultivate skills in creative thinking, innovative leadership practices, and problem-solving techniques. The department, through the process of creative thought, enhances an individual's ability to imagine new ideas by learning how to envision that which cannot be immediately seen. This internationally recognized academic department offers a series of courses that lead to a master of science degree in creative studies or a graduate certificate in creativity and change leadership (see next program). These unique graduate programs attract students from business, education, and many diverse fields. Short summer institutes in combination with distance courses now make the graduate certificate and full master's degree available to busy professionals both within and outside Western New York. Students from across the U.S. and international students from such countries as South Africa, Brazil, Canada, Italy, England, Pakistan, and Singapore have participated in these programs.

The combination of required and elective courses make this graduate program ideal for educators who seek permanent and professional licensure through a degree that offers a unique and valuable set of knowledge and skills (consult with Buffalo State's Teacher Certification Office for specific issues regarding licensure in New York State). Teachers who hold Master's degrees in Creative Studies work in school districts throughout Western New York.

The required courses give all students an opportunity to develop practical leadership, facilitation, training/teaching, and problem-solving skills, while the selection of electives

allows students to concentrate on acquiring knowledge and skills in another area of specialization (e.g., education, business, organizations, communications). The creative studies program challenges students to develop their creative talents and to become leaders of change in their professional lives.

Introductory-level graduate courses may be taken by students from other departments at Buffalo State to enrich their majors. Students from business, education, and a variety of other disciplines find this coursework useful. Multidisciplinary degree students integrate creativity courses to fulfill part of their requirements for a master's degree.

The master's degree program consists of three major strands of coursework. The Foundations of Creativity strand surveys various approaches to assessing and defining creativity, as well as a variety of models and theories associated with understanding the nature of creative behavior. The introductory course to this strand is CRS 560. The Creative Problem Solving and Facilitation strand emphasizes ways to deliberately foster creative potential by helping the student to learn, apply, and teach specific creative problem-solving tools. The introductory course to this strand is CRS 559. The third strand, Research, Development and Dissemination, includes involvement with the department's program of research, development, and dissemination. Students pursue a master's project or thesis that makes a contribution to the emerging discipline of creativity studies. The introductory course to this strand is CRS 580. Students may opt to complete a comprehensive examination and portfolio review in place of the project or thesis.

The department hosts an annual conference called the Creativity Experts Exchange <http://www.buffalostate.edu/creativity/x1347.xml>. Participation is open to all and provides an excellent venue to deepen knowledge in regard to emerging creativity topics and to meet the Creative Studies community.

To explore some of the topics covered in the Creative Studies curriculum view the Creativity 101 video series <http://www.buffalostate.edu/creativity/creativity101.xml> developed by the department.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.5 (4.0 scale). Preference is shown to those with GPAs of 3.0 or higher.
2. A written statement of the applicant's professional or educational goals and how a degree in creativity studies supports these goals. The recommended length for the letter of intent is two to three pages.
3. Brief biographical sketch, one to two paragraphs, that provides a summary of the applicant's accomplishments, areas of expertise, and experiences.
4. Two letters of reference (pdf reference form available as download <http://www.buffalostate.edu/graduateschool/supplementalforms.xml>; alternative formats available through department <http://www.buffalostate.edu/creativity/admission.xml>)

5. Five years of professional experience (distance program applicants only; distance students must begin with the certificate program).

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Graduate Certificate Program and Distance Graduate Program for Professionals

Those interested in pursuing any one of the program strands but not the full master's degree may complete the State University of New York graduate certificate program in creativity and change leadership 59; see next program. Graduate certificates are awarded by the State University of New York upon completion of at least 18 credit hours (six courses).

Program Requirements

Required Courses		21 cr
CRS 559	Principles in Creative Problem Solving	
CRS 560	Foundations of Creative Learning	
CRS 580	Creativity Assessment: Methods and Resources	
CRS 610	Facilitation of Group Problem Solving	
CRS 625	Current Issues in Creative Studies	
CRS 635	Creativity and Change Leadership	
CRS 670	Foundations in Teaching and Training Creativity	
Elective Courses		6-12 cr
Master's Project, Master's Thesis, or Comprehensive Exam		0-6 cr
<i>Select one option:</i>		
Comprehensive Exam (0)		
CRS 690	Master's Project	
CRS 795	Master's Thesis (6)	
Total Required Credit Hours		33 cr

All courses are 3 credit hours unless otherwise indicated.

**CREATIVITY AND CHANGE LEADERSHIP
(GRADUATE CERTIFICATE)**

Graduate Certificate Program

Program Code: GRCT-SP
Major Code: CRT
HEGIS 4903

Creative Studies Department

<http://www.buffalostate.edu/creativity>
Gerard J. Puccio, *Chair*
Chase Hall 248, (716) 878-6223
www.creativity.buffalostate.edu

Ongoing development of leadership models during the last century has drawn a close connection between creativity and leadership. At the core of many current leadership models is the concept of change—how to foster and manage it. This concept is clearly reflected in the language used to describe the essence of leadership today. For instance, many leadership theories focus on visionary, transformational, and change leadership. In addition, the view that leadership consists of a set of specific attributes

that one has or does not have has shifted to a view that leadership skills can be learned and developed.

The ability to think creatively is an essential leadership skill. Often, a leader must act as a catalyst for change and when we engage in creative thinking our goal is to bring about change, i.e., to bring about an idea, solution or concept that helps us to meet an important goal or to address a complex challenge. Thus, it is imperative for leaders to learn how to facilitate their own creative thinking, as well as those they work with, to bring about productive change (i.e., new products, services, resolution to problems, opportunities, etc.).

The purpose of the State University of New York graduate certificate program in creativity and change leadership is to provide students with the knowledge and skills that can put them in a better position to operate as change leaders. Leadership is a process. This certificate program teaches students how to better manage this process.

The program applies more than 50 years of research, development, and practice in the field of creativity toward leadership development. The program is not designed strictly for those in formal leadership roles; anyone can learn how to positively influence others as a leader. Leadership is about action, not position.

After completing this graduate certificate program, students can submit an application to continue with the master's degree in creativity (i.e., all courses taken to fulfill the certificate can be applied to the master's degree).

The master's degree and certificate program are offered on the Buffalo State campus and to distance students. Students who wish to earn a master's degree in creativity via distance must begin in the certificate program. Distance students are required to have five years of professional experience. For a description of the distance program (i.e., graduate certificate in creativity and change leadership for professionals) go to the department's webpage <http://www.http://creativity.buffalostate.edu/creativity-and-change-leadership-graduate-certificate-program-distance>.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.5 (4.0 scale). Preference is given to those with GPAs of 3.0 or higher.
2. A written statement of the applicant's professional or educational goals and how a graduate certificate in creativity supports these goals. The recommended length for the letter of intent is two to three pages.
3. Brief biographical sketch, one to two paragraphs, that provides a summary of the applicant's accomplishments, areas of expertise, and experiences.
4. Two letters of reference (pdf form available as a download <http://www.buffalostate.edu/graduateschool/supplementalforms.xml>; alternative formats of reference form also available through department <http://www.buffalostate.edu/creativity/x525.xml>).
5. Five years of professional experience (distance learning program applicants only).

6. Successful review by the Graduate Admissions Committee.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Courses		15 cr
CRS 559	Principles in Creative Problem Solving	
CRS 560	Foundations of Creative Learning	
CRS 580	Creativity Assessment: Methods and Resources	
CRS 610	Facilitation of Group Problem Solving	
CRS 635	Creativity and Change Leadership	
Elective Course		3 cr
<i>Select one course from the following:</i>		
CRS 625	Current Issues in Creative Studies	
CRS 670	Foundations in Teaching and Training Creativity	
Total Required Credit Hours		18 cr
All courses are 3 credit hours unless otherwise indicated.		

CRIMINAL JUSTICE (M.S.)

Master of Science Program

Program Code: MS-SP
 Major Code: CRJ
 HEGIS 2105

Criminal Justice Department

Michael A. Cretacci, *Chair*
 Classroom Building C114, (716) 878-4517
www.buffalostate.edu/criminaljustice

This program integrates theory, research, and practice that are grounded in the social sciences. The academically rigorous curriculum prepares students for leadership positions in professional criminal justice fields or for advanced graduate study.

Program graduates have a broad base of knowledge in criminal justice and related disciplines; academic skills in critical thinking, conceptualization and analysis; and an in-depth understanding of the complexities of decision making, policy implementation, and planned organizational change in criminal justice.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale) in the last 60 credit hours.
2. A written statement of intent that includes the applicant's preparation for graduate study (guidelines available from the department).
3. If minimum requirements are not met, the graduate faculty may grant an applicant conditional admission to the program as a premajor if the applicant has a minimum cumulative GPA of 2.75 (4.0 scale)
AND
 - a. A minimum of five years of full-time work experience in the criminal justice field. OR

- b. A minimum combined score of 290 on the Verbal and Quantitative sections of the Graduate Record Examination (GRE).
4. Applications are reviewed on a continual basis for the fall and spring semesters.

Program Prerequisites:

1. An undergraduate descriptive and inferential statistics course from a four-year institution with a grade of C or above.
2. An undergraduate research methods course from a four-year institution.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Core Courses **9 cr**

CRJ 501	Theoretical Perspectives on Crime/Criminal Justice
CRJ 504	Research Methods in Criminal Justice
CRJ 603	Administration of Criminal Justice

Elective Courses **24-27 cr**

Select from the following:

CRJ 508	History of Criminal Justice
CRJ 590	Independent Study
CRJ 601	Correctional Strategies
CRJ 602	Organizational Behavior and Management Process in Criminal Justice
CRJ 604	Criminal Courts
CRJ 605	Law and Social Control
CRJ 606	Law Enforcement Issues
CRJ 608	Special Topics in Criminal Justice
CRJ 620	White Collar Crime
CRJ 622	Juvenile Justice
CRJ 624	Computer Application
CRJ 625	Race and Ethnicity in Criminal Justice
CRJ 626	Gender Issues in Criminal Justice
CRJ 628	Organized Crime
CRJ 630	Constitutional Issues in Criminal Justice
CRJ 635	Criminal Justice Ethics
CRJ 710	Research Project

Up to 9 credit hours of electives may be taken outside the department with prior written approval of the student's academic adviser.

Comprehensive Examination or Master's Project **0-3 cr**

Select one option:

CRJ 690	Master's Project (3)
	Comprehensive Examination

Total Required Credit Hours **36 cr**

All courses are 3 credit hours unless otherwise indicated.

**EARTH SCIENCE EDUCATION (7-12),
M.S.Ed.**

Master of Science in Education Program

Program Code:

HEGIS:

Earth Sciences and Science Education Department

National Council for Accreditation of Teacher Education (NCATE)

Accredited

Gary S. Solar, *Chair*

Science Building 271, (716) 878-6731

www.buffalostate.edu/earthsciences

This program is designed for in-service teachers or those seeking science teaching certification. The earth science education program permits graduate work in any of the sciences or mathematics, in addition to required science education coursework. The program presumes an undergraduate background in geology/earth sciences; however, individuals with deficiencies may be granted conditional admittance. See the Earth Sciences and Science Education Department chair and the department web site for details.

Students must demonstrate competencies in the following areas:

Earth sciences - historical geology, paleontology, geomorphology, astronomy, oceanography, mineralogy and petrology, meteorology.

Other sciences - completion of no fewer than two semesters of lab-based coursework in each of the following: biology, chemistry, and physics.

The usual method of demonstrating competencies in the sciences is through successful completion of graduate or undergraduate courses in the areas listed.

Graduate credit is available only for courses listed as graduate. No competency may be fulfilled by examination after admission to the major.

Science education - evaluation, secondary curricula, current issues.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.65 (4.0 scale).
2. A New York State Certificate of Qualification (CQ), provisional certificate, or initial certificate.
3. Three letters of recommendation that address teaching ability and academic standing.
4. Completion of two courses in earth sciences, including and introductory lab-based physical geology course, with a minimum grade of C.
5. An admission interview (at the discretion of the Admissions Committee).

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Courses **30 cr**

Science and Mathematics Courses

15 - 18 cr

Science Education Courses		9 cr
SCI 628	Seminar in Secondary Science Education	
SCI 632	Curricular Trends in Science Teaching in the Secondary School	
SCI 685	Evaluation in Science Education	
		3 - 6 cr
Master's Project or Master's Thesis		
Select one option:		
SCI/GES 690	Master's Project	
SCI/GES 795	Master's Thesis (6)	
Total Required Credit Hours		30 cr
All courses are 3 credit hours unless otherwise indicated.		

EARTH SCIENCE EDUCATION (7–12; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-NS

Major Code: EGS

HEGIS 1917.01

Earth Sciences and Science Education Department

National Council for Accreditation of Teacher Education (NCATE)

Accredited

Gary S. Solar, *Chair*

Science Building 271, (716) 878-6731

www.buffalostate.edu/earthsciences

The earth science education (7–12) postbaccalaureate teacher certification program leads to eligibility for New York State initial certification to teach both earth science and general science in grades 7–12. This program is designed for students who have earned a baccalaureate degree in earth science or a related field from an accredited college or university and intend to complete the coursework required for New York State certification to teach earth science in secondary schools or general science in middle schools.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

A minimum GPA of 3.0 (4.0 scale) in required earth science courses is needed for admission to SED 405, SED 407, and SED 408.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements: A bachelor's degree in earth science or a related area from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale) in required earth science courses.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Earth Science Courses		41 cr
GES 101	Introductory Geology	
GES 102	Historical Geology	
GES 103	Introductory Geology Laboratory (1)	
GES 111	General Oceanography	
GES 131	Introductory Astronomy	
GES 241	Meteorology	
GES 302	Invertebrate Paleontology (4)	
GES 303	Mineralogy and Petrology (4)	
GES 307	Geomorphology (4)	
GES 405	Geology of North America	
GES 408	Structural Geology (4)	
One astronomy elective		
One upper-level earth science elective		

Professional Education Courses		24 cr
SPF 303	Educational Psychology: Middle and Secondary Education	
EDU 416	Teaching Literacy in Middle and Secondary Schools	
EXE 372	Foundations of Teaching Adolescents with Disabilities	
SCI 445	Literacy for Teaching Science (or equivalent)	
SED 200	Field Experience in Secondary Science Education	
SED 401	Techniques for Teaching Laboratory Activities in the Secondary Science Classroom	
SED 405	Methods and Materials for Teaching Secondary School Science	
SED 409	Seminar in Secondary Science Education	

Student Teaching Courses		12 cr
SED 407	Practice Teaching Science in the Middle School (6)	
SED 408	Practice Teaching Science in the High School (6)	

Courses in Other Fields for Certification 28-30 cr

A. Foreign Language Courses 6 cr
One year or equivalent

B. Cognate Science Courses 22-24 cr

Select two biology courses from the following:

BIO 211 Introduction to Cell Biology and Genetics (4)

BIO 212 Introduction to Organismal Biology and Diversity (4)

BIO 213 Introduction to Ecology, Evolution, and Behavior (4)

CHE 111/ CHE Fundamentals of Chemistry I and II (8)

112

PHY 111/ PHY University Physics I and II (8)

112

or

PHY 107/ PHY General Physics I and II (6)

108

Total Required Credit Hours 105-107 cr

All courses are 3 credit hours unless otherwise indicated.

EARTH SCIENCE EDUCATION (7–12; 5–6 EXTENSION; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-NS

Major Code: EGX

HEGIS 1917.01

Earth Sciences and Science Education Department
 National Council for Accreditation of Teacher Education
 (NCATE)
 Accredited
 Gary S. Solar, *Chair*
 Science Building 271, (716) 878-6731
www.buffalostate.edu/earthsciences

The earth science education (7–12 with 5–6 extension) postbaccalaureate teacher certification program leads to eligibility for New York State initial certification to teach both earth science and general science in grades 5–12. The program is designed for students who have earned a baccalaureate degree in earth science or a related field from an accredited college or university and intend to complete the coursework required for New York State certification to teach earth science in secondary schools or general science in middle schools.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

A minimum GPA of 3.0 in required earth science courses is needed for admission to SED 405, SED 407, and SED 408.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements: A bachelor's degree in earth science or a related area from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale) in required earth science courses.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Earth Science Courses 41 cr

GES 101	Introductory Geology
GES 102	Historical Geology
GES 103	Introductory Geology Laboratory (1)
GES 111	General Oceanography
GES 131	Introductory Astronomy
GES 241	Meteorology
GES 302	Invertebrate Paleontology (4)
GES 303	Mineralogy and Petrology (4)
GES 307	Geomorphology (4)
GES 405	Geology of North America
GES 408	Structural Geology (4)

One astronomy elective
 One upper-level earth science elective

Professional Education Courses 30 cr

SPF 303	Educational Psychology: Middle and Secondary Education
EDU 416	Teaching Literacy in Middle and Secondary Schools
EXE 372	Foundations of Teaching Adolescents with Disabilities
SCI 323	Science as Inquiry

SCI 445	Literacy for Teaching Science (or equivalent)
SED 200	Field Experience in Secondary Science Education
SED 310	Teaching Science in the Middle School
SED 401	Techniques for Teaching Laboratory Activities in the Secondary Science Classroom
SED 405	Methods and Materials for Teaching Secondary School Science
SED 409	Seminar in Secondary Science Education

Student Teaching Courses 12 cr

SED 407	Practice Teaching Science in the Middle School (6)
SED 408	Practice Teaching Science in the High School (6)

Courses in Other Fields for Certification 28-30 cr

A. Foreign Language Courses 6 cr

One year or equivalent

B. Cognate Science Courses 22-24 cr

Select two biology courses from the following:

BIO 211	Introduction to Cell Biology and Genetics (4)
BIO 212	Introduction to Organismal Biology and Diversity (4)
BIO 213	Introduction to Ecology, Evolution, and Behavior (4)
CHE 111/ CHE 112	Fundamentals of Chemistry I and II (8)
PHY 111/ PHY 112	University Physics I and II (8)
or	
PHY 107 /PHY 108	General Physics I and II (6)

Total Required Credit Hours 110 cr

All courses are 3 credit hours unless otherwise indicated.

ECONOMICS

See Applied Economics on page 45

EDUCATIONAL TECHNOLOGY (M.S.Ed.)

Master of Science in Education Program

Program Code: MSED-SP

Major Code: EDT

HEGIS 0899

Computer Information Systems Department

William Lin, *Chair*

Stephen E. Gareau, *Program Coordinator*

Chase Hall 231, (716) 878-4923

E-mail: gareause@buffalostate.edu

www.buffalostate.edu/cis

This program is designed primarily for P–12 educators, trainers from business and industry, and other professionals, who wish to develop and expand their skills in the educational application of technology in the classroom and other teaching and learning environments. Emphasis is on the design, development, and use of technology in the instructional process.

Graduates of the educational technology program learn to:

- Design, develop, implement, and evaluate instruction;
- Use computers and other educational technologies in the instructional process;

- Develop evaluation criteria and evaluate educational software and hardware;
- Prepare educational software and hardware using a variety of methods and tools;
- Design an educational technology system for an educational site;
- Use computers and other educational technologies in non-instructional and/or administrative settings;
- Assess and prepare for current and future trends in educational technology;
- Explore social, legal, and ethical issues involved in educational technology.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale). Students with less than a 3.0 GPA may be admitted as premajors.
2. Elementary/Secondary teaching certification is recommended (but not required).
3. Three recent letters of recommendation (within one year of application date) that specifically pertain to this Graduate School application.
4. A written Statement of Purpose that details the applicant's previous teaching and technology experience and sets forth the applicant's career goals (including the use of educational technology).
5. Previous experience with the Internet and common software tools (e.g., word processing, spreadsheet, and presentation software) is a prerequisite for full admission to the program. Students deficient in this prerequisite may be admitted as pre-majors.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

A. Core Courses **18 cr**

EDU 670	Principals of Curriculum Design OR
EDC 603	Instructional Design & Problem Solving with Technology
SPF 689	Methods & Techniques of Educational Research OR Research Methods, Tools, and Writing
EDC 689	
EDC 601	Instructional Technologies
EDC 604	Authoring for Educators
EDC 672	Microcomputer in the Instructional Program
EDC 690	Master's Project

B. Elective Courses **15 cr**

(a) For students seeking professional teaching certification:

4 courses in the student's certification content areas
1 elective course, chosen by advisement

OR

(b) For students not seeking certification:

5 elective courses, chosen by advisement

Total Required Credit Hours **33 cr**

All courses are 3 credit hours unless otherwise indicated.

EDUCATIONAL LEADERSHIP (C.A.S.)

Certificate of Advanced Study Program

Program Code: CAS-ED
Major Code: EDL
HEGIS 0828

Elementary Education and Reading Department

Nancy A. Chicola, *Chair*
Karen MacGamwell, *Program Coordinator*
Bacon 302, (716) 878-5916
www.buffalostate.edu/elementaryeducation

This post-master's degree program leads to a certificate of advanced study (CAS) in educational leadership and to New York State certification of School Building Leader.

Admission Requirements:

1. Evidence of a valid permanent or professional certificate in classroom teaching, pupil personnel service, or administration that was issued by any state or national government (submit copy).
2. A master's degree from an accredited college or university.
3. Three recommendation forms that attest to applicant's potential as an educational leader. Department forms may be downloaded at www.buffalostate.edu/graduateschool/admissions.
4. Three years of successful teaching and/or supervisory and/or pupil personnel service experience in schools or agencies (pre-K-12).
5. An interview providing evidence of successful leadership potential.
6. Evidence of satisfactory verbal and written English language skills.
7. Acceptable score on the Miller Analogies Test (MAT).

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements:

1. A minimum GPA of 3.0 (4.0 scale) is required to remain in the program.
2. Coursework (including transfer credit) and field and internship experiences must be completed within six years of the date of enrollment in the program.
3. An application for admission to candidacy, signed by the student, the student's academic adviser, the department chair, and the School of Education dean, must be submitted to the Graduate School after the completion of 6 credit hours and before the completion of 12 credit hours.
4. A maximum of 6 credit hours of independent study may be included in the program.
5. At the completion of 24 credit hours of coursework in EDL, students may enroll in EDL 703 (Educational Leadership Internship, a 3-credit course). At the completion of the EDL 703 internship and at the completion of each field experience, a letter grade of S (Satisfactory) or U (Unsatisfactory) is awarded.

- All coursework must receive a minimum grade of C to meet program requirements.
- A maximum of 12 graduate-level credit hours may be transferred upon approval. Only grades of B or better will be accepted as transfer credit.

Program Requirements

Required Courses **27 cr**

EDL 552	Public School Law
EDL 606	School-Community Relations
EDL 607	Site-Based Leadership
EDL 612	School Business Management and Finance
EDL 630	Curriculum Leadership
EDL 631	Supervision of Teaching
EDL 702	Educational Leadership Field Experiences
EDL 703	Educational Leadership Internship
EDL 704	Seminar in Educational Change

Elective Courses **6 cr**

Select two courses from the following list:

EDL 500	Multicultural Education
EDL 559	Principles of Creative Problem Solving
EDL 560	Methods, Theories, and Models of Creative Learning
EDL 590	Advanced School Law (course by contract)
EDL 602	Administration of Special Education Programs
EDL 608	Administration of Programs for the Young Child
EDL 610	Methods of Adult Education
EDL 652	Special Education School Law
EDL 683	Facilitation of Group Problem Solving
EDL 706	Problems in Leadership
EDL 707	Computer Applications in Education Administration
EDL 714	Personnel Administration in Schools
EDU 646	Literacy Leadership

Total Required Credit Hours **33 cr**

All courses are 3 credit hours unless otherwise indicated.
Certificate of Advanced Study Program
 Program Code: CAS-ED
 Major Code: ECP
 HEGIS 0828

This post-master's degree program leads to a certificate of advanced study (CAS) in educational leadership and to New York State certification of both School Building Leader and School District Leader.

Admission Requirements:

- Evidence of a valid permanent or professional certificate in classroom teaching, pupil personnel service, or administration that was issued by any state or national government (submit one copy with application).
- A master's degree from an accredited college or university.
- Three recommendation forms that attest to applicant potential as an educational leader.
- Three years of successful teaching and/or supervisory and/or pupil personnel service experience in schools or agencies (pre-K-12).
- Statement of leadership interests, goals, and relevant professional and community service.

- An interview providing evidence of successful leadership potential.
- Evidence of satisfactory verbal and written English language skills.
- Acceptable score on the Miller Analogies Test (MAT).

Each admission requirement is scored according to criteria on an evaluation rubric. The total score is compiled so that any one requirement will not preclude admission, but an overall snapshot of potential student success will be considered.

In addition, all applicants should adhere to the requirements detailed in the Admission to a Graduate Program section in this catalog and utilize any related Supplemental Application Forms.

Program Requirements:

- A minimum GPA of 3.0 (4.0 scale) is required to remain in the program. Coursework (including transfer credit) and field and internship experiences must be completed within six years of the date of enrollment in the program.
- An application for admission to candidacy, signed by the student, the student's academic adviser, the department chair, and the School of Education dean, must be submitted to the Graduate School after the completion of 6 credit hours and before the completion of 12 credit hours.
- A maximum of 6 credit hours of independent study may be included in the program.
- After the successful completion of EDL 703 (Educational Leadership Internship, a 3-credit course), students may enroll in EDL 705 (School District Internship, a 2-credit course) At the completion of each internship experience, a letter grade of S (Satisfactory) or U (Unsatisfactory) is awarded.
- All coursework must receive a minimum grade of C to meet program requirements.
- A maximum of 12 graduate credit may be transferred upon approval. Only grades of B or better will be accepted as transfer credit.

Program Requirements

Required Courses **27 cr**

EDL 552	Public School Law
EDL 606	School-Community Relations
EDL 607	Site-Based Leadership
EDL 612	School Business Management and Finance
EDL 630	Curriculum Leadership
EDL 631	Supervision of Teaching
EDL 702	Field Experiences
EDL 703	Educational Leadership Internship (SBL)
EDL 704	Seminar in Educational Change

Problem Solving Sequence **8 cr**

Choose two (2) of the three (3) problem-solving courses and the required internship for a total of 8 credits.

EDL 559	Principles of Creative Problem Solving
EDL 706	Problems in Leadership
EDL 683	Facilitation of Group Problem Solving

EDL 705 School District Leader Internship (2 cr)

Elective Courses	3 cr
<i>Select one course from the following list</i>	
EDL 500	Multicultural Education
EDL 560	Methods, Theories, and Models of Creative Learning
EDL 590	Advanced School Law (course by contract)
EDL 602	Administration of Special Education Programs
EDL 608	Administration of Programs for the Young Child
EDL 652	Special Education School Law
EDL 707	Computer Applications in Education Administration
EDL 714	Personnel Administration in Schools
Total Required Credit Hours	38 cr

All courses are 3 credit hours unless otherwise indicated.

ENGLISH (M.A.)

Master of Arts Program

Program Code: MA-AH
Major Code: ENG
HEGIS 1501

English Department

Lisa Berglund, *Chair*
Ketchum Hall 326, (716) 878-5417
www.buffalostate.edu/english

The master of arts in English program is designed to provide flexibility in meeting individual student interests while ensuring a broad understanding of the significant areas within the professional study of English. The program builds upon students' undergraduate work in English by offering the opportunity to study several different areas of concentration in depth. It also serves as an excellent preparatory program for doctoral-level study in English.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale) in English and 2.75 overall.
2. 36 credit hours in English, at least 27 of which must be in English literature, exclusive of basic college writing.
3. Students must demonstrate competency in written English by submitting a writing sample of their best academic work. Students for whom English is an alternate language are required to submit evidence of passing TOEFL scores, as required by the SUNY system for international students.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Language Requirement:

Prior to the completion of 18 credit hours, students must demonstrate competence in one foreign language, as well as in written and oral English.

Advisement: Each student is assigned an academic adviser. All students must apply for candidacy after the completion of 6 credit hours and before the completion of 12 credit hours.

Program Requirements

Required Courses ¹	18 cr
ENG 601	Research in Language and Literature must be taken in student's first term.
ENG 644	Ideology and Literature
or	
ENG 645	Literature and Social Justice
or	
ENG 652	Literary Criticism
At least 3 credits in British Literature	
At least 3 credits in American Literature	
At least 3 credits in non-American, non-British literature	
At least 3 credits in linguistics or genre study (ENG 670, 641, 642, or 643)	
Comprehensive Examination	0 cr
Comprehensive examination required for all students, 0 credits hours, to be taken after the completion of at least 24 credits.	
Elective Courses¹	12 cr
In English or other academic areas, selected under advisement. Students are not required to produce a Master's Thesis or Master's Project, but if they choose either option, they must apply for permission from the department the term prior to beginning thesis or project work and be approved to undertake these options.	
Total Required Credit Hours	30 cr

¹Selected under advisement
All courses are 3 credit hours unless otherwise indicated.

ENGLISH EDUCATION (7-12; M.S.Ed.)

Master of Science in Education Program

Program Code: MSED-AH
Major Code: ENS
HEGIS 1501.01

English Department

National Council Accreditation of Teacher Education (NCATE) Accredited
Lisa Berglund, *Chair*
Ketchum Hall 326, (716) 878-5417
www.buffalostate.edu/english

This graduate program is designed to provide maximum flexibility in meeting individual interests while ensuring a broad understanding of the various aspects of the teaching of English. The program develops highly qualified teachers who are prepared to exercise leadership as accomplished professional educators.

Culminating Activity (students choose one of three options): In consultation with a full-time faculty member in the English education program, students choose to (1) complete the master's thesis, a traditional in-depth exploration, usually of a literary topic and/or theme; (2) complete a master's project consisting of applied research in English education; or (3) take an English comprehensive examination.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75 (4.0 scale).

2. A New York State Certificate of Qualification (CQ), provisional certificate, or initial certificate to teach English in grades 7-12.
3. 36 credit hours in English beyond freshman composition, including preparation in linguistics, young adult literature, American literature (including ethnic American literature), British literature (including Shakespeare), and World literature.
4. 27 credit hours in professional education, including secondary English methods and student teaching in middle or secondary schools.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Advisement: Each student is assigned an academic adviser. All students must apply for candidacy after the completion of 6 credit hours and before the completion of 12 credit hours.

Program Requirements

English Courses	9-15 cr
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At least three courses must be in literature

English Education and Professional Education Courses	15-21 cr
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EDF 500	Multicultural Education
ENG 691	Advanced Study in the Teaching of English
or	
ENG 692	Teaching of Writing
ENG 693	Research in the Teaching of English

(recommended after ENG 691 or ENG 692 when possible)
Two additional English education and/or professional education courses*

*Possible English courses: ENG 691, ENG 692, ENG 694, or ENG 670. Students may take both ENG 691 and ENG 692. Students also may select graduate courses from other appropriate departments, such as exceptional education, educational foundations, and elementary education and reading, under advisement.

Master's Project, Master's Thesis, or Comprehensive Examination	0-6 cr
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Select one option:

ENG 690	Master's Project
ENG 695	Master's Thesis (6)
Comprehensive Examination (0)	

Total Required Credit Hours	30 cr
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All courses are 3 credit hours unless otherwise indicated.

ENGLISH EDUCATION (7-12; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-AH
Major Code: ENS
HEGIS 1501.01

English Department

National Council Accreditation of Teacher Education (NCATE) Accredited

Lisa Berglund, *Chair*

Ketchum Hall 326, (716) 878-5417

www.buffalostate.edu/english

The English education (7-12) postbaccalaureate teacher certification program leads to eligibility for New York State initial certification to teach English in grades 7-12. This program is designed for students who have earned a baccalaureate degree in English or a related field from an accredited college or university and intend to complete the coursework required for New York State certification to teach English in secondary or middle schools.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

Students are responsible for any additional certification requirements, including the Liberal Arts and Sciences Test (LAST), the Assessment of Teaching Skills written test for provisional/initial certification, and child abuse certification.

It takes approximately three to four semesters to complete certification requirements at Buffalo State. Students in this program take both undergraduate- and graduate-level courses and are billed appropriately for each level. Graduate-level credits may be applied to a master's degree at Buffalo State.

Advisement: Each student is assigned an academic adviser.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75 (4.0 scale) and a major in English (or a related discipline with a minimum of 36 credit hours in English), including courses in Shakespeare, ethnic American literature, young adult literature, and world literature.*
2. A minimum GPA of 2.75 in English coursework.*
3. Two years of high school or two semesters of college study in one foreign language.* Applicants must verify foreign language study with high school or college transcripts.
4. Coursework in exceptional education and educational technology (3 credit hours each) or demonstrated expertise in these areas.*

**Applicants who do not meet these requirements should apply as a premajor to the postbaccalaureate certificate program.*

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Undergraduate-Level Education Courses	15 cr
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EDF 403	Historical/Philosophical Forces on Secondary Education
EDU 416	Teaching Reading
ENG 311	Teaching Language
ENG 463	Methods in the Teaching of Secondary English (6)

Graduate-Level Education Courses		9 cr
EDF 500	Multicultural Education	
EDF 503	Educational Psychology	
or		
EDF 529	Adolescent Psychology	
ENG 692	The Teaching of Writing	
Student Teaching Courses		12 cr
ENG 464/	Supervised Student Teaching	
ENG 465		
Total Required Credit Hours		36 cr
All courses are 3 credit hours unless otherwise indicated.		

FOREIGN LANGUAGE EDUCATION (1-6 EXTENSION; 7-12) (M.S.ED.)

Master of Science in Education

Program Code: MSED-AH

Major Code: FLE

HEGIS 1199

Modern and Classical Languages Department

National Council for Accreditation of Teacher Education (NCATE)

Accredited

Michael Johnson, *Chair*

Bishop Hall 122, (716) 878-5414

www.buffalostate.edu/languages

This program is designed primarily to accommodate the needs of initially licensed 7-12 French or Spanish teachers for professional licensure in the teaching of foreign languages and extension of the certificate to the 1-6 level. Because the M.S.Ed. in Foreign Language Education Program is intended to accommodate full-time, practicing teachers, it is expected that most will be enrolled as part-time students.

Students must complete 30 graduate-level credit hours, observing the guidelines and policies that govern graduate-level study at Buffalo State College. Students are expected to maintain a 3.00 GPA (out of 4.00) and to complete the program within a period of 3-5 years.

Students will take a set number of required and elective courses of study within four areas, as follows:

- foreign language, literature, and culture (12 credits);
- advanced foreign language teaching and learning (9 credits);
- computer-assisted instruction (3 credits), and
- educational research (6 credits).

Before completing 15 credit hours toward program requirements at Buffalo State College, students are expected to present to their adviser a research topic based on a clinical question that is relevant to their own classroom teaching experiences. The program culminates with a 3-credit thesis or project based on the research area they have selected.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75 overall, and 3.0 (4.0 scale) in a major in French or Spanish language, literature, and culture (or a related discipline with a minimum of 36 credit hours in French or Spanish), or a minimum combined quantitative/verbal score of 1000 on the Graduate Record Examination (GRE). The department may grant conditional admission to the program, if the minimum requirements are not met. Any additional work requirements or waivers of general prerequisites for admission shall be set by the department at the time of acceptance.
2. A New York State Provisional Certificate, or an Initial Certificate to teach French or Spanish at the 7-12 level in the State of New York, or comparable certification.
3. A current résumé.
4. Two letters of reference, attesting to the applicant's language competence and readiness for this program. These letters should be on department forms that may be downloaded at www.buffalostate.edu/graduateadmissions/ click on Applying, then on How to Apply.
5. Successful completion of a written essay demonstrating skill in English; and of a second essay, showing skill in the target language. In both essays, applicants will describe their professional skills, interests, and goals. The essays are to be written on site as part of the application process.
6. An interview with at least two faculty members of the Modern and Classical Languages Department in the language of the applicant's specialization. The interview will be conducted in both English and the target language. The department will contact the applicant to make an appointment for this interview, after the complete application package is received.

Program Requirements

Foreign Language, Literature, and Culture		12 cr
<i>Select from the following:</i>		
French Track		
FRE 610	The Age of Enlightenment	
FRE 620	George Sand Seminar	
FRE 630	French and Francophone Popular Novel since the Nineteenth Century	
FRE 640	Experimental Literature of the Twentieth Century	
Or		
Spanish Track		
SPA 606	Contemporary Civilization and Cultures of Spain	
SPA 609	Civilizations and Cultures of Latin America	
SPA 617	Don Quixote	
SPA 631	Cinema of Spain	

[More graduate-level courses in French or Spanish language, literature, and culture are in development in the MCL Department. Also applicable are graduate-level courses in French or Spanish literature and/or culture approved by the MCL Department and taken in study abroad programs such as those offered through Middlebury College, as well as campus-networked, structured

immersion programs such as Trois Pistoles (Canada) and the program in Salamanca, Spain.

Advanced Foreign Language Teaching and Learning **9 cr**

Select from the following:

FLE 500	Teaching a Second Language in Middle and High Schools*
FLE 520	Teaching a Second Language at the Elementary Level**
FLE 540	Second Language Acquisition
FLE 680	Seminar: Special Topics in Research on Foreign Language Learning

Computer-Assisted Instruction **3 cr**

Select from the following:

FLE 600	Integrating Technology in the Second Language Classroom
EDC 601	Instructional Technologies
EDC 672	The Microcomputer in the Instructional Program

Educational Research and Clinical Master's Project or Master's Thesis **6 cr**

EDF 689	Methods and Techniques of Educational Research and
FLE 690	Project
or	
FLE 695	Thesis

Total required credit hours **30 cr**

* Required for candidates who have not taken FLE 405 and FLE 406, or equivalent methods coursework

** Required for the degree

FORENSIC SCIENCE (M.S.)

Master of Science Program

Program Code: MS-NS

Major Code: FSC

HEGIS 1999.20

Chemistry Department

M. Scott Goodman, *Chair*

Science Building 267, (716) 878-5204

www.buffalostate.edu/chemistry

The master of science in forensic science provides advanced education in the scientific and laboratory methods utilized in a modern forensic laboratory. The program unites current theory and practices in forensic science with advanced laboratory training and an exploration of issues in the related disciplines of law enforcement and ethics.

Important Note: Individuals seeking employment in a forensic science laboratory may be required to undergo an extensive background check including a lie detector test, fingerprinting, and drug testing.

The curriculum for the program is structured around a core of advanced forensic science lecture and laboratory courses supplemented by electives in specialized sub-disciplines. The program includes a seminar component and culminates in a master's thesis based upon original scholarship carried out by the student.

Successful completion of this program requires that students have a strong background in math and science including laboratory experience in chemistry and biology upon admission. The program consists of 31 credit hours and should take two years to complete.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75 (4.0 scale).
2. An official transcript of the applicant's undergraduate program showing successful completion of 48 credit hours of college science and mathematics courses, including the following coursework: one year of general chemistry, one year of organic chemistry with laboratory, a course in analytical chemistry, one year of general biology (including cell biology), a course in genetics or population genetics, and a course in either molecular biology or biochemistry.
3. A minimum GPA in the required chemistry and biology coursework of 2.9 (on a 4.0-point scale).
4. Three letters of recommendation from individuals who are familiar with the applicant's academic record.
5. A written statement concerning the applicant's academic background, future plans, and areas of research interest.

Program Requirements

Required Courses **19 cr**

FOR 612	Principles of Forensic Science
FOR 614	Forensic Applications of Instrumental Analysis (4)
FOR 616	Microscopy in Forensic Science (2)
FOR 618	Drug Chemistry and Toxicology
BIO/CHE 672	Forensic Molecular Biology (4)
CHE 698	Journal Seminar (1)
CHE 699	Thesis Seminar and Defense (2)

Research Credit **6 cr**

Elective Courses **6 cr**

CHE 572	Advanced Biochemistry
FOR 598	Forensics Microcourse(s) (1-3)
CHE 625	Physical Methods (4)
CHE 626	Symmetry, Group Theory and Vibrational Spectroscopy (1)
CHE 627	X-Ray Crystallography (1)
CHE 628	Nuclear Magnetic Resonance Spectroscopy (1)
CHE 629	Mass Spectrometry (1)
CHE 670	Biomolecules
CHE 680	Advanced Analytical Chemistry
BIO 601	Foundations of Cellular and Molecular Biology
BIO 608	Molecular Genetics
GES 513	Advanced Forensic Geosciences
CRJ 630	Constitutional Issues in Criminal Justice

Total Required Credit Hours **31 cr**

All courses are 3 credits hours unless otherwise indicated.

FRENCH EDUCATION (7-12; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-AH

Major Code: FRS

HEGIS 1102.01

Modern and Classical Languages Department

National Council for Accreditation of Teacher Education (NCATE)

Accredited

Appointment Pending, *Chair*

William L. White, *Program Coordinator*

Bishop Hall 122, (716) 878-5414

www.buffalostate.edu/languages

The French education (7–12) postbaccalaureate teacher certification program leads to eligibility for New York State initial certification to teach French in grades 7–12.

This program is designed for students who have earned a baccalaureate degree in French or a related field from an accredited college or university and intend to complete the coursework required for New York State certification to teach French in secondary or middle schools.

The program provides the background necessary for teachers to implement the New York State learning standards for Languages Other Than English (LOTE) 7–12. It also meets the standards set by such national professional organizations as the American Council of Teachers of Foreign Languages and the National Council for Accreditation of Teacher Education.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

It takes approximately three to four semesters to complete certification requirements at Buffalo State College.

Students are responsible for any additional certification requirements, including the Liberal Arts and Sciences Test (LAST), the Assessment of Teaching Skills written test for provisional/initial certification, and child abuse certification.

To student teach, a student must have achieved a minimum cumulative GPA of 2.75 in French coursework and overall, and must have earned a minimum grade of C in FLE 405 and FLE 406. Also, the student must complete an ACTFL-Approved Oral Proficiency Interview (OPI) in order to demonstrate Advanced-Low Proficiency in French. If Advanced-Low Proficiency is not achieved, an additional upper-level French course, chosen in consultation with the student's adviser, must be successfully completed.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75 (4.0 scale) and a major in French language, literature,

and culture (or a related discipline with a minimum of 36 credit hours in French).*

2. A minimum GPA of 2.75 in French coursework and overall.
3. Successful completion of two written essays (one English, one French), administered by the department as part of the interview process.
4. A personal interview with the program coordinator, department chair, or other designated official.

**Applicants who do not meet these admission requirements may take courses at Buffalo State to become eligible to apply to the program.*

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required French Courses¹ 6 cr

Select two courses from the following:

FRE 305	Phonetics and Orthography
FRE 306	The Civilization of France
FRE 307	Survey of French Literature
FRE 308	Survey of French Literature
FRE 309	Survey of Nineteenth- and Twentieth-Century French Literature
FRE 410	French Poetry from Baudelaire to Present
FRE 411	Studies in French Poetry
FRE 412	Studies in the French Novel
FRE 413	Studies in French Theater
FRE 415	Advanced Grammar and Composition
FRE 416	Advanced Conversation and Composition
FRE 417	Business French
FRE 496	Seminar I
FRE 497	Seminar II

Professional Education Courses 24 cr

EDF 303	Educational Psychology
EDF 403	Historical and Philosophical Foundations of Secondary Education
EDU 416	Teaching Reading in Secondary Schools
EXE 372	Foundations of Teaching Secondary Students with Disabilities
FLE 200	Field Experience in Foreign Language Education
FLE 316	Teaching Reading in a Foreign Language in Middle School
FLE 405	Methods and Materials for Teaching Foreign Languages in the Secondary Schools
FLE 406	Techniques for Teaching and Evaluating Foreign Languages in Middle and Secondary Schools

Student Teaching Courses 12 cr

FLE 407	Student Teaching of Foreign Languages in the Middle/Junior High School (6)
FLE 408	Student Teaching of Foreign Languages in the High School (6)

Total Required Credit Hours 42 cr

¹Selected under advisement

All courses are 3 credit hours unless otherwise indicated.

GREAT LAKES ECOSYSTEM SCIENCE (M.A.)

Master of Arts Program

Program Code: MA-NS
Major Code: GLE
HEGIS 0420

Great Lakes Center

Kelly M. Frothingham, Program Coordinator
Alexander Y. Karatayev, Great Lakes Center Director
Science and Mathematics Complex 319
(716) 878-4329
<http://www.greatlakescenter.buffalostate.edu>

The master of arts in Great Lakes ecosystem science program offers a strong foundation in environmental science and allows students to approach problems from a purely scientific perspective. Graduates are trained to effectively deal with a broad range of problems and issues related to ecosystem structure and function within the Great Lakes and surrounding watersheds, which prepares them for advanced research, professional employment, or study at the Ph.D. level.

Admission Requirements

5. A bachelor's degree in a science (e.g., chemistry, biology, geography, geology, earth science, environmental science) or math discipline from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale).
6. Scores on the Graduate Record Examination (GRE) general test.
7. An official transcript of the applicant's undergraduate program giving evidence of satisfactory completion of college science and mathematics courses. It is strongly recommended that all applicants have introductory college coursework in chemistry, biology, geography, geology, and mathematics/statistics. The absence of any of this coursework may be regarded as a deficiency and students may be required to complete this recommended coursework before graduation.
8. Two letters of recommendation evaluating the applicant's academic qualifications.
9. A written statement of the applicant's academic background, academic and career plans, and area(s) of research interest.
10. In addition, all applicants should review the Admission to a Graduate Program section in the Graduate Catalog.

Program Requirements

Required Core Courses (12 cr)

GLC 535 Great Lakes Ecosystem Science	
GLC 600 Great Lakes Seminar*	1
BIO 670 Biological Data Analysis (or equivalent quantitative data analysis course)	
Select one of the following:	

GEG 525 Fundamentals of GIS or
GEG 528 Environmental Assessment and
Planning Applications or
GEG 529 Advanced Topics in GIS

* GLC 600 is taken three times

Elective Courses (12 cr)

Appropriate biology, chemistry, earth sciences, and geography and planning courses selected by advisement.

Master's Thesis (6 cr)

GLC 695 Master's Thesis	6
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Total Required Credits Hours (30 cr)

All courses are 3 credit hours unless otherwise indicated

GREAT LAKES ECOSYSTEM SCIENCE (M.S.)

Master of Science Program

Program Code: MS-NS
Major Code: GLS
HEGIS 0420

Great Lakes Center

Kelly M. Frothingham, Program Coordinator
Alexander Y. Karatayev, Great Lakes Center Director
Science and Mathematics Complex 319
(716) 878-4329
<http://www.greatlakescenter.buffalostate.edu>

The master of science in Great Lakes ecosystem science program combines coursework in environmental science with communication and project management classes and an internship experience. The M.S. program is designed to meet the needs of industry, consulting firms, nongovernmental organizations (NGOs), and governmental agencies, preparing graduates for leadership roles as they address a wide range of problems and issues related to the management of resources within the Great Lakes and surrounding watersheds.

Admission Requirements

1. A bachelor's degree in a science (e.g., chemistry, biology, geography, geology, earth science, environmental science) or math discipline from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale).
2. Scores on the Graduate Record Examination (GRE) general test.
3. An official transcript of the applicant's undergraduate program, giving evidence of satisfactory completion of college science and mathematics courses. It is strongly recommended that all applicants have introductory college coursework in chemistry, biology, geography, geology, and mathematics/statistics. The absence of any of this coursework may be regarded as a deficiency and students may be required to complete this recommended coursework before graduation.

4. Two letters of recommendation evaluating the applicant's academic qualifications.
5. A written statement of the applicant's academic background, academic and career plans, and area(s) of research interest.
6. In addition, all applicants should review the Admission to a Graduate Program section in the Graduate Catalog.

Program Requirements

Required Core Courses (11 cr)

GLC 535 Great Lakes Ecosystem Science	
GLC 600 Great Lakes Seminar*	1
BIO 670 Biological Data Analysis (or equivalent quantitative data analysis course)	

Select one of the following:

GEG 525 Fundamentals of GIS or GEG 528 Environmental Assessment and Planning Applications or GEG 529 Advanced Topics in GIS	
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* GLC 600 taken two times

Required Communication and Project Management Courses (6 cr)

Communication (3 cr)

Select one of the following:	3
PSM 602 Communication Strategies for Math and Science Professionals or COM 519 Communication for Managers and Leaders or COM 610 Strategic Public Relations	

Project Management (3 cr)

Select one of the following:	3
PSM 601 Project Management for Math and Science Professionals or MET 620 Managing Engineering Projects	

Required Internship (3 cr)

GLC 688 Internship	3
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Elective Courses (12 cr)

Appropriate biology, chemistry, earth sciences, and geography and planning courses selected by advisement.

Total Required Credits Hours (32cr)

All courses are 3 credit hours unless otherwise indicated

HIGHER EDUCATION AND STUDENT AFFAIRS ADMINISTRATION (M.S.)

Master of Science Program

Program Code: MS-SP

Major Code: HEA

HEGIS 0826

Higher Education Administration Department

Wanda M. Davis, *Chair*

Bacon Hall 214C, (716) 878-3789

www.buffalostate.edu/hea

Mission: The Mission of the Higher Education Administration department at Buffalo state is to prepare exceptional student affairs scholar-practitioners for careers in higher education. We are guided by promoting aces and learning within the context of a diverse student body. Our graduates possess knowledge and skills with an ethic of care to facilitate learning and development in students.

Vision: The Higher Education Administration Department (HEA) is clearly focused on one of the most distinguished programs of its kind in the United States. Concentrated on serving the educational needs of a diverse student body through a flexible program with evolving and updated curricula, the HEA department challenges students to become lifelong learners and leaders in the administration of student affairs, academic support services, and other administrative/teaching areas at the postsecondary level. As the demographics of higher education change in the 21st century, the program will provide highly prepared leaders including underrepresented groups to serve the nations institutions of higher learning at the highest levels. Many student s will continue their intellectual and personal development through doctoral programs and as scholar-practitioners.

Students may focus on courses and internships in four concentration areas: administration and management, counseling and development, adult and community education, research and evaluation or a general focus.

Internships: The internship represents the application of theory in a practical setting.. This vehicle for diversified professional training encompasses research, planning, organization and ethical applications.

Assistantships: Graduate assistantships are available in student affairs, academic affairs and other areas within higher education. For college-wide assistantship opportunities, visit www.buffalostate.edu/graduateschool.

Professional Organizations: HESAA graduates gain mentoring, networking, and professional development support through national, regional and local organizations.

Graduation Requirements: A minimum of 36 credit hours are needed for degree completion: 27 credit hours of required coursework and 9 hours of electives. After completing 6 to 12 credit hours, students apply for degree candidacy and are subject to continuous review by the faculty to ensure adherence to professional standards. The required comprehensive examination must be completed prior to graduation.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale). Applicants who hold a bachelor's degree but do not meet the minimum GPA requirement may be admitted if they attain a minimum combined quantitative/verbal score of 1000 on the Graduate Record Examination (GRE) or are accepted by the faculty under provisional status.
2. Consideration can be given to work-related experience and involvement in the field.

3. Two letters of recommendation (one from faculty member and one from employer or professional in the field).
4. A written essay indicating reasons for interest in the program. This will be evaluated as a writing sample.
5. A current résumé.
6. An interview with HEA program faculty may be required.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Courses 27 cr

HEA 616	American Higher Education
HEA 617	Student Development and Learning
HEA 618	Student Personnel Administration
HEA 620	Planning and Finance in Higher Education
HEA 622	Techniques of Counseling I
HEA 624	Internship/Practicum I
HEA 625	Internship/Practicum II
HEA 650	Student Assessment Tests
HEA 689	Methods of Educational Research
Comprehensive Examination (offered in November and April; 0 cr)	

Elective Courses¹ 9 cr

Select three courses from any of the following areas:

A. Administration

HEA 504	Community College Administration
HEA 619	Management Systems and Leadership in Higher Education
HEA 651	The Law and Higher Education
HEA 670	The College Student Movement 1955–1975

B. Counseling and Student Development

HEA 623	Counseling II
HEA 630	Group Counseling
HEA 632	Vocational Development and Career Counseling
HEA 670	The College Student Movement 1955–1975
HEA 711	Seminar in Techniques of Counseling and Psychotherapy

C. Community Education

HEA 504	Community College Administration
HEA 619	Management Systems and Leadership in Higher Education
HEA 632	Vocational Development and Career Counseling
HEA 670	The College Student Movement 1955–1975

D. Research and Evaluation

HEA 690	Master's Project
HEA 695	Thesis; may be substituted for Master's Project (6)
EDF 520	Educational Statistics I (Descriptive and Inferential)

E. Any Concentration Area

HEA 590	Independent Study (if research-based)
HEA 690	Master's Project

Other elective courses may be selected from related courses/workshops in various disciplines or interdisciplinary areas with adviser approval.

*Can apply to other concentrations

Total Required Credit hours 36 cr

¹Selected under advisement

All courses are 3 credit hours unless otherwise indicated.
Career Preparation: Through collaboration with alumni in the field, college departments, professionals in the field, curricular and co-curricular activities support planning and preparation for a professional career in higher education.

HISTORY (M.A.)

Master of Arts Program

Program Code: MA-NS

Major Code: HIS

HEGIS 2205

History and Social Studies Education Department

Andrew D. Nicholls, *Chair*

Classroom Building C205, (716) 878-5412

www.buffalostate.edu/history

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale) in history and 2.75 overall.
2. 30 credit hours in history.
3. Two letters of recommendation.
4. A 500-word statement describing the applicant's graduate education goals and preferred fields of history.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Advisement: The student, with the approval of the department chair, selects an academic adviser who specializes in the student's principal areas of interest.

Graduation Requirements:

1. At least 15 credit hours of coursework at the 600 or 700 level.
2. Master's thesis and defense: The student, in consultation with his or her academic adviser and second reader, prepares and submits a written thesis. Once approved, the student must successfully provide an oral defense. The approved thesis is submitted according to guidelines of the Graduate School.
3. An oral defense of the thesis. The student will answer questions from his or her graduate committee on all aspects of the thesis, as well as questions relating to the student's coursework.
4. Demonstrated competence in a foreign language may be required. If applicable, competency examinations will be arranged by the thesis adviser and approved by the department chair.

Program Requirements

Required Courses¹ 18 cr

Select from the following areas:

American history

European history

Third World history

Up to 6 credit hours may be taken in related disciplines with prior approval of the student's adviser and the department chair.

Seminars 6 cr

6 credits at the 700 level

Master's Thesis 6 cr

Total Required Credit Hours**30 cr**¹Selected under advisement.

All courses are 3 credit hours unless otherwise indicated.

HUMAN RESOURCE DEVELOPMENT (GRADUATE CERTIFICATE)

Graduate Certificate Program

Program Code: GRCT-ED

Major Code: HRD

HEGIS 0807

Department of Adult Education

Susan K. Birden, Chair

Bacon Hall 306, (716) 878-4303

www.buffalostate.edu/adulteducation

This graduate certificate program is designed to serve the advanced educational needs of professionals who educate and train workers and volunteers but do not need a master's degree. The certificate program consists of 12 graduate credit hours, and is designed to address the essential skills and competencies for professional practitioners in human resource development. Graduates will use their skills to develop and administer training programs to produce a more effective and competitive workforce.

The certificate in human resource development can be applied toward a master's degree in adult education at Buffalo State. Students wishing to complete the graduate certificate in human resource development and the master of science in adult education within 30 credit hours must complete the entire graduate certificate and then apply for admission to the master's degree in adult education. This program does not lead to teaching certification.

The graduate certificate in human resource development is offered both on the Buffalo State campus and through web-based courses.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.5 (4.0 scale), or a master's degree from an accredited institution with a minimum GPA of 3.0 (4.0 scale).
2. Applicants who hold a bachelor's degree but do not meet either of the above criteria may be admitted if they attain a minimum combined quantitative/verbal score of 1000 on the GRE and a minimum score of 45 on the Miller Analogies Test.
3. A letter describing the applicant's interest in the field and experience with teaching or administering adult programs.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Application Deadline: Applicants must apply by July 1 for fall admission or by December 1 for spring admission. No applications are accepted for summer admission.

Program Requirements

Required Courses**12 cr**

ADE 608	Instructional Design
ADE 610	Methods in Adult Education
ADE 625	Designing and Evaluating Programs for Adult Learners
ADE 640	Human Resource Development

Total Required Credit Hours**12 cr**

All courses are 3 credits unless otherwise indicated.

INDUSTRIAL TECHNOLOGY (M.S.)

Master of Science Program

Program Code: MS-SP

Major Code: IDT

HEGIS 0925

Engineering Technology Department

Dr. Jim Mayrose, *Chair*John J. Earshen, *Program Coordinator*

Technology Building 126, (716) 878-6018

www.buffalostate.edu/engineeringtechnology

This program prepares professionals for positions of leadership and responsibility in business, industry, and government. It provides direct exposure to actual business and industrial problems in an applications-oriented environment. It encourages part-time study while the participant is involved in full-time employment. Representative undergraduate degrees include industrial technology, engineering technology, computer information systems, and business. Required courses include engineering economics, operations management, integrated industrial systems and research design. These courses provide a common core of knowledge enabling the graduate to effectively function in diverse settings. Elective courses allow the student to pursue topics of interest that may be of immediate professional benefit. A research project, often based on current work experiences, completes the program.

This part-time program is designed to provide a 30-hour degree that blends the management and technology disciplines, and can be completed in three years of part-time study.

Admission Requirements:

1. A bachelor's degree in technology, engineering, business, or information systems from an accredited college or university. Candidates holding other baccalaureate degrees but having significant work experience in one of the previously mentioned disciplines will be considered.
2. A minimum cumulative GPA of 2.5 (4.0 scale) in the baccalaureate degree.
3. Three letters of reference, including one from the applicant's current or most recent employer.
4. Letter of intent. A brief statement describing the applicant's experience and how this degree is expected to help achieve his or her career goals.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Application Procedures:

1. Obtain application materials online at www.buffalostate.edu/graduateschooladmissions or from the Graduate School.
2. Request sealed official transcripts from all higher education institutions attended and submit them with the complete application packet to Graduate School.
3. Obtain approval from the Graduate Studies Committee, the department chair, and the Graduate School.

Admission applications are not complete until all required forms, documents, and data are received.

Program Requirements

Required Courses **12 cr**

INT/ECO 601	Engineering Economy
INT 602	Operations Management
INT 659	Integrated Industrial Systems
INT 689	Research Design and Methods

Elective Courses¹ **12-18 cr**

Select from the following:

BUS/HIS 536	American Enterprise System
HIS 607	The U.S. in Contemporary World Affairs
INT 610	Managerial Marketing
INT 611	Network Theory
INT 612	Quality Control Management
INT 630	Work Measurement
INT 661	Manufacturing Properties of Materials
INT 662	Manufacturing Case Studies
INT 670	Production and Inventory Management
INT 675	Just-in-Time Manufacturing
PSC 500	Public Administration and Policy

Master's Project, Master's Thesis, or Comprehensive Examination **0-6 cr**

Select one option:

INT 690	Master's Project
INT 695	Master's Thesis (6)
Comprehensive Examination (0)	

Total Required Credit Hours **30 cr**

¹Selected under advisement
All courses are 3 credit hours unless otherwise indicated.

LITERACY SPECIALIST (BIRTH THROUGH GRADE 12; M.S.ED.)

Literacy Specialist Program: Birth through Grade 12

Program Code: MSED-ED
Major Code: LBT
HEGIS 0830

Elementary Education and Reading Department
National Council for Accreditation of Teacher Education (NCATE)
Accredited
Accredited by International Reading Association
Nancy A. Chicola, *Chair*

Ellen S. Friedland, *Assistant Chair for Graduate Programs*
Keli A. Garas-York, *Program Coordinator*
Bacon Hall 302, (716) 878-5916
www.buffalostate.edu/elementaryeducation

The Elementary Education and Reading Department offers this program leading to New York State certification as a literacy specialist. This program prepares professional literacy specialists to provide instruction for students with reading or writing difficulties. Graduates of this program also will be able to serve as effective resources and leaders for school-wide literacy curriculum and instruction.

Admission Requirements:

1. Have a degree from an accredited college or university.
2. A minimum cumulative GPA of 3.0 (4.0 scale) in undergraduate work. Please submit all transcripts.
3. Submit proof of New York State Initial Certification or New York State Certificate of Qualification, or Provisional Certification in Elementary Education, Childhood and/or Early Childhood Education, a secondary subject area, Special Education, Art Education, Physical Education, or other educational area along with the admission application. Recent graduates or those just completing their undergraduate programs at the time of application, write in the date of the expected certification on the admission application. Submit a copy of certification to the Elementary Education and Reading Department by the time of application for degree candidacy (after completing 6 credits and before the completion of 12 credits).
4. Complete a word-processed statement addressing the following:

- a. Describe your reasons for seeking Literacy Specialist certification
- b. Describe the professional challenge(s) you encountered during your field experiences/first classroom experiences that you hope to address in your graduate work
- c. Discuss what you hope to learn in your graduate program focusing on your interest in working with struggling readers

Your statement will be evaluated according to the following criteria (see rubric):

- a. Organization
- b. Conventions of language
- c. Content
- d. Interest in working with struggling readers, rationale, and significant support for rationale

NOTE: Please sign and date your statement.

5. Submit three letters of reference on special departmental forms that attest to the applicant's potential as a literacy specialist (included in application packet - supplemental materials). They are numbered. Please note that two references must be from college professors/instructors and only one can be from a student teaching supervisor.

6. Submit a professional resume

Applicants will be judged on demonstrated academic records; the strength of recommendations, and the quality of the candidate's statement.

Degree Candidacy: A student who has completed at least 6 credit hours must submit an Admission to Degree Candidacy form before completing 12 credit hours.

Program Requirements

Spring or Summer

EDU 513	Theory, Research and Practice in Literacy Instruction
EDU 535	Teaching Writing: B-12 or EDU 609 Literacy Instruction in the Upper Grades
EDU 611	Literacy in the Primary Grades or EDU 612 Developing Literacy through Literature

Fall

EDU 535	Teaching Writing: B-12 or EDU 609 Literacy Instruction in the Upper Grades
EDU 611	Literacy in the Primary Grades or EDU 612 Developing Literacy through Literature
EDU 642	Literacy Assessment and Evaluation

Spring

3 cr

EDU 606	Literacy Instruction for Linguistically Diverse Students
EDU 643	Teaching Strategies for Students with Reading Difficulties
EDU 646	Literacy Leadership

Summer

EDU 647	Clinical Practicum
EDU 650	Literacy Theory and Research
EDU 655	Seminar in Reading

Program may be completed on a part-time basis through advisement. Pre-requisites apply.

Total Required Credit Hours:

36 cr

All courses are 3 credit hours unless otherwise indicated.

MATHEMATICS EDUCATION (7–12; M.S.ED.)

Master of Science in Education Program

Program Code: MSED-NS

Major Code: MTS

HEGIS 1701.01

Mathematics Department

National Council for Accreditation of Teacher Education (NCATE) Accredited,

Hongliang Xu, Chair

Bishop Hall 317, (716) 878-5621

www.buffalostate.edu/mathematics

This program is designed to develop, enhance, and extend the content knowledge and professional competencies of secondary mathematics teachers. Completion of this master of science program does not lead to New York State initial teaching certification. Those interested in receiving initial certification should consider the postbaccalaureate teacher

certification program in mathematics education grades 7-12 (7055).

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.5 (4.0 scale) in all undergraduate mathematics courses.
2. Completion of at least 18 credit hours beyond calculus, including one semester of linear algebra or abstract algebra, one semester of geometry, and at least one semester of analysis, discrete mathematics, calculus-based probability, or calculus-based statistics. Those with minor deficiencies may enter the premajor program with written permission from the Mathematics Department chair; a copy of this statement will be filed in the Mathematics Department Office and the Graduate School.
3. Acceptance as a graduate student by the department chair and the Graduate School dean.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Mathematics Courses

12-15 cr

Select from the following:

MAT 501	Mathematics for Teachers: Algebra
MAT 521	Mathematics for Teachers: Geometry
MAT 581	Mathematics for Teachers: Probability and Statistics
MAT 601*	Topics in Modern Algebra
MAT 603	Theory of Matrices
MAT 611*	Topics in Real Analysis
MAT 620	Modern Geometry: Selected Topics
MAT 631	Foundations of Mathematics
MAT 651	Theory of Numbers
MAT 670	Discrete Mathematics and Foundations of Computer Science
MAT 681	Intermediate Probability
MAT 683	Statistical Theory
MAT 696	History of Mathematics
MAT 699	Selected Advanced Topics
MAT 701	Modern Algebra I
MAT 711	Analysis I

*Required if not part of student's undergraduate program

Mathematics Education Courses

6-9 cr

Select from the following:

MED 601	Seminar in the Teaching of Mathematics
MED 602	Mathematics for the Secondary School Teacher: Selected Topics (3-9)
MED 604	Teaching of Geometric Concepts
MED 605	Teaching of Algebraic Concepts
MED 606	Logo and Mathematics Learning
MED 607	Technology in Mathematics Education
MED 683	Problem Solving and Problem Posing

Curriculum and Research Courses

6 cr

MED 595	Research Methods and Techniques in Mathematics Education
MED 600	Contemporary Mathematics Curriculum Development

Master's Project or Master's Thesis

3-6 cr

Select one option:

MED 690 Master's Project
MED 795 Master's Thesis in Mathematics Education (3-6)

Total Required Credit Hours **30 cr**

All courses are 3 credit hours unless otherwise indicated.

MATHEMATICS EDUCATION (7–12; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-NS

Major Code: MTS

HEGIS 1701.01

Mathematics Department

National Council for Accreditation of Teacher Education
(NCATE) Accredited

Hongliang Xu, Chair

Bishop Hall 317, (716) 878-5621

www.buffalostate.edu/mathematics

The mathematics education (7-12) postbaccalaureate teacher certification program leads to eligibility for a New York State initial certificate to teach mathematics in grades 7-12. This program is designed for students who have earned a baccalaureate degree in mathematics from an accredited college or university and intend to complete coursework required for New York State certification to teach mathematics.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements:

1. A bachelor's degree in mathematics or an applied mathematics field from an accredited college or university with 36 credit hours of mathematics courses and a minimum GPA of 2.5 (4.0 scale) in mathematics courses.
2. Must have passed the New York State certification exams: the Liberal Arts and Sciences Test (LAST) and the Mathematics Content Specialty Test for provisional/initial certification. Contact the Teacher Certification Office, (716) 878-6121, for details.
3. Two years of high school or one year of college-level foreign language.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Requirements may be fulfilled entirely with graduate courses, entirely with undergraduate courses or with a combination of undergraduate and graduate courses. Graduate-level courses are numbered 500 and higher; undergraduate-level courses are numbered 100–499.

Mathematics Education Courses 18-25 cr

Select one course from the following:

MED 200 Field Experience in Secondary Education
Mathematics

MED 500 Practicum I: Graduate Field Experience in Secondary
Mathematics Education

Select one course from the following:

MED 307 Uses of Technology in the Teaching of Mathematics

MED 607 Technology in Mathematics Education

Select one option from the following:

MED 308W Methods in the Teaching of Secondary School
Mathematics and

MED 300 Field Experience: Methods in the Teaching of
Secondary School Mathematics (1)

or

MED 601 Seminar in the Teaching of Mathematics

Select one course from the following:

MED 383W Learning and Teaching Problem Solving

MED 683 Problem Solving and Problem Posing

Select one option from the following:

MED 407 Student Teaching of Mathematics in Junior
High/Middle School (6)

MED 408 Student Teaching of Mathematics in High School (6)

or

MED 501 Practicum II: Practice Teaching Mathematics in the
Middle School

MED 502 Practicum III: Practice Teaching Mathematics in the
High School

Professional Education Courses 13-15 cr

Select one course from the following:

SPF 303 Educational Psychology: Middle and Secondary
Education

SPF 503 Educational Psychology: Middle and Secondary
Education

Select one course from the following:

SPF 403 Historical and Philosophical Forces Influencing
Secondary Education

SPF 525 Philosophy of Education

Select one course from the following:

EDU 417 Adolescent Literacy

EDU 609 Literacy Instruction in the Upper Grades

Select one course from the following:

EDU 416 Teaching Literacy in Middle and Secondary Schools

EDU 513 Survey of Reading Instruction

Select one course from the following:

EXE 100 Nature and Needs of Individuals with Special Needs

MED 524 Mathematics Instruction at the Secondary Level (1)

Total Required Credit Hours 31-40 cr

All courses are 3 credit hours unless otherwise indicated.

MATHEMATICS EDUCATION (7–12; 5–6 EXTENSION; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-NS

Major Code: MTX

HEGIS 1701.01

Mathematics Department

National Council for Accreditation of Teacher Education
(NCATE) Accredited

Hongliang Xu, Chair
Bishop Hall 317, (716) 878-5621
www.buffalostate.edu/mathematics

This program is designed for students who are currently enrolled in the mathematics education 7-12 postbaccalaureate teacher certification program (7055) or who have been approved for candidacy in the mathematics education master's program (6620). It allows them to extend certification in mathematics to grades 5-12.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements: A New York State Certificate of Qualification (CQ), provisional certificate, or initial certificate to teach mathematics in grades 7-12 or candidacy in the M.S.Ed. in mathematics education program (6620).

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

This program requires 6 additional credit hours of coursework in middle school education. Courses are selected under advisement. Study includes early adolescent development and the application of diverse instructional strategies in middle childhood education, including interdisciplinary teaching and teaming of students and faculty to maximize student learning. Please contact the Mathematics Department for more information.

MULTIDISCIPLINARY STUDIES (M.A. AND M.S.)

Master of Arts Program

Program Code: MA-GR
Major Code: MUL

Master of Science Program

Program Code: MS-GR
Major Code: MUL

HEGIS 4999

Kevin Railey, Associate Provost and Dean, The Graduate School

Kimberly J. Jackson, Program Coordinator and Assistant Dean for Strategic and

Enrollment Planning, The Graduate School
Cleveland Hall 204, (716) 878-5601

www.buffalostate.edu/graduateschool/multi

The Multidisciplinary studies program is designed for individuals with unique professional and educational objectives not readily met by traditional master's degree programs. Through advisement and within certain guidelines students design their own program by selecting graduate courses from academic departments at the college or from other accredited institutions.

There are two tracks available: individualized and public relations management.

Upon satisfactory completion of an approved course of student, either a master of arts or a master of science degree is awarded, depending on the scope and content of the program

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.5 (4.0 scale).
2. A two- to three-page statement of intent (essay) that includes the following: (a) educational objectives; (b) professional objectives; and (c) an explanation of the reasons for interest in a nontraditional study format.
3. An interview with the program coordinator who will contact the student for an appointment after the completed application is received.
4. Identification and consent of a principal adviser (see Advisement section below). (Those students who need assistance identifying a principal adviser should contact the program coordinator in the Graduate School office.)

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Upon satisfactory completion of an approved course of study, either a master of arts or a master of science degree is awarded, depending on the scope and content of the program.

Individualized Track

Kimberly J. Jackson, Program Coordinator
The Graduate School
Cleveland Hall 204, (716) 878-5601

Through advisement and within certain guidelines, this track allows students to design their own programs by selecting graduate courses from any department at the college or from other accredited institutions.

Total = 30 credit hours

Public Relations Track

Deborah A. Silverman, Principal Adviser
Communication Department
Bishop Hall 225, (716) 878-3606

This track is designed for public relations practitioners in the western New York area or those who wish to find their way into that career. The program will assist students in

obtaining coursework in public relations, in combination with a related field such as business, creative studies, or leadership. The track identifies the series of appropriate courses, those currently being offered to those professionals seeking advanced educational opportunities.

Public Relations, M.S.

Core courses (9 credit hours, all courses 3 credits)

COM 610: Strategic Public Relations

COM 620: Public Relations Management

COM 630: Applications of Public Relations

Students also take 21 credits of electives (7 courses), selected through advisement and based on student interest and career goals. Six of these 21 credits (2 courses) in electives may be additional COM courses, including COM 519:

Communication for Leaders and Managers, and COM 590: Independent Study.

Master's Project (3 credit hours)

Total = 30 credit hours

Program Requirements (All Tracks)

1. Completion of a minimum of 30 credit hours, comprising at least 15 hours of 600- and 700-level courses, including the master's thesis or master's project.
2. A maximum of 18 credit hours may be taken in a discipline that offers a master's degree when the student does a master's thesis (6 credits). A maximum of 15 credit hours may be taken in a discipline that offers a master's degree when the student does a master's project (3 credits).
3. A maximum of 18 credit hours may be taken in a discipline that does not offer a master's degree.
4. A maximum of 15 credit hours may be taken at another accredited institution. This coursework must conform to the limitations stated in 2 and 3 (above) and must have the prior approval of the principal adviser.
5. Only grades of B or better will be accepted as transfer credit. An official transcript showing transfer credit must be submitted to the Graduate School.
6. Coursework (including transfer credit) must be completed within the six-year period immediately preceding the date of completion of the program.
7. A maximum of 6 credit hours of independent study may be included in the program.
8. Students must maintain a minimum cumulative GPA of 3.0 (4.0 scale).
9. Master of arts candidates must complete a thesis approved by the principal adviser and a second reader. Individual principal advisers may impose further requirements on candidates based on practices and policies of their home department, third reader or oral defense, for example. These must be specified in writing at the outset of the degree program.
10. Master of science candidates must complete a) a research methods course and b) a supervised project approved by the principal advisor. Individual principal

advisors may impose further requirements on candidates based on practices and policies of their home department (second reader or oral defense, for example). These must be specified in writing at the outset of the degree program. 11. An application for admission to candidacy, approved by the student's principal adviser must be submitted to the Graduate School before the completion of 12 credit hours at Buffalo State.

Advisement (All Tracks)

After completing the statement of intent and meeting with the program coordinator, students identify a principal adviser. The principal adviser reviews the statement of intent and eventually approves a plan of study and agrees to serve as thesis/project adviser. A detailed plan of study, including specific courses, may be required.

When a principal advisor has been secured, the Principal Adviser Consent Form must be completed.

The principal adviser also enumerates any additional requirements the student must complete before being permitted to advance to candidacy, including but not limited to requiring that the student identify a second adviser to support the course of study and read the eventual thesis or project.

The principal adviser is charged with working closely with the student throughout the plan of the study and with service as a point of contact with the Graduate School to support and advise the student. It is the student's responsibility to initiate and maintain contact and ongoing communication with the principal adviser.

MUSEUM STUDIES (M.A.)

Master of Arts Program

Program Code: MA-NS

Major Code: MST

HEGIS 1099

History and Social Studies Education Department

Andrew D. Nicholls, *Chair*

Classroom Building C205, (716) 878-5412

www.buffalostate.edu/history

The Museum Studies Master of Arts program is designed for individuals interested in pursuing a career in museums or related cultural institutions. The program utilizes a multidisciplinary approach including both theoretical instruction and practical experience to prepare students for museum careers. In addition to a set of core courses, students specialize in one of three fields of museum work. Each student works closely with an academic advisor to develop a program that will position him or her as an innovator who will serve the broad and changing needs of both collections and communities.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75 (4.0 scale).

2. Two letters of recommendation.
3. A 500-word personal statement describing the applicant's graduate education goals and interest in the museum field.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Courses		9 cr
MST 601	Theory and Method in Museum Studies	
MST 660	Museums and Society	
CRS 559	Principles of Creative Problem Solving	
Collections Management and Curatorial Track		12 cr
MST 620	Collections Management	
MST 621	Registration Methods	
MST 622	Researching and Presenting Museum Collections	
MST 623	Digital Music Collections	
MST 624	Museum Archives	
Other course(s) under advisement		
Visitor Experience and Education Track		12 cr
MST 630	Visitor Experience in Museums	
SSE/MST 631	Learning from Museums	
SSE/MST 632	Teaching with Historic Places	
AED 505	Foundations in Museum Education Studies	
AED 604	Fundamentals of Educational Programming for Museums	
EDC 617	Educational Technology for Informal Learning Environments	
SPF 526	School Communication and Public Interaction	
EXE 500	Individuals with Special Needs	
Other course(s) under advisement		
Museum Operations Track		12 cr
MST 640	Museum Administration	
MST 641	Revenue Generation for Museums	
MST 643	Museum Marketing and Public Relations	
BUS 545	Basic Accounting for Business and Non-business Organizations	
BUS 688	Leadership in Organizations	
COM 519	Communication for Leaders and Managers	
Other course(s) under advisement		
All Tracks		6-9 cr
MST 590	Independent Study	
MST 688	Museum Internship (3, 6)	
All Tracks		3-6 cr
MST 795	Master's Thesis (6)	
or		
MST 690	Master's Project (3)	
Total Required Credit Hours		33 cr

All courses are 3 credit hours unless otherwise indicated.

MUSEUM STUDIES (GRADUATE CERTIFICATE)

Graduate Certificate Program

Program Code: GRCT-NS

Major Code: MST

HEGIS 1099

History and Social Studies Education Department

Andrew D. Nicholls, *Chair*

Classroom Building C205, (716) 878-5412

www.buffalostate.edu/history

The museum studies certificate is a flexible program designed to allow students to tailor a program to their background and primary work experience. Each student is assigned an academic adviser who works closely with the student to create an appropriate program. The certificate in museum studies can be applied toward a master's degree program at Buffalo State in art education (K-12), history, social studies education (7-12), creative studies, or applied economics. Students interested in combining the museum studies certificate with a degree program are advised to first discuss this option with an adviser from the corresponding degree program.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75 (4.0 scale).
2. Two letters of recommendation.
3. A 500-word personal statement describing the applicant's graduate education goals and interest in the museum field.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Courses		6 cr
MST 660	Museums and Society	
MST 601	Critical Issues in Museum Studies	
Elective Courses¹		12 cr
AED 505	Foundations in Museum Education Studies	
COM 519	Communication for Leaders and Managers	
CRS 559	Principles of Creative Problem Solving	
or		
CRS 560	Methods, Theories, and Models of Creative Learning	
DES 640	Graduate Studio in Design	
ECO 508	Applied Macroeconomic Theory	
HIS 500	Studies in American History	
HIS 590	Independent Study	
HIS 620	Exceptional Hispanic Individuals: Historic and Cultural Concerns	
HIS 623	Problems in U.S. History	
HIS 688	Museum Internship ¹	
HIS 709	Local History: Research Methods and Techniques	
Or other course(s) under advisement		
Total Required Credit Hours		18 cr

¹Selected under advisement.

All courses are 3 credit hours unless otherwise indicated.

MUSIC EDUCATION (MM)

MM-AH MUS

HEGIS 0832

Music Department

National Association of Schools of Music (Accredited)

Bradley J. Fuster, *Chair*

Rockwell Hall 203, (716)878-6401

fusterbj@buffalostate.edu

Victoria J. Furby, Program Coordinator

Rockwell Hall 132 G, (716)878-3159

furbyvj@buffalostate.edu

<http://www.music.buffalostate.edu>

The Mus.M degree is designed for the in-service music teacher who already possesses an initial Teaching Certificate. The degree program will help students become accomplished reflective educators as indicated by the Buffalo State College Teacher Education Unit Conceptual Framework for advanced programs. This online degree is comprised of courses that are critical to the ongoing professional development of the music teacher. The entire program will require 30 credits and includes 24 credits of required graduate coursework in music history, music theory, music education, and a master's project or master's thesis. An additional six credits of elective coursework will include graduate courses chosen from repertoire and ensemble leadership, educational foundations, musical theatre, and a flexible independent study. The department anticipates developing additional elective graduate offerings in the areas of music education, music technology, music history, music theory, composition, and/or performance after the initial implementation of the degree.

Admission Requirements:

- A bachelor's degree from an accredited college or university with a minimum cumulative grade point average of 2.5 (on a 4.0 scale).
- Bachelor's degree in music education from an accredited institution. It must also adhere to the general guidelines for undergraduate competencies in music theory, music history, music performance, conducting, ensemble participation and music education preparation as established by the National Association of Schools of Music (NASM). Students must have earned a minimum cumulative GPA of 3.0 in required music courses in their undergraduate degrees.
- A teaching certificate or licensure from one of the 50 states in the U.S.
- Three letters of recommendation from persons familiar with the applicant's academic background, musicianship and teaching effectiveness. This letter should provide evidence of successful teaching experience, academic ability and professionalism.
- A resume of educational and professional achievements.
- A scholarly writing sample of no less than 4 and no more than 15 pages using appropriate citations and

sources in the area(s) of music theory, music history, music education or educational psychology.

- Although not required, formal music teaching experience in public or private school systems is preferred.
- Applicants may be asked to participate in a phone or on-line interview at the discretion of the music education coordinator.

Additional admission requirements for those applicants seeking New York State Professional Certification:

- New York State Initial Certification. (Those students seeking New York State Professional Certification with teaching certificates/licenses from states other than New York must apply for and be granted a New York State Initial Teaching Certificate. Requirements for obtaining a New York State Initial Teaching Certificate can be found by visiting the following link:
<http://usny.nysed.gov/teachers/>
<http://usny.nysed.gov/teachers/>)
- A minimum of one 3-credit hour course involving students with special needs. Transcripts must be provided that document a course which entails instruction regarding the understanding and development of effective teaching strategies for students with special needs. Students without documentation of a special needs class will be required to remediate this requirement by taking EXE 100-Individuals with Special Needs, offered online. This course will not fulfill the course requirements of the Mus. M. in Music Education. Additional coursework, (currently only offered in traditional format) that fulfill this requirement and also fulfill elective credits for the Mus.M in Music Education degree, include: EDU 577 Teaching Individuals with Exceptionalities and EXE 500 Individuals with Special Needs.)

Please Note: Applications accepted for Summer 2014 admission.

Program Requirements

Music History/Theory		6 Credits
MUS 602	Graduate Music History	
MUS 620	Graduate Music Theory	
Music Education		12 Credits
MUS 601	Foundations of Music Education	
MUS 625	Curriculum and Assessment	
MUS 630	Contemporary Issues in Music Education	
MUS 640	Research Methods in Music Education	
Electives (select 6 or 9 credits from the following)		
SPF 503	Educational Psychology	
MUS 590	Independent Study	
MUS 624	Social Commentary in Musical Theatre	
MUS 641	Repertoire and Ensemble Leadership	
Project/Thesis		3 or 6 Credits
MUS 690	Master's Project	
	OR	
MUS 695	Master's Thesis	

PHYSICS EDUCATION (7–12; M.S.ED.)

Master of Science in Education Program

Program Code: MSED-NS
Major Code: PHS
HEGIS 1902.01

Physics Department

National Council for Accreditation of Teacher Education (NCATE) Accredited
Michael DeMarco, *Chair*
Science Building 262, (716) 878-5004

Dan L. MacIsaac, *Program Coordinator*
Science Building 222, (716) 878-3802
www.buffalostate.edu/physics

The master of science in physics education is designed for teachers who wish to combine advanced work in physics with graduate work in education.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.5 (4.0 scale).
2. A New York State Certificate of Qualification (CQ), provisional certificate, or professional or initial certificate in a secondary science or mathematics.
3. An application packet, including a personal statement and three letters of reference.
4. An interview may be required.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Physics Content with Model Pedagogy		18 cr
PHY 510	Physics for High School Teachers: Content and Pedagogy (6)	
PHY 620	Powerful Ideas and Quantitative Modeling: Force, Motion, and Energy (6)	
PHY 622	Powerful Ideas and Quantitative Modeling: Electricity and Magnetism (6)	
Elective Courses		9 cr
<i>Select three courses from the following:</i>		
PHY 518	Wave Phenomena and Optics	
PHY 520	Modern Physics	
PHY 525	Nuclear and Particle Physics	
SCI 527	Current Topics in Science	
SCI 632	Curriculum Trends in Science Teaching in the Secondary School	
SCI 664	Teaching Science with Media	
SCI 685	Evaluation in Science Education	
Seminar		3 cr
PHY 500	Physics Education Research Seminar	
Master's Project		3 cr
PHY 690	Master's Project	
Total Required Credit Hours		33 cr

All courses are 3 credit hours unless otherwise indicated.

PHYSICS EDUCATION (7–12; M.S.ED.) WITH ALTERNATIVE CERTIFICATION

Master of Science in Education with Alternative Certification Program

Program Code: MSED-NS
Major Code: PHA
HEGIS 1902.01

Physics Department

National Council for Accreditation of Teacher Education (NCATE) Accredited
Michael DeMarco, *Chair*
Science Building 262, (716) 878-5004

Dan L. MacIsaac, *Program Coordinator*
Science Building 222, (716) 878-3802
www.buffalostate.edu/physics

This master of science in physics education is designed for individuals who did not attain certification as part of their undergraduate curriculum. After completion of 200 clock hours of instruction, including 40 hours of field study, candidates may qualify for a NYSED transitional B certificate allowing them to teach in New York State.

Admission Requirements:

1. A bachelor's degree in physics or a related area from an accredited four-year institution with a minimum cumulative undergraduate GPA of 3.0 (4.0 scale) or approval of the department chair.
2. A minimum of 18 credit hours (total) in two sciences other than physics (may be completed during the program if not completed by the time of admission).
3. One year of college study or two years of high school study of a language other than English (may be completed during the program if not completed by the time of admission).
4. Passing scores on two New York State examinations: the Liberal Arts and Sciences Test (LAST) and the Physics Content Specialty Test (CST). (These exams may be taken after admission to the program but must be passed before a teaching position is accepted).
5. A written personal statement.
6. Three letters of reference.
7. An interview may be required.

(Note: These admission requirements are mandated in the Transitional B certification regulations.)

Program Requirements

Exceptional Education and Educational Foundations		6 cr
SPF 529	Adolescent Psychology	
<i>Select one course from the following:</i>		
EXE 500	Individuals with Special Needs	
EXE 577	Teaching Individuals with Exceptionalities in the Regular Classroom	
Literacy		6 cr
EDU 417	Adolescent Literacy	

Select one course from the following:

EDU 416	Teaching Literacy in Middle and Secondary Schools
EDU 609	Improving Reading in the Content Areas

Physics Content with Model Pedagogy 18 cr

PHY 510	Physics for High School Teachers: Content and Pedagogy (6)
PHY 620	Powerful Ideas and Quantitative Modeling: Force, Motion, and Energy (6)
PHY 622	Powerful Ideas and Quantitative Modeling: Electricity and Magnetism (6)

Electives 6 cr

PHY 518	Wave Phenomena and Optics
PHY 520	Modern Physics
PHY 525	Nuclear and Particle Physics
PHY 616	Advanced Dynamics
PHY 618	Advanced Electricity and Magnetism I
SCI 527	Current Topics in Science
SCI 632	Curricular Trends in Science Teaching in the Secondary School
SCI 664	Teaching Science with Media
SCI 685	Evaluation in Science Education
Or other courses by advisement.	

Seminar 3 cr

PHY 500	Physics Education Research Seminar
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Mentored Physics Teaching 3 cr

PHY 502	Initial Teaching Experience for Alternative Certification
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Master's Project 3 cr

PHY 690	Master's Project
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Other Science Courses 18 cr

18 credits spread over two other sciences. These may be undergraduate courses.

Total Required Credit Hours 45 cr

All courses are 3 credit hours unless otherwise indicated.

PHYSICS EDUCATION (7–12; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-NS

Major Code: PGS

HEGIS 1902.01

Physics Department

National Council for Accreditation of Teacher Education

(NCATE) Accredited

Michael DeMarco, *Chair*

Science Building 262, (716) 878-5004

Dan L. MacIsaac, *Program Coordinator*

Science Building 222, (716) 878-3802

www.buffalostate.edu/physics

The physics postbaccalaureate certification-only program in secondary education leads to a New York State Initial Certificate for teaching both physics and general science in grades 7–12. This program is intended for persons with a bachelor's degree in physics or a related field who are interested in obtaining certification to teach physics in secondary schools or general science in middle schools. A

minimum GPA of 2.75 in physics courses is required for admission to SED 405, SED 407, and SED 408.

Program Requirements

Intellectual Foundations Requirements 39-66 cr

Total Required Credit Hours in Physics 34 cr

PHY 111	University Physics I (5)
PHY 112	University Physics II (5)
PHY 213	University Physics III
PHY 305	Modern Physics I
PHY 306	Modern Physics II
PHY 310	Computational Physics Laboratory (2)
PHY 320	Introduction to Theoretical Physics (4)
PHY 324	Electric Circuits
PHY 410	Advanced Physics Laboratory
PHY 440	Electricity and Magnetism I

Total Required Credit Hours in Professional Education 24 cr

SPF 303	Educational Psychology: Middle and Secondary Education
EDU 416	Teaching Literacy in Middle and Secondary Schools
EDU 417	Adolescent Literacy
EXE 372	Foundations of Teaching Adolescents with Disabilities
SED 200	Field Experience in Secondary Science Education
SED 401	Techniques for Teaching Laboratory Activities in the Secondary Science Classroom
SED 405	Methods and Materials in Teaching Secondary School Science
SED 409	Seminar in Secondary Science Education

Total Required Credit Hours in Student Teaching 12 cr

SED 407	Practice Teaching Science in the Middle School (6)
SED 408	Practice Teaching Science in the High School (6)

Total Required Credit Hours in Other Fields for Certification 44 cr

A. One Year (or Equivalent) of a Foreign Language 6 cr

B. Cognate Sciences 23 cr

CHE 111	Fundamentals of Chemistry I (4)
CHE 112	Fundamentals of Chemistry II (4)
GES 101	Introductory Geology
GES 103	Introductory Geology Laboratory (1)

Select one course from the following:

GES 111	General Oceanography
GES 131	Introduction to Astronomy
GES 241	Meteorology

Select two courses from the following:

BIO 211	Introduction to Cell Biology and Genetics (4)
BIO 212	Introduction to Organismal Biology and Diversity (4)
BIO 213	Introduction to Ecology, Evolution, and Behavior (4)

C. Mathematics 15 cr

MAT 161	Calculus I
MAT 162	Calculus II
MAT 163	Using Technology to Explore Calculus I (1)
MAT 164	Using Technology to Explore Calculus II (1)
MAT 263	Calculus III
MAT 264	Using Technology to Explore Calculus III (1)
MAT 315	Differential Equations

PHYSICS EDUCATION (7-12; 5-6 EXTENSION; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-NS

Major Code: PGX

HEGIS 1902.01

Physics Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

Michael DeMarco, *Chair*

Science Building 262, (716) 878-5004

Dan L. MacIsaac, *Program Coordinator*

Science Building 222, (716) 878-3802

www.buffalostate.edu/physics

The physics postbaccalaureate certification-only program in secondary education leads to a New York State Initial Certificate for teaching both physics and general science in grades 5-12. This program is intended for persons with a bachelor's degree in physics or a related field who are interested in obtaining certification to teach physics in secondary schools or general science in middle schools. A minimum GPA of 2.75 in physics courses is required for admission to SED 405, SED 407, and SED 408.

Program Requirements

Intellectual Foundations Requirements	39–66 cr
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Total Required Credit Hours in Physics	34 cr
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PHY 111	University Physics I (5)
PHY 112	University Physics II (5)
PHY 213	University Physics III
PHY 305	Modern Physics I
PHY 306	Modern Physics II
PHY 310	Computational Physics Laboratory (2)
PHY 320	Theoretical Physics (4)
PHY 324	Electric Circuits
PHY 410	Advanced Physics Laboratory
PHY 440	Electricity and Magnetism I

Total Required Credit Hours in Professional Education	30 cr
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SPF 303	Educational Psychology: Middle and Secondary Education
EDU 416	Teaching Literacy in Middle and Secondary Schools
EDU 417	Adolescent Literacy
EXE 372	Foundations of Teaching Adolescents with Disabilities
SCI 323	Science as Inquiry
SED 200	Field Experience in Secondary Science Education
SED 310	Teaching Science in the Middle School
SED 401	Techniques for Teaching Laboratory Activities in the Secondary Science Classroom
SED 405	Methods and Materials in Teaching Secondary School Science
SED 409	Seminar in Secondary Science Education

Total Required Credit Hours in Student Teaching	12 cr
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SED 407	Practice Teaching Science in the Middle School (6)
SED 408	Practice Teaching Science in the High School (6)

Total Required Credit Hours in Other Fields for Certification	44 cr
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A. One Year (or Equivalent) of a Foreign Language	6 cr
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B. Cognate Sciences	23 cr
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CHE 111, CHE 112	Fundamentals of Chemistry I, II (4, 4)
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GES 101	Introductory Geology
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GES 103	Introductory Geology Laboratory (1)
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Select one course from the following:

GES 111	General Oceanography
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GES 131	Introduction to Astronomy
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GES 241	Meteorology
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Select two courses from the following:

BIO 211	Introduction to Cell Biology and Genetics (4)
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BIO 212	Introduction to Organismal Biology and Diversity (4)
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BIO 213	Introduction to Ecology, Evolution, and Behavior (4)
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C. Mathematics	15 cr
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MAT 161	Calculus I
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MAT 162	Calculus II
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MAT 163	Using Technology to Explore Calculus I (1)
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MAT 164	Using Technology to Explore Calculus II (1)
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MAT 263	Calculus III
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MAT 264	Using Technology to Explore Calculus III (1)
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MAT 315	Differential Equations
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Total Required Credit Hours	118 cr
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PROFESSIONAL APPLIED AND COMPUTATIONAL MATHEMATICS (M.S.)

Master of Science Program

Program Code: MS-NS

Major Code: ACM

HEGIS 1701

Mathematics Department

Hongliang Xu, *Chair*

Bishop Hall 317, (716) 878-5621

www.buffalostate.edu/mathematics

Professional Applied and Computational Mathematics (PACM) is an innovative Professional Science Master's (PSM) degree program. This program, a collaboration between Buffalo State and a group of partners from Buffalo and the Western New York area, brings together a diverse interdisciplinary group of active faculty from academia and adjunct faculty and advisory board members from business, industry, non-profit organizations, and government agencies. The goal of the program is to train graduate students for careers in many emerging fields that now demand a new type of workforce with solid and in-depth background in applied and computational mathematics, as well as with effective business and communication skills.

The PACM program consists of 27 credits of academic training in data analysis, mathematical modeling, business communication and management, as well as 3 credits of research internship.

The development of the program was funded by the Alfred P. Sloan Foundation.

National Science Foundation (NSF) funds for tuition and stipends are available on a competitive basis for full-time students.

The program is recognized as a Professional Science Master's degree by the Council of Graduate Schools (CGS).

Admission Requirements:

1. Bachelor's degree with a minimum cumulative GPA of 3.0 (4.0 scale) in the last 60 credit hours.
2. If minimum requirements are not met, the graduate faculty may grant an applicant conditional admission to the program as a premajor.
3. The following mathematics courses completed: Single and Multivariable Calculus; Differential Equations; Linear Algebra; Discrete Mathematics; Calculus-based Probability; and Calculus-based Statistics.
4. Students must demonstrate knowledge of a standard programming language such as C++, Java, Fortran, Maple, or Mathematica.
5. An interview with PACM faculty.

Program Requirements

Required credit hours in analytical mathematical modeling 9 cr

ACM 610	Continuous Foundations of Applied Math From a Problem Solving Perspective (1)
ACM 611	Discrete Foundations of Applied Math From a Problem Solving Perspective (1)
ACM 612	Computational Foundations of Applied Mathematics From a Problem Solving Perspective (1)
ACM 620	Optimization of Discrete Models (1)
ACM 621	Empirical Model Building (1)
ACM 622	Modeling Change with Dynamical Systems (1)
ACM 630	Numerical Linear Algebra (1)
ACM 631	Eigenvalue Problems (1)
ACM 632	Numerical Calculus (1)

Required credit hours in statistical data analysis 9 cr

ACM 640	Linear Regression and Correlation (1)
ACM 641	Design and Analysis of Experiments (1)
ACM 642	Nonparametric Statistics (1)
ACM 650	Random Walks and Brownian Motion (1)
ACM 651	Markov Chains (1)
ACM 652	Continuous-time Stochastic Processes (1)
ACM 660	Logistic Regression (1)
ACM 661	Survival Analysis (1)
ACM 662	Time Series Analysis and Forecasting (1)

Required credit hours in business communication and project management courses 9 cr

One 3 credit course from each area below:

Business Communication:

BUS/COM 519	Communication for Managers and Leaders
COM 610	Strategic Public Relations

Project Management:

ECO 660	Cost-Benefit Analysis
MET 620	Managing Engineering Projects

Operations Management:

BUS/SPF 688	Leadership in Organizations
BUS/SPF/PSY 715	Management Practices and Techniques
INT 602	Operations Management

Required credit hours in Project	3 cr
ACM 690	Master's Project

Total requirements 30 cr

Note: All courses are 3 credit hours unless otherwise indicated.

PUBLIC ADMINISTRATION IN PUBLIC AND NONPROFIT MANAGEMENT (M.P.A.)

Masters Public Administration

Program Code: MPA-NS
Major Code: PNM
HEGIS 2101.00

Political Science Department, Division of Public Administration

M. Stephen Pendleton, Department Chair

Laurie Buonanno, Public Administration Division *Director*
Keith Henderson, *Coordinator-Public Administration Track (PBA)*
Angelo Conorozzo, *Coordinator-Nonprofit Administration Track (NPA)*

B218 Classroom Building, (716) 878-6116
www.buffalostate.edu/politicalscience/

This program prepares individuals for positions of leadership and management in public and nonprofit organizations. The program provides students with an advanced course of graduate study concentrating on the conceptual, technical, and professional education and skills required for administrative and leadership positions in governmental offices and nonprofit organizations.

The program blends three essential components of training to prepare graduates for a career in the public or nonprofit sector:

1. In-depth knowledge of the public and non-profit sectors.
2. Professional or craft knowledge in the administration of governmental and non-profit organizations.
3. Exposure of students to the world of practice by means of a project or practicum.

Totaling 36 credit hours, the M.P.A. program includes six required core courses (18 credit hours), two tracks sharing the common core (15 credit hours each), one in Public Administration and one in Nonprofit Administration, and 3 credit hours of a project or practicum.

Admission Requirements:

1. Bachelor's degree from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale), or a master's degree from an accredited institution with a minimum cumulative GPA of 3.0 (4.0 scale).
2. Applicants who hold a bachelor's degree but do not meet either of the above criteria may be admitted if they attain a minimum combined quantitative/verbal score of 1000 on the Graduate Record Exam (GRE), attain a minimum score of 45 on the Miller Analogies Test (MAT), or complete 6 credit hours of 500-level coursework at the college as an accepted pre-major student with a minimum cumulative GPA of 3.5.
3. The Public Administration Division Committee will review the application and if approved the respective coordinator will schedule an interview for the candidate.
4. Two letters of reference, with at least one attesting to academic abilities.
5. A letter of intent describing the applicant's educational objectives, background in statistics and/or methodology, interest in the MPA program, career goals and the choice of track (public administration or nonprofit) in which to concentrate.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Courses		18 cr
PAD 500	Public Administration and Policy	
PAD 601	Public Budgeting	
PAD 735	Administrative Practices in Public and Nonprofit Sectors	
PAD 689	Research Methods in Public Administration	
PAD 699	Data Analysis and Presentation	
PSC 607	American Government and Politics	

Select one of two tracks:

Public Administration		15 cr
PAD 501	Comparative Public Administration	
PLN 560	Environmental Impact Assessment	
PAD/SPF 712	Managing Program Evaluation	
BUS/COM 519	Communication for Leaders and Managers	
BUS/SWK 603	Human Resource Management	
PAD 502	Administrative Law	
PAD 587	Special Topics	

Nonprofit Administration		15 cr
SWK/PAD 645	Program Planning in the Human Services	
BUS/SWK 603	Human Resource Management	
SWK/PAD 643	Supervision in the Human Services	
BUS/COM 519	Communication for Leaders and Managers	
PAD/SPF 712	Managing Program Evaluation	
BUS/SPF 688	Leadership in Organizations	
PAD 587	Special Topics	

PAD 690

Master's Project or Practicum (REQUIRED)

Total Required Credit Hours

36 cr

PUBLIC MANAGEMENT (GRADUATE CERTIFICATE)

Graduate Certificate Program

Program Code: GRCT-NS
Major Code: PMG
HEGIS 2102

Political Science Department

M. Stephen Pendleton, *Chair*
Laurie Buonanno, Director, Public Administration Division
B218 Classroom Building, (716) 878-6116
www.buffalostate.edu/politicalscience/

The Advanced Certificate in Public Management provides students with an advanced course of study at the graduate level concentrating on the conceptual, technical, and professional education and skills required for administrative and leadership positions in governmental offices and not-for-profit agencies. The program, totaling 15 credit hours, includes three required core courses (9 credit hours) and two electives (6 credit hours) taken from Public Administration (PAD) graduate courses. Transfer credit may be given for one or both of the elective courses. Students may matriculate in a Master's program at Buffalo State while pursuing this Certificate.

Online Availability: Some courses in the Certificate are offered hybrid and online.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 3.00 (4.0 scale) or a master's degree from an accredited institution with a minimum GPA of 3.0 (4.0 scale).
2. A brief written statement of the applicant's professional or educational goals and how a graduate certificate in public management supports these goals.
3. Successful review by the Admissions Committee.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Courses		9 cr
PAD 500	Public Administration & Policy	
PAD 601	Public Budgeting	
PAD 735	Administrative Practices in Public and Nonprofit Sectors	

Elective Courses: Select two courses with the PAD prefix. **6 cr**

Total Required Credit Hours

15 cr

All courses are 3 credits unless otherwise indicated.

SCIENCE EDUCATION (M.S.Ed.)

Master of Science in Science Education Program

Program Code: MSED-NS

Major Code: SBI (Leading to Initial NYS Teacher Certification in Biology 7-12)
SCH (Leading to Initial NYS Teacher Certification in Chemistry 7-12)
SEA (Leading to Initial NYS Teacher Certification in Earth Science 7-12)
SPH (Leading to Initial NYS Teacher Certification in Physics 7-12)

HEGIS: 0834

Earth Sciences and Science Education Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

Gary S. Solar, *Chair*

Science Building 271, (716) 878-6731

Catherine Lange, *Program Coordinator*

Science Building 211, (716) 878-5558

langecl@buffalostate.edu

www.buffalostate.edu/earthsciences

This Master of Science in Science Education program is designed for individuals holding an undergraduate degree in a core science (Biology, Chemistry, Earth Sciences, Geology, or Physics). Candidates who complete 37 credit hours (which includes student teaching and a master's project) in education coursework may qualify for NYSED initial certification allowing them to teach science in grades 7-12 in New York State.

Admission Requirements:

Candidates new to Buffalo State College
Potential candidates will follow Buffalo State College entrance procedures, which include an online Graduate School Application (<http://www.buffalostate.edu/graduateschool/admissions.xml>). Applicants must have a baccalaureate degree with sufficient academic background in the prospective area of teaching to take graduate work in the discipline.

Candidates are strongly encouraged to contact the program coordinator for a transcript and a pre-application interview. The following criteria will also be required:

1. Official transcripts from all institutions that the candidate has attended.
2. Overall GPA 2.50 or higher.
3. One year of foreign language.
4. Science certification area (Biology, Chemistry, Earth Sciences, Geology or Physics) GPA of 2.75 or higher.
5. Thirty hours of science (Biology, Chemistry, Earth Sciences, Geology or Physics).
6. Statement of intent that should include
 - a) reasons for pursuing graduate study in science education;
 - b) career aspirations;
 - c) special interests within the field;

d) any unusual features of background that might need explanation or be of interest to the program's admissions committee.

7. Letter of reference that includes an assessment of the applicant's ability to work with others.

Buffalo State Quick Admit

Candidates with undergraduate degrees from SUNY Buffalo State - The Science Education Department will have an agreement with the content science departments to "Buffalo State Fast Track" their majors wishing to become certified to teach. Students in the following degree programs at Buffalo State College who meet the GPA requirements (2.50 or higher overall and 2.75 in science discipline) can move directly into the M.S.Ed. program with this Buffalo State Fast Track option:

- 1) BA Biology
- 2) BA Chemistry
- 3) BA Geology (BS Earth Sciences only with foreign language requirement)
- 4) BA Physics (BS Physics only with foreign language requirement)

Official transcripts are not required for candidates on Buffalo State Fast Track.

Program Requirements

Professional Education and Science Education		12 cr
SCI 502	Secondary Science Education Teaching: Theory, Content and Pedagogy	
SCI 545	Literacy for Teaching Science	
SCI 650	Current Topics in Science Education	
SCI 664	Teaching Science with Technology	
EXE 500	Individuals with Special Needs	
SPF 503	Education Psychology	
EDU 609	Improving Reading in the Content Areas	
Practica		12 cr
SCI 677	Middle School Science Teaching Experience	
SCI 678	High School Science Teaching Experience	
SCI 679	Seminar in Science Education (1 cr)	
Culminating Project		6 cr
SCI 690	Master's Project	
Total Required Credit Hours		37 cr

All courses are 3 credit hours unless otherwise indicated.

SOCIAL STUDIES EDUCATION (7-12; M.S.Ed.)

Master of Science in Education Program

Program Code: MSED-NS

Major Code: SSS

HEGIS 2201.01

History and Social Studies Education Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

Andrew D. Nicholls, *Chair*
 Classroom Building C205, (716) 878-5412
www.buffalostate.edu/history

The master of science in social studies education (7-12) program helps candidates become educational leaders and innovative change agents as they acquire eligibility for permanent/professional teaching certification for grades 7-12.

The program is based on a model that gives equal weight to pedagogy and content matter. Fifteen credit hours of social studies education/pedagogy and 15 credit hours of history/social sciences are required for the M.S. in education degree. The social studies education/pedagogy portion of the program consists of courses in social studies curriculum, social studies methods, theory, and research methods to address the curricular concerns of the National Council for the Social Studies. The history/social science portion is divided into 9 credit hours of concentration and 6 credit hours of electives. Furthermore, the program links pedagogy and the content area by requiring two block courses (6 credit hours each) so students concurrently take a history and related pedagogy course in the same semester.

At the completion of 12 credit hours of coursework in the program, the student must have achieved a minimum GPA of 3.0 (4.0 scale). Prior to the completion of 12 credit hours, the student must file an application for candidacy, which is a written contract specifying the courses to be completed in the master's program. Advisement: Each student is assigned an academic adviser. It is imperative that students regularly consult with their advisers. All students must have their programs of study approved by their advisers and the department chair.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75 (4.0 scale).
2. A New York State Certificate of Qualification (CQ), provisional certificate, or initial certificate to teach social studies.
3. 36 credit hours in history and/or the social sciences.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Graduation Requirements: (a) Successful completion of a master's thesis (SSE 795), or (b) a comprehensive examination, or (c) defense of a graduate portfolio.

Program Requirements

At least 15 credit hours must be from 600- or 700-level courses.

Required Courses¹ 15 cr

History and/or social science courses; 9 or more credit hours must be concentrated in a single discipline.

Professional Education Courses 15 cr

SSE 502*	Teaching Social Studies
SSE 513	Seminar in Secondary Social Studies Education
SSE 655*	Social Studies Laboratory
SSE 689	Research Methods and Techniques in Secondary Social Studies

SSE elective Social Studies Education Elective

*Must be taken concurrently with one History content course

Master's Thesis, Portfolio Defense, or Comprehensive Examination 0-6 cr

Select one option:

SSE 795 Master's Thesis (3-6)

Defense of Graduate Portfolio (0)

Comprehensive Examination (0)

Total Required Credit Hours 30-36 cr

¹Selected under advisement

All courses are 3 credit hours unless otherwise indicated.

SOCIAL STUDIES EDUCATION (7-12; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-NS

Major Code: SSS

HEGIS 2201.01

History and Social Studies Education Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

Andrew D. Nicholls, *Chair*

Classroom Building C205, (716) 878-5412

www.buffalostate.edu/history

The social studies education (7-12) postbaccalaureate teacher certification program leads to eligibility for a New York State initial certificate to teach social studies in grades 7-12. This program is designed for students who have earned a baccalaureate degree from an accredited college or university in history or social science, or another discipline with a 36-credit concentration in history and/or social science courses, and who intend to complete the coursework required for New York State certification to teach social studies in secondary or middle schools.

The program supplies the background knowledge necessary for teachers to implement the New York State learning standards for social studies in grades 7-12. It also meets the standards set by national professional organizations, such as the National Council for the Social Studies and the National Council for the Accreditation of Teacher Education.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

To student teach, a student must have a minimum cumulative GPA of 2.75, as well as maintain grades of C or higher in SSE 303 and SSE 309.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75

(4.0 scale) in all history and social science courses and overall.

2. 36 credit hours in history and/or the social sciences.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Content Area Courses or equivalents	39-50 cr
A. Basic U.S. History Courses	9 cr
HIS 106 American Life I	
HIS 107 American Life II	
HIS 415 History and Government of New York State	
B. Basic World History Courses	6 cr
<i>Select two courses from the following:</i>	
HIS 115 Foundations of Western Civilization	
HIS 116 Europe Since 1500	
HIS 117 Twentieth Century Europe	
HIS 230 World Civilizations	
C. Other World History Courses	6 cr
Any two Asian, Middle Eastern, African, or Latin American history courses	
D. Geography Courses	6 cr
GEG 300 World Regional Geography	
Select from the following: GEG 102, 206, 309, 320, 360, 362, 364	
E. Political Science Course	3 cr
<i>Select one course from the following:</i>	
PSC 102 Introduction to American Government	
PSC 220 Development of American Constitutional Law	
PSC 320 U.S. Constitution/Civil Liberties	
F. Economics Course	3 cr
<i>Select one course from the following:</i>	
ECO 101 The Economic System	
ECO 201 Principles of Macroeconomics	
ECO 202 Principles of Microeconomics	
G. Cultural Diversity Course	3 cr
SSE 363 American Identity in Transition: Diversity and Pluralism in the United States	
H. Elective Courses¹	0-11 cr
History and/or social science courses	
Foreign Language Courses	6 cr
One year or equivalent	
Professional Education Courses	30 cr
SPF 303 Educational Psychology: Middle and Secondary Education	
EDU 416 Teaching Reading in Middle and Secondary Schools	
ENG 309 Teaching and Evaluating Writing	
PSY 357 Adolescent and Young Adult Development	
SSE 200 Introduction to Secondary Teaching	
SSE 303 Methods and Materials in Teaching Middle School Social Studies	
SSE 309 Methods and Materials in Teaching High School Social Studies	
SSE 370 Computer Technology in the Social Studies Classroom	
<i>Select one course from the following:</i>	
EXE 100 Nature and Needs of Individuals with Special Needs	
EXE 372 Foundations of Teaching Secondary Students with	

Disabilities

Select one course from the following:

SSE 402 Historical and Philosophical Foundations of Social Education

SSE 407 The Teaching of History

Student Teaching Courses	12 cr
SSE 409 Student Teaching of Social Studies in the Middle School (6)	
SSE 410 Student Teaching of Social Studies in Senior High School (6)	
Total Required Credit Hours	92 cr

¹Selected under advisement

All courses are 3 credit hours unless otherwise indicated.

SOCIAL STUDIES EDUCATION (7-12; 5-6 EXTENSION; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-NS

Major Code: SSX

HEGIS 2201.01

History and Social Studies Education Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

Andrew D. Nicholls, *Chair*

Classroom Building C205, (716) 878-5412

www.buffalostate.edu/history

The social studies education (7-12 with 5-6 extension) postbaccalaureate teacher certification program leads to eligibility for a New York State initial certificate to teach social studies in grades 5-12. This program is designed for students who have earned a baccalaureate degree in history, a social science, or another discipline with a 36-credit concentration in history and/or social science courses from an accredited college or university and who intend to complete the coursework required for New York State certification to teach social studies in secondary or middle schools.

The program supplies the background knowledge necessary for teachers to implement the New York State learning standards for social studies in grades 5-12. It also meets the standards set by national professional organizations, such as the National Council for the Social Studies and the National Council for the Accreditation of Teacher Education.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

To student teach, a student must have a minimum cumulative GPA of 2.75 and a minimum GPA of 2.75 in the program, as well as maintain grades of C or higher in SSE 303 and SSE 309.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75 (4.0 scale) in all history and social science courses and overall.
2. 36 credit hours in history and/or the social sciences.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Content Area Courses (or equivalents) 39-50 cr

- A. History of the Western Hemisphere Courses 15 cr**
- HIS 106 American Life I
 - HIS 107 American Life II
 - HIS 308 History of Canada
- or
- HIS 316 Modern Canada
 - HIS 314 Modern Latin America
 - HIS 415 History and Government of New York State

- B. History of the Eastern Hemisphere Courses 6 cr**
- Select two courses from the following:*
- HIS 115 Foundations of Western Civilization
 - HIS 116 Europe Since 1500
 - HIS 117 Twentieth Century Europe
 - HIS 230 World Civilizations

- C. Geography Courses (by advisement) 6 cr**
- GEG 300 World Regional Geography
- Select from the following: GEG 102, 206, 309, 320, 360, 362, 364

- D. Political Science Course 3 cr**
- Select one course from the following:*
- PSC 102 Introduction to American Government
 - PSC 220 Development of American Constitutional Law
 - PSC 320 U.S. Constitution/Civil Liberties

- E. Economics Course 3 cr**
- Select one course from the following:*
- ECO 101 The Economic System
 - ECO 201 Principles of Macroeconomics
 - ECO 202 Principles of Microeconomics

- F. Cultural Diversity Course 3 cr**
- SSE 363 American Identity in Transition: Diversity and Pluralism in the United States

- G. Elective Courses¹ 0-11 cr**
- History and/or social science courses

- Foreign Language Courses 6 cr**
- One year or equivalent

Professional Education Courses 30 cr

- SPF 303 Educational Psychology: Middle and Secondary Education
- EDU 416 Teaching Reading in Middle and Secondary Schools
- ENG 309 Teaching and Evaluating Writing
- PSY 357 Adolescent and Young Adult Development
- SSE 200 Introduction to Secondary Teaching
- SSE 303 Methods and Materials in Teaching Middle School Social Studies
- SSE 309 Methods and Materials in Teaching High School

- SSE 370 Social Studies
Computer Technology in the Social Studies Classroom

- Select one course from the following:*
- EXE 100 Nature and Needs of Individuals with Special Needs
 - EXE 372 Foundations of Teaching Secondary Students with Disabilities

- Select one course from the following:*
- SSE 402 Historical and Philosophical Foundations of Social Education
 - SSE 407 The Teaching of History

Student Teaching Courses 15 cr

- SSE 409 Student Teaching of Social Studies in the Middle School (6)
- SSE 410 Student Teaching of Social Studies in Senior High School (6)
- SSE 488 Internship: Middle Childhood and Adolescence Education

Total Required Credit Hours 95 cr

¹Selected under advisement
All courses are 3 credit hours unless otherwise indicated.

SPANISH EDUCATION (7-12; PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-AH
Major Code: SPS
HEGIS 1105.01

Modern and Classical Languages Department

National Council for Accreditation of Teacher Education (NCATE) Accredited
Appointment Pending, *Chair*
Mark K. Warford, *Program Coordinator*
Bishop Hall 122, (716) 878-5414
www.buffalostate.edu/languages

The Spanish education (7-12) postbaccalaureate teacher certification program leads to eligibility for a New York State initial certificate to teach Spanish in grades 7-12. This program is designed for students who have earned a baccalaureate degree in Spanish or a related field from an accredited college or university and intend to complete the coursework required for New York State certification to teach Spanish in secondary or middle schools.

The program provides the background necessary for teachers to implement the New York State learning standards for Languages Other Than English (LOTE) 7-12. It also meets the standards set by national professional organizations, such as the American Council of Teachers of Foreign Languages and the National Council for Accreditation of Teacher Education.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

It takes approximately three to four semesters to complete certification requirements at Buffalo State College.

Students are responsible for any additional certification requirements, including the Liberal Arts and Sciences Test (LAST), the Assessment of Teaching Skills written test for provisional/initial certification, and child abuse certification.

To student teach, a student must have achieved a minimum GPA of 2.75 in Spanish coursework and overall, and must have earned a minimum grade of C in FLE 405 and FLE 406. Also, the student must complete an ACTFL-Approved Oral Proficiency Interview (OPI) in order to demonstrate Advanced-Low Proficiency in Spanish. If Advanced-Low Proficiency is not achieved, an additional upper-level Spanish course, chosen in consultation with the student's adviser, must be successfully completed.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.75 (4.0 scale) and a major in Spanish language, literature, and culture (or a related discipline with a minimum of 36 credit hours in Spanish).*
2. A minimum GPA of 2.75 in Spanish coursework and overall.
3. Successful completion of two written essays (one in English, one in Spanish) administered by the department as part of the interview process.
4. A personal interview with the program coordinator, department chair, or other designated official.

*Applicants who do not meet these admission requirements may take courses at Buffalo State to become eligible to apply to the program.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Spanish Courses¹ 6 cr

Select two courses from the following:

SPA 303	Introduction to Spanish Literature
SPA 305	Spanish Phonetics
SPA 306	The Civilization of Spain
SPA 307	Survey of Spanish Literature
SPA 308	Survey of Spanish Literature
SPA 309	The Civilization of Latin America
SPA 310	Survey of Spanish American Literature
SPA 311	Survey of Spanish American Literature
SPA 405	Old Spanish
SPA 415	Advanced Grammar and Composition
SPA 416	Advanced Conversation
SPA 495	Special Project
SPA 496	Seminar I

Professional Education Courses 24 cr

EDF 303	Educational Psychology
EDF 403	Historical and Philosophical Foundations of Secondary Education
EDU 416	Teaching Reading in Secondary Schools
EXE 372	Foundations of Teaching Secondary Students with

	Disabilities
FLE 200	Field Experience in Foreign Language Education
FLE 316	Teaching Reading in a Foreign Language in Middle School
FLE 405	Methods and Materials for Teaching Foreign Languages in the Secondary Schools
FLE 406	Techniques for Teaching and Evaluating Foreign Languages in Middle and Secondary Schools

Student Teaching Courses 12 cr

FLE 407	Student Teaching of Foreign Languages in the Middle/Junior High School (6)
FLE 408	Student Teaching of Foreign Languages in the High School (6)

Total Required Credit Hours 42 cr

¹ Selected under advisement
All courses are 3 credit hours unless otherwise indicated.

SPECIAL EDUCATION- EARLY CHILDHOOD

Special Education:

Early Childhood

Childhood

Generalist 7-12

Teaching Bilingual Exceptional Individuals

Master of Science in Education Programs

Special Education: Early Childhood Program Code: MSED-ED

Major Code: EXC

Special Education: Childhood Program Code: MSED-ED

Major Code: XCE

Special Education: Students with Disabilities (SWD)

Generalist 7-12 Program Code: MSED-ED

Major Code: EXS

Teaching Bilingual Exceptional Individuals Program Code:

GRCT-

Major Code: BXE

HEGIS 0808

Exceptional Education Department

National Council for Accreditation of Teacher Accreditation (NCATE) Accredited

Kevin J. Miller, *Chair*

Ketchum Hall 204, (716) 878-3038

General Information (voice mail): (716) 878-3038

www.buffalostate.edu/exceptionaleducation

The special education programs lead to a master of science in education degree and eligibility for New York State certification in special education. The teaching bilingual exceptional individuals program leads to eligibility for a New York State Bilingual Education Extension. The early childhood and childhood special education graduate programs are designed for students with undergraduate majors in education or special education.

The Exceptional Education Department offers three specialty master of science in education degree programs in special education: early childhood, childhood, and generalist 7-12. Students who are not provisionally/initially certified in special education must complete 15-18 credit hours of preliminary coursework in addition to the program

area requirements. Students in the generalist 7-12 program or one of the 17 generalist 7-12 and 7-12 subject area extension programs may require additional New York State content core and/or specific subject area coursework. Required preliminary courses are listed under each program area below. All three programs require the completion of a research component: EXE 684 and EXE 690, which must be taken in sequential order at the end of the program. The Exceptional Education Department also offers a Bilingual Special Education Certificate Program. Successful completion of this program leads to recommendation for New York State certification extension in bilingual special education. Students are able to complete this certificate program concurrently with one of the special education masters of science in education programs offered by the department.

Advisement: Because of the variety of options available in the department, it is imperative that majors and premajors seek advisement as early as possible. Students should contact their assigned academic advisers. The student designs programs of study with his or her adviser according to the student's goals and background.

Practicum: Practicum assignments link theoretical coursework with the applied demands of a wide variety of internship settings. Practicum sites are available to meet the needs and interests of nearly all students and are selected by the program coordinator.

Certification: Students in the department who are certified in early childhood education, childhood education, or adolescent education must fulfill course and degree requirements for New York State certification in special education and/or teaching bilingual exceptional education.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 2.5 (4.0 scale). Admission is competitive; not all qualified applicants are admitted.
2. Certification in early childhood special education, childhood special education, or generalist 7-12 special education. Applicants with certification in early childhood education, childhood education, or adolescence education must meet additional special education certification requirements once enrolled. For the generalist 7-12 programs only, applicants without any teaching certifications will be considered. Applicants for the generalist 7-12 programs must meet additional special education certification as well as New York State content core and subject area requirements once enrolled.
3. Employment or other experience relevant to the graduate course of study.
4. A written statement describing the applicant's philosophy of education and relevant experiences in the field. This statement must adhere to standard written English.
5. Faculty review.
6. Completion of a special application (available from the department or download from www.buffalostate.edu/graduateschool/admissions).

7. The ability to speak English and Spanish, and an oral interview (for bilingual exceptional individuals certificate program applicants only).

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Successful completion of the undergraduate program in exceptional education at Buffalo State is not a guarantee of admission to a graduate program. A point system based on the above criteria is used to evaluate applicants. Applicants with the highest point totals are admitted to the program each admission period. Only students admitted to the major (as majors or premajors) may take courses other than EXE 500.

Premajor Status: Students may not apply for premajor status. They apply to the graduate program, and the department decides if they are accepted to the program as majors or premajors. Premajors may enroll, by advisement, in two EXE courses at the 500 level (e.g., EXE 500, EXE 501) only. Premajors may not register for courses identified as "majors only" during the preregistration period. Student teaching and other fieldwork experiences are closed to premajors. There is no waiting list for admission to the Exceptional Education Department. Premajors apply for admission as majors by submitting a change of major form to the Graduate School during or after the completion of two EXE courses. Premajors are not guaranteed admission to the program.

SPECIAL EDUCATION: EARLY CHILDHOOD PROGRAM (EXC)

This program prepares early interventionists and teachers to work with infants and young children with disabilities—or young children at risk for being identified with a disability—and their families. The program is cross-categorical; prospective teachers receive coursework related to working with students with physical, intellectual, sensory, communication, and/or behavioral disorders.

The role of the early interventionist or preschool teacher is to facilitate the child's development of social, motor, communication, self-help, cognitive, and behavioral skills. Interventionists are expected to design activities and environments to enhance the child's concept of self, sense of competence and control, and independence. Because a number of educational programs serving this population subscribe to an interdisciplinary approach, much of the assessment, planning, and implementation of programs is done in collaboration with other members of the professional team.

**Admission to EXE 684 is by special permission. An application is completed the semester prior to admission. See the department office for application deadlines.*

Preliminary Courses

15 cr

<i>Required for students without provisional/initial certification in special education</i>	
EXE 500	Individuals with Special Needs
EXE 501	Educational Assessment Techniques for Special Education
EXE 502	Contingency Management

EXE 504 Graduate Practicum in Special Education (6)

Required Courses **24 cr**

EXE 510 Strategies for Cognition and Emergent Literacy in Young Children with Disabilities
EXE 612 Managing the Behavior of Young Children with Disabilities
EXE 620 Advanced Curriculum for Individuals with Moderate and Severe Disabilities
EXE 628 Collaboration and Consultative Practices in Inclusive Settings
EXE 650 Assessment of Young Children with Disabilities
EXE 652 Intervention in Early Childhood Special Education
EXE 682 Instructional Field Experience in Special Education
EXE 684 Graduate Seminar in Exceptional Education

Elective Courses¹ **6 cr**

Select two courses from the following:

EXE 518 Individuals with Physical Disabilities
EXE 530 Parent and Family Involvement in Special Education Programs
EXE 534 Understanding Students with Behavior Problems in the Classroom
EXE 544 Models of Classroom Discipline for Students with Disabilities
EXE 631 Adapting Language Arts and Reading Instruction for Students with Mild Disabilities
EXE 632 Direct Instruction Intervention Models for Students with Special Needs
SLP 540 Childhood Language Disabilities

Master's Project or Master's Thesis **3-6 cr**

Select one option:

EXE 690 Master's Project
EXE 695 Master's Thesis (6)

Total Required Credit Hours **33-51 cr**

¹Selected under advisement

All courses are 3 credit hours unless otherwise indicated.

SPECIAL EDUCATION: CHILDHOOD PROGRAM (XCE)

This program prepares teachers for delivery of educational services in inclusive classrooms, resource rooms, self-contained classrooms, special schools, residential facilities, or consultant teachers in general education settings to help infuse special education practices into the general education class. The program focus is on the education of students who have a variety of regular and special instructional needs. Included are students in disability groups traditionally associated with intellectual and developmental disabilities, physical/neurological disabilities, and learning and behavioral difficulties.

The coursework is designed to prepare teachers with the knowledge and skills to make appropriate modifications to the curriculum for students with mild/moderate disabilities in general and special education settings. The goal of this program is to prepare special educators, working closely with general educators, to provide the best teaching strategies to promote student learning, as well as to design positive environments that foster learning for students both with and without disabilities.

Program Requirements

Preliminary Courses **18 cr**

Required for students without provisional/initial certification in special education

EXE 500 Individuals with Special Needs
EXE 501 Educational Assessment Techniques for Special Education
EXE 502 Contingency Management
EXE 503 Instructional Strategies (Foundations)
EXE 504 Graduate Practicum in Special Education (6)

Required Courses **27 cr**

EXE 520/620 Curriculum or Advanced Curriculum for Individuals with Moderate and Severe Disabilities
EXE 628 Consultation and Collaboration
EXE 631 Adapting Language Arts and Reading for Students with Mild Disabilities
EXE 632 Direct Instruction Intervention Models for Students with Special Needs
EXE 633 Adapting Content Area Instruction
EXE 634 Applied Behavior Analysis
EXE 636 Promoting Effective Social Interaction in the Schools
EXE 682 Instructional Field Experience in Special Education*
EXE 684 Graduate Seminar in Exceptional Education

*EXE 682 is for students in the Childhood Program who do not complete EXE 504

Elective Course* **3 cr**

Select one course from the following:

EXE 518 Individuals with Physical Disabilities
EXE 530 Parent and Family Involvement in Special Education Programs
EXE 534 Understanding Students with Behavior Problems in the Classroom
EXE 544 Models of Classroom Discipline for Students with Disabilities
EXE 627 Transition from School to Adult Community Life
EXE 644 Advanced Behavior Analysis for Challenging Behaviors
EXE 650 Assessment of Young Children with Disabilities
EXE 652 Intervention in Early Childhood Special Education

Master's Project or Master's Thesis **3-6 cr**

Select one option:

EXE 690 Master's Project
EXE 695 Master's Thesis (6)

Total Required Credit Hours **30-54 cr**

* Selected under advisement

All courses are 3 credit hours unless otherwise indicated.

SPECIAL EDUCATION: STUDENTS WITH DISABILITIES GENERALIST 7-12 (EXS) AND STUDENTS WITH DISABILITIES 7-12 SUBJECT AREA EXTENSIONS

The Students with Disabilities (SWD) Generalist 7-12 programs prepare teachers to work with students with mild disabilities at the secondary level. The programs are intended to develop highly qualified teachers who possess the knowledge and skills to develop and facilitate effective instruction and programs. Secondary special education teacher candidates are prepared to work collaboratively

with general education subject matter specialists, as well as with career education personnel. Graduates of this program become knowledgeable in subject matter content, as well as best practices for transition planning. They also acquire a solid base in the technology of teaching, with knowledge related to direct and interactive instruction (cooperative learning, peer tutoring, differentiated instruction, and responsive instructional strategies).

The programs recognize the unique needs of adolescents with learning problems. A major goal of this program is to prepare teachers to address secondary students' skill deficits, social adaptation problems, and vocational competence.

The SWD Generalist 7-12 program leads to a master of science in education degree and eligibility for New York State certification in SWD Generalist 7-12. The additional 17 SWD Generalist 7-12 and 7-12 subject extension programs lead to a master of science in education degree and eligibility for New York State certification in SWD Generalist 7-12 as well as 7-12 subject area extensions. The 7-12 subject area extensions to the SWD Generalist 7-12 program are: Earth Science, Biology, Chemistry, Physics, Social Studies, Mathematics, English Language Arts, Spanish, French, Italian, German, Greek, Hebrew, Japanese, Latin, Mandarin, and Urdu.

View or download list of Subject Area Extensions (PDF) <http://www.buffalostate.edu/graduateschool/documents/swsubjects.pdf>

Because of the variety of programs available and their requirements, it is imperative teacher candidates seek advisement as early as possible. Teacher candidates should contact their assigned academic advisers. The candidate designs programs of study with his or her adviser according to the candidate's goals and background. The process will require an analysis of candidate's transcripts. Transcript analysis will include a review of previous courses in accordance with part 80 of the Regulations and Requirements from the Office of Teaching Initiatives will be used to determine if this requirement was met. Recommendation will include a review of the teacher candidate's transcripts to ensure 24 credit hours in the content core requirement have been met. In addition, students pursuing one of the 17 subject area extensions must complete a minimum of 18 semester hours in the chosen subject area. Recommendation will be contingent on upon completion of this requirement. The Student with Disabilities Checklist will be used to document completion of this requirement.

View or download program requirement checklist (PDF) <http://www.buffalostate.edu/exceptionaleducation/documents/swdrequirements.pdf>

Students with Disabilities Generalist 7-12 Requirements

Content Core Requirements*

- Must have six semester hours in each subject area*
- Math (3)
- Math (3)
- ELA (3)
- ELA (3)

24 cr

- Social Studies (3)
- Social Studies (3)
- Science (3)
- Science (3)

*some or all content core requirements may be met through transcript analysis

Preliminary Courses

18 cr

Required for students without provisional/initial certification in special education

- EXE 500 Individuals with Special Needs
- EXE 501 Educational Assessment Techniques for Special Education
- EXE 502 Contingency Management
- EXE 503 Instructional Strategies (Foundations)
- EXE 504 Graduate Practicum in Special Education (6)

Required Courses

27 cr

- EXE 520 Curriculum for Individuals with Moderate and Severe Disabilities
- or
- EXE 620 Advanced Curriculum for Individuals with Moderate and Severe Disabilities
- EXE 627 Transition from School to Adult Community Life
- EXE 628 Consultation and Collaboration
- EXE 631 Adapting Language Arts and Reading Instruction
- or
- CTE 605 Vocational Guidance for Career Exploration
- EXE 632 Direct Instruction Intervention Models for Students with Special Needs
- EXE 633 Adapting Content Area Instruction
- EXE 634 Applied Behavior Analysis
- EXE 682 Instructional Field Experience in Special Education
- EXE 684 Graduate Seminar in Exceptional Education

Master's Project or Master's Thesis

3-6 cr

Select one option:

- EXE 690 Master's Project
- EXE 695 Master's Thesis (6)

Total Required Credit Hours

30-75 cr

All courses are 3 credit hours unless otherwise indicated.

The Students with Disabilities Generalist 7-12 and 7-12 Subject Area Extension Requirements (48-93 cr)

In addition to completing the Student with Disabilities Generalist 7-12 requirements, candidates in a subject area extension program must complete a minimum of 18 semester hours in the chosen subject area. Advisor approved courses from previous undergraduate and graduate studies may be used to fulfill some or all of a subject area's extension requirements. The 7-12 subject area extensions to the SWD Generalist 7-12 program are: Earth Science, Biology, Chemistry, Physics, Social Studies, Mathematics, English Language Arts, Spanish, French, Italian, German, Greek, Hebrew, Japanese, Latin, Mandarin, and Urdu.

TEACHING BILINGUAL EXCEPTIONAL INDIVIDUALS (BXE)

Students who complete the certificate program are eligible for a New York State Bilingual Education Extension. Job opportunities are available for a full range of services to individuals with disabilities. Graduates will be eligible for

placements in inclusion settings, resource rooms, self-contained classrooms, and residential services. State certification allows graduates to work with individuals with mild disabilities, from early childhood to adult, in both monolingual and bilingual (Spanish-English) settings.

All courses must be planned with an academic adviser and approved by the department chair.

Admission Requirements:

1. Current enrollment in one of the special education master's programs (i.e., early childhood, childhood, or generalist 7-12), or
2. Current enrollment in the speech-language pathology master's program, or
3. A master's degree in special education.

Bilingual Educational Extension Courses

Required Courses	18 credits
BXE 623	Policies and Practices of Bilingual Education and Bilingual Special Education
BXE 625	Curriculum I: Strategies for Culturally and Linguistically Diverse Exceptional Students
BXE 626	Assessment Techniques in Bilingual Special Education
BXE 627	Curriculum II: Applied Strategies in Bilingual Education
BXE 628	Bilingual Special Education Field Practicum

DOCTOR OF PHILOSOPHY DEGREE IN SPECIAL EDUCATION

The Buffalo State College Exceptional Education Department and the University at Buffalo Learning and Instruction Department have developed a doctor of philosophy degree in special education. Students interested in more information about this program should contact Sharon Raimondi, Ph.D., (716) 645-5042.

SPEECH-LANGUAGE PATHOLOGY (M.S.Ed.)

Master of Science in Education Program

Program Code: MSED-SP
 Major Code: SLP
 HEGIS 1220

Speech-Language Pathology Department

The Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association Accredited The National Council for Accreditation of Teacher Education (NCATE) Accredited
 Constance Dean Qualls, *Chair*/
 Ketchum Hall 208, (716) 878-5502
www.buffalostate.edu/speech

Programs must be planned under advisement and approved by the director of the graduate studies and the department chair. Students are expected to complete academic and clinical education requirements to qualify for the

Certificate of Clinical Competence (CCC) in speech-language pathology issued by the American Speech-Language-Hearing Association (ASHA) and New York State licensure in speech-language pathology. Additional coursework may be required for teacher certification. Students must complete a minimum of three semesters of supervised practica in the Speech-Language-Hearing Clinic prior to placement at off-campus practica. Only students in good standing are permitted to enroll in SLP 505 Graduate Practicum in an Educational Setting and SLP 611 Externship in Communication Disorders. Students must meet with their academic adviser before initial registration to plan a program that will ensure completion of ASHA certification, New York State licensure, and New York State teacher certification requirements.

The speech-language pathology program is accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology of the American Speech-Language-Hearing Association and is registered with the State Education Department for licensure in speech-language pathology and for the initial/professional teaching certificate (Teacher of the Speech and Hearing Handicapped).

Curriculum is currently under revision. Contact Department Chair for details.

Admission Requirements:

1. A bachelor's degree from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale).
2. A minimum of 25 credit hours of undergraduate coursework in speech-language pathology that includes courses related to the normal development of speech, language, and hearing processes; courses related to disordered speech, language, and hearing; and courses related to the speech and hearing sciences. For ASHA and NCATE certification, the following courses are also required. If they were not taken at the undergraduate level, they will be added to the graduate program:
 - 3 credits in a biological science
 - 3 credits in the physical sciences
 - 3 credits in math (can be MAT 311)
 - 3 credits in the social and behavioral sciences
 - SPF 202 Child Development and Education
 - SPF 302 Educational Psychology: Elementary Education
 - EXE 100 Nature and Needs of Individuals with Special Needs
3. Three letters of recommendation that attest to the applicant's potential as a graduate student. For students with an undergraduate major in speech-language pathology or communication sciences and disorders, two of the letters must come from faculty in the major. For students from other majors, two of the letters must come from faculty in the major.
4. Graduate Record Examination (GRE) scores. All three scores will be evaluated.
5. A written personal statement reflecting reasons for choosing this discipline.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Application Deadline: Applicants must apply by February 1 for summer or fall admission. No applications are accepted for spring admission.

Program Requirements

Required Courses¹		38 cr
SLP 501	Clinical Methods (2)	
SLP 511	Neural Processes of Communication	
SLP 516	Diagnostic Principles and Procedures (2)	
SLP 518	Extended Applications in Communication Sciences and Disorders (1)	
SLP 541	Language Disorders: Birth to Age 5	
SLP 580	Research Methods in Speech-Language Pathology (2)	
SLP 605	Contemporary Issues in Clinical Interactions: Families and Culture (2)	
SLP 606	Fluency Disorders and Cleft Palate	
SLP 607	Dysphagia Across the Life Span (2)	
SLP 608	Neuromotor Speech Disorders Across the Life Span (2)	
SLP 609	Disorders of Voice (2)	
SLP 610	Evaluation and Treatment of Phonological Disorders	
SLP 621	Augmentative and Alternative Communication (2)	
SLP 622	Language Disorders of School-Aged Individuals	
SLP 623	Acquired Language Disorders	
SLP 625	Advanced Topics and Issues in Communication Sciences and Disorders*	
Practicum¹		19 cr
SLP 505	Graduate Practicum in an Educational Setting (6)	
SLP 515	Clinical Practicum (7; 1-3 cr per semester)	
SLP 611	Externship in Communication Disorders (6)	
Master's Project or Master's Thesis¹		3-6 cr
<i>Select one option:</i>		
SLP 690	Master's Project	
SLP 695	Master's Thesis (3-6)	
Comprehensive Examination		0 cr
*Students who elect to take the comprehension examination must enroll in SLP 625.		
Total Required Credit Hours		57-60 cr
¹ Selected under advisement		
All courses are 3 credit hours unless otherwise indicated.		

TEACHING BILINGUAL EXCEPTIONAL INDIVIDUALS

See Special Education

TECHNOLOGY EDUCATION (M.S.Ed.)

Master of Science in Education Program

Program Code: MSED-SP
Major Code: TED
HEGIS 0839.01

Engineering Technology Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

Dr. Jim Mayrose, *Chair*

Technology Building 126, (716) 878-6018

www.buffalostate.edu/engineeringtechnology

This program develops and enhances technological and professional competencies in technology education and provides a basis for advanced study. Completion of the program leads to the master of science in education degree and satisfies the requirements for eligibility for professional New York State teaching certification.

Program variations must be approved by the student's academic adviser and the department chair. At least half the credit hours in the program must be in technology education.

Admission Requirements:

1. A bachelor's degree in industrial arts/technology education from an accredited college or university with a minimum cumulative GPA of 2.3 (4.0 scale), or a New York State initial certificate to teach industrial arts/technology.
2. Acceptance by the program coordinator.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

This program is currently under review. Please contact the Technology Department for further information.

Program Requirements

Required Courses		15-18 cr
CTE/BUS 602	Curriculum Development and Planning	
SPF 611	Evaluation in Education	
SPF/INT 689	Methods and Techniques of Educational Research	
TED 600	Foundations of Technology Education	
Elective Courses¹		12-15 cr
Master's Project or Master's Thesis		3-6 cr
<i>Select one option:</i>		
TED 690	Master's Project	
TED 695	Master's Thesis (6)	
Total Required Credit Hours		30 cr

¹ Selected under advisement

All courses are 3 credit hours unless otherwise indicated.

TECHNOLOGY EDUCATION (PTCP)

Postbaccalaureate Teacher Certification Program

Program Code: UG PBC-SP
Major Code: TED
HEGIS 0839.01

Engineering Technology Department

National Council for Accreditation of Teacher Education (NCATE) Accredited

Dr. Jim Mayrose, *Chair*

Technology Building 126, (716) 878-6018

www.buffalostate.edu/engineeringtechnology

The technology education postbaccalaureate teacher certification program leads to eligibility for a New York

State initial certificate to teach technology education in grades kindergarten–12. This program is designed for students who have earned a baccalaureate degree in a technology-related field from an accredited college or university and intend to complete coursework required for New York State certification to teach technology.

After successfully completing the teacher certification program and passing required New York State teacher certification exams, students are eligible to apply for New York State certification through the Teacher Certification Office, Caudell Hall 101. No degree or certificate is awarded by Buffalo State.

Financial Assistance: For financial aid purposes, students are considered fifth-year undergraduates, eligible for undergraduate loans.

Admission Requirements:

1. A bachelor’s degree from an accredited college or university.
2. Completion of 30 credit hours in technology coursework, including biotechnology, communication, construction, manufacturing, and transportation systems or their equivalents.

In addition, all applicants should review the Admission to a Graduate Program section in this catalog.

Program Requirements

Required Courses		21 cr
BME 301	Principles of Occupational Education	
BME 302	Curriculum and Evaluation in Occupational Education	
SPF 303	Educational Psychology	
EDU 416	Teaching Literacy in the Secondary School	
EXE 372	Teaching Adolescents with Disabilities	
TEC 360	Technology Education Methods and Evaluation	
TED 100	Introduction to Technology Education	
Professional Semesters		12 cr
TED 450	Professional Semester (6)	
TED 451	Professional Semester (6)	
Total Required Credit Hours		33 cr

All courses are 3 credit hours unless otherwise indicated.

GUIDE TO COURSE DESCRIPTIONS

Individual graduate-level courses are described in alphabetical order by discipline in this section of the catalog.

Course Scheduling

Whether or not a specific course will be scheduled for a given term is contingent on student enrollment, budget support, and adequate staffing. Check the graduate course schedule for updated course scheduling each semester. The descriptions in this catalog are current as of fall 2012.

Undergraduate Courses

This catalog does not list undergraduate courses numbered 101–499. These course descriptions can be found at www.buffalostate.edu. Undergraduate coursework does not fulfill the requirements of an advanced degree.

Here is a sample course listing:

CRS 680
DESIGNING AND DELIVERING CREATIVITY EDUCATION
3, 3/0

Prerequisites: CRS 559 and CRS 560.

Team-teaching experience in creative studies undergraduate courses under direct supervision of the faculty. With permission of instructor, under special circumstances, team teaching may be done in a school, in industry, or in a special creative problem-solving program.

Here's what it means:

CRS 680
This is a creative studies course, number 680.
DESIGNING AND DELIVERING CREATIVITY EDUCATION
Name of course
3, 3/0

This course earns three credits; it meets for three lecture hours and zero lab hours each week.

The remainder of the course listing describes the subject matter and any prerequisites and co-requisites.

Course Number System

500–599 Generally open to all graduate students
600–699 Generally limited to students within the program and others with specific preparation
700–799 Advanced courses requiring greater preparation

Course Prefix Key

ACM PROFESSIONAL APPLIED AND
COMPUTATIONAL MATHEMATICS
ADE ADULT EDUCATION
AED ART EDUCATION
ANT ANTHROPOLOGY

ATS ART THERAPY
BIO BIOLOGY
BME BUSINESS AND MARKETING EDUCATION
BUS BUSINESS
BXE BILINGUAL EXCEPTIONAL EDUCATION
CHE CHEMISTRY
CNS ART CONSERVATION
COM COMMUNICATION
CRJ CRIMINAL JUSTICE
CRS CREATIVE STUDIES
CTE CAREER AND TECHNICAL EDUCATION
DES DESIGN
ECO ECONOMICS
ECS ELEMENTARY EDUCATION
EDC EDUCATIONAL COMPUTING
EDL EDUCATIONAL LEADERSHIP
EDT EDUCATIONAL TECHNOLOGY
EDU ELEMENTARY EDUCATION
ENG ENGLISH
EXE EXCEPTIONAL EDUCATION
FAR FINE ARTS
FIN FINANCE
FLE FOREIGN LANGUAGE EDUCATION
FRE FRENCH
FTT FASHION TECHNOLOGY
GEG GEOGRAPHY
GES GEOSCIENCES
HEW HEALTH AND WELLNESS
HIS HISTORY
HPR COACHING AND PHYSICAL EDUCATION
INT INDUSTRIAL TECHNOLOGY
MAT MATHEMATICS
MCL MODERN AND CLASSICAL LANGUAGES
MED MATHEMATICS EDUCATION
MET MECHANICAL ENGINEERING TECHNOLOGY
MST MUSEUM STUDIES
MUS MUSIC
NFS NUTRITION AND FOOD SCIENCE
PAD PUBLIC ADMINISTRATION
PHI PHILOSOPHY
PHY PHYSICS
PLN PLANNING

PSC	POLITICAL SCIENCE
PSY	PSYCHOLOGY
SAF	SAFETY STUDIES
SCI	SCIENCE
SLP	SPEECH-LANGUAGE PATHOLOGY
SOC	SOCIOLOGY
SPF	SOCIAL AND PSYCHOLOGICAL FOUNDATIONS
SPA	SPANISH
SSE	SOCIAL STUDIES EDUCATION
SWK	SOCIAL WORK
TEC	TECHNOLOGY
TED	TECHNOLOGY EDUCATION
THA	THEATER

COURSE DESCRIPTIONS

ACM - APPLIED & COMPUTATIONAL MATHEMATICS

ACM 587
TOPICS COURSE
1-4, 1-4/0

In-depth examination of rapidly and significantly changing disciplinary issues, topics, or practices; offered occasionally.

ACM 610
CONTINUOUS FOUNDATIONS OF APPLIED MATHEMATICS
FROM A PROBLEM SOLVING PERSPECTIVE
1, 1/0

Prerequisite: Admission to program or instructor permission. Problem solving and applications of continuous mathematics, including real analysis, single and multivariable calculus, differential equations, optimization, and Fourier analysis. Emphasis on team building and group management through problem-solving activities.

ACM 611
DISCRETE FOUNDATIONS OF APPLIED MATHEMATICS FROM
A PROBLEM SOLVING PERSPECTIVE
1, 1/0

Prerequisite: Admission to program or instructor permission. Problem solving and applications of discrete mathematics, including combinatorics, graph theory, logic, linear algebra, number theory, and set theory. Emphasis on team building and group management through problem-solving activities.

ACM 612
COMPUTATIONAL FOUNDATIONS OF APPLIED
MATHEMATICS FROM A PROBLEM SOLVING PERSPECTIVE
1, 1/0

Prerequisite: Admission to program or instructor permission. Introduction to algorithm design to implement mathematical models, procedural, and functional programming, programming paradigms, higher-level languages; statistical and visualization software, typesetting software for science and mathematics.

ACM 620
OPTIMIZATION OF DISCRETE MODELS
1, 1/0

Prerequisite: Admission to the program or instructor permission. Mathematical analysis and solution of real-world problems that optimize linear objective functions subject to systems of linear inequalities; the two-phase revised simplex method; applications in diverse areas such as business management, industry, economics, finance, and game theory.

ACM 621
EMPIRICAL MODEL BUILDING
1, 1/0

Prerequisite: Admission to program or instructor permission. Exploratory data analysis, polynomial interpolation, curve fitting, least squares, cubic splines, minimax polynomial, Taylor and Chebyshev series, applications to fitting experimental data.

ACM 622
MODELING CHANGE WITH DYNAMICAL SYSTEMS
1, 1/0

Prerequisite: Admission to program or instructor permission. Difference equations, systems of differential equations, Euler and Runge-Kutta methods, error analyses, logistic models; applications to ecology, finance, conflicts, natural and social sciences.

ACM 630
NUMERICAL LINEAR ALGEBRA
1, 1/0

Prerequisite: Admission to program or instructor permission. Numerical algorithms for linear algebra problems, matrix operations, matrix decompositions, solving systems of linear equations, selected problems from applied settings.

ACM 631
EIGENVALUE PROBLEMS
1, 1/0

Prerequisite: Admission to program or instructor permission. Numerical algorithms for eigenvalue problems, matrix factorization, matrices, vectors, eigenvalues, eigenvectors, eigenspaces, eigenvalue algorithms, selected problems from applied settings.

ACM 632
NUMERICAL CALCULUS
1, 1/0

Prerequisite: Admission to program or instructor permission. Numerical methods and algorithms for finding roots of non-linear equations, numerical integrals, Fourier series and Laplace transform; selected problems from applied settings.

ACM 640
LINEAR REGRESSION AND CORRELATION
1, 1/0

Prerequisite: Admission to program or instructor permission. Simple linear regression and correlation, multiple linear regression, multicollinearity, multiple and partial correlations, confounding and interaction, sequential methods of model selection.

ACM 641
DESIGN AND ANALYSIS OF EXPERIMENTS
1, 1/0

Prerequisite: Admission to program or instructor permission. Design of experiments (one, two and three factors), multiple comparisons, randomized complete block designs, Latin square design.

ACM 642
NONPARAMETRIC STATISTICS
1, 1/0

Prerequisite: Admission to program or instructor permission. Introduction to nonparametric tests such as sign-test, signed rank test, rank sum test, two-way analysis of variance by ranks, tests of randomness, rank correlation coefficient.

ACM 650
RANDOM WALKS AND BROWNIAN MOTION
1, 1/0

Prerequisite: Admission to program or instructor permission. Symmetric random walks, ballot theorem, returns to origin and arcsine laws, gambler's ruin, Brownian motion, conditional distributions, hitting times and maxima.

ACM 651
MARKOV CHAINS

1, 1/0

Prerequisite: Admission to program or instructor permission. Transition matrices, classification of states, limiting probabilities, applications.

ACM 652
CONTINUOUS-TIME STOCHASTIC PROCESSES

1, 1/0

Prerequisite: Admission to program or instructor permission. Exponential distribution, Poisson, Yule, pure birth, birth and death processes, applications.

ACM 653
MARKOV CHAIN MODELS IN CREDIT RISK MANAGEMENT

1, 1/0

Prerequisites: Graduate standing. Practical introduction to mortgage lending and the practice of measuring and managing consumer credit risk. Introduction to Markov chain theory and transition roll rate modeling through extensive case study of the collapse of the U.S. mortgage industry in 2007 - 2008 and the origins of the Great Recession. Risk reporting and segmenting; probability of default; loss given default; house price dynamics; loss forecasting with consideration of micro and macro-factors. Use of statistical software package SAS to analyze loan-level datasets. Suggested preparation: previous coursework or experience in calculus, linear algebra, linear regression, and introduction to programming.

ACM 660
LOGISTIC REGRESSION

1, 1/0

Prerequisite: ACM 640 or instructor permission. Comparison of linear and logistic regression, multiple logistic regression, regression diagnostics, indicator variables, multicollinearity, confounding and interaction, model selection, maximum likelihood techniques, polychotomous logistic regression.

ACM 661
SURVIVAL ANALYSIS

1, 1/0

Prerequisite: ACM 640 or instructor permission. Survival and hazard functions, life tables, Kaplan-Meier survival analysis, Cox regression proportional hazards model and Cox regression with time-dependent variables; comparison with logistic regression approaches.

ACM 662
TIME SERIES ANALYSIS AND FORECASTING

1, 1/0

Prerequisite: ACM 640 or instructor permission. Time and frequency domain techniques including autocorrelation, spectral analysis, autoregressive moving average and integrated moving average models, Box-Jenkins methodology, fitting, forecasting and seasonal adjustments.

ACM 690
MASTER'S PROJECT

1-3, 1-3/0

Prerequisite: Written approval of faculty adviser and department chair. Research or investigation of a particular problem, planned and carried out under the guidance of a qualified member of the graduate faculty, submitted in acceptable form according to directions given by the Mathematics Department.

ACM 721
THESIS/PROJECT CONTINUATION

0, 0/0

ACM 722
THESIS/PROJECT EXTENDED

0, 0/0

ADE - ADULT EDUCATION

ADE 500
INTRODUCTION TO ADULT EDUCATION

3, 3/0

Prerequisites: Graduate Standing. An exploration of the field of adult education as it exists today in a variety of formal and non-formal settings. The core elements of the discipline will be examined from past, present,

and future trend perspectives. Topics covered include: evolution of the field, major providers and programs, teaching methods and planning approached, mini-teaching delivery, and review of the literature.

ADE 580
PARENTING/SEXUALITY EDUCATION PRACTICES IN HEALTH

3, 3/0

Prerequisite: Graduate Status. Undergraduate coursework in health or human sexuality. Parenting/sexuality curricula and the utilization of technology in teaching health education; theories and practices in sexuality education in American school systems; appropriate course content specific to different grade levels and cultural settings. Equivalent course: HEW580

ADE 582
INTRODUCTION TO ADULT LITERACY EDUCATION IN THE

U.S.

3, 3/0

Prerequisites: Graduate status. Examination of the adult literacy education system in the United States from historical and modern perspectives; exploration of research, theory, and professional wisdom of the field; reflection on, discussion of, and critique of the current policy, instructional, philosophical, and social issues that affect the adult literacy education field.

ADE 584
LITERACY SKILLS AND THE ADULT LEARNER

3, 3/0

Prerequisite: Graduate status. Theories, practice, curricula, and content of instruction appropriate for adult learners; the theories of Paulo Freire, Ira Shor, and Henry Giroux; collaboratively participate in the design and implementation of an action research project focusing on adult literacy. Equivalent course: EDU584

ADE 590
INDEPENDENT STUDY

1-3, 3/0

Individualized study. Instructor permission required.

ADE 594
SELECTED TOPICS

3, 3/0

ADE 600
ADULTHOOD AND DEVELOPMENT

3, 3/0

Prerequisite: Graduate status. Study of adulthood and development during the adult years; consideration of the physiological and psychological development of the individual from young adulthood through old age-changing roles, conflicts, adjustments, dilemmas, aspirations, ethnicity, potentials, responsibilities, rights, and freedoms-as indicated in theory and research.

ADE 602
MANAGEMENT: ADMINISTRATIVE BEHAVIOR

3, 0/3

Prerequisite: Graduate status. Basic administrative theories; managerial behavior as expressed through conceptual, human, and technical skills. Observation of field managers.

ADE 603
HUMAN RESOURCE MANAGEMENT

3, 3/0

Prerequisite: Graduate Status: Personnel-related functions and the utilization of resources to support these functions within organizations: design of in-service training programs; supervisory skills for enhancing motivation and productivity; employee benefit packages; grievance and labor relations plans; proposals to obtain funding and training. Equivalent courses: BUS603, EDF603, SWK603

ADE 605
HISTORICAL, SOCIAL, AND PHILOSOPHICAL FOUNDATIONS

OF ADULT EDUCATION

3, 3/0

Prerequisite: Graduate status. Historical antecedents, social movement characteristics, and philosophical foundations of adult education, with perspectives on why and where the adult learner and others fit into this evolving field of professional practice.

ADE 608
3, 0/0

Prerequisite: Graduate status. Designing instruction to achieve specific learning outcomes; systematic models that facilitate planning, developing, revising, and evaluating instruction; planning instruction that incorporates educational technology.

Equivalent course: ADE665

ADE 610
METHODS OF ADULT EDUCATION
3, 3/0

Prerequisite: ADE 608 and Graduate status. Principles, practices, and evaluation of adult learning across the full spectrum of settings in which adult education is conducted.

Equivalent courses: EAD610, ELF610

ADE 615
ISSUES AND PERSPECTIVES IN ADULT EDUCATION
3, 3/0

Prerequisite: Graduate status. Nature of adult education and the various programs and situations in which it occurs; key issues in the field and various approaches to adult learning theory; nature of participation; inclusion of ethnic minorities, women, individuals with disabilities, and distance learners; adult learning environments nationally and internationally; emerging trends.

ADE 620
APPLICATION OF INSTRUCTIONAL TECHNOLOGY TO ADULT EDUCATION
3, 3/0

Prerequisite: Graduate status. Methods of teaching adult learners using traditional and contemporary modes; use of technology-teleconferencing, distance education, and online instruction in the present delivery systems for teaching and learning.

ADE 624
INTERNSHIP
3, 3/0

Prerequisite: Graduate status. Supervised internship experience in an adult education setting.

Equivalent course: CSP624

ADE 625
DESIGNING AND EVALUATING PROGRAMS FOR ADULT LEARNERS
3, 3/0

Prerequisite: Graduate status. Planning, designing, and assessing training outcomes for adult learners; methods and materials in program planning in adult education; review of types of programs, community services, and developing funded proposals.

ADE 634
WORKPLACE LITERACY
3, 3/0

Prerequisite: Graduate status. Designing, teaching in, and assessing workplace-literacy and job-readiness programs. Methods of developing customized curricula and teaching literacy and ESL via a sociocultural literacy framework. Analysis and critique of case studies that focus on (1) federal, state, and local workforce policies; (2) educating, training, and re-skilling an underskilled workforce in a global economy; and (3) issues of diversity in the workplace.

ADE 640
HUMAN RESOURCE DEVELOPMENT
3, 3/0

Prerequisite: Graduate status. Preparation to conduct educational and training programs for workers and volunteers to improve organizational effectiveness. Key competencies and principal roles of human resource development professionals: human performance analysis; training needs assessment; organizational development; career development; program and instructional design; learning materials design; program evaluation; ethical and human diversity issues in training and development.

ADE 645
PROGRAM DESIGN FOR ORGANIZATIONAL EMPLOYEES
3, 3/0

Prerequisites: Graduate Status: Admission to the Adult Education Master's Degree Program or Multidisciplinary Master's Degree Program or permission of instructor. Instructional design and assessment

coursework or experience. A practical approach in a simulated environment, integrating adult learning and instructional design theories for the analysis, design and development of employee/volunteer programs for targeted organizational learners; use of authentic evaluation and assessment concepts to design programs and workforce learner assessments.

ADE 655
DIVERSITY ISSUES IN ADULT EDUCATION AND TRAINING
3, 3/0

Prerequisite: Graduate status. Teaching and learning implications of diversity for adult educational achievement and career opportunities. Implications for course content and classroom management styles when adult educators are sensitive to race, ethnicity, gender, sexual orientation, class, and physical ability. Methods for structuring course content, designing curricula, and educating learners by promoting and embracing a diverse population of colleagues, learners, workers, and clients.

Equivalent course: CTE655

ADE 660
GRANT WRITING FOR EDUCATION AND TRAINING
3, 3/0

Prerequisites: Graduate Standing. This course provides an in-depth examination of the strategies for writing a successful grant funding application in the field of education. Students participate in all aspects of the grant development process, including identifying agency strengths, researching potential funding sources and opportunities, writing application materials, developing budgets, and creating evaluation plans.

ADE 688
LEADERSHIP IN ORGANIZATIONS
3, 3/0

Theories of leadership; organizational contexts and culture for leadership; the role of the leader in organizations; leadership competencies for organizational effectiveness; the leader's role in mentoring and coaching for effective performance; the leader's role in achievement of organizational mission and goals.

Equivalent courses: BUS688, SPF688

ADE 689
METHODS AND TECHNIQUES OF EDUCATIONAL RESEARCH
3, 3/0

Background of educational research; selection and development of research problems; sources of information and data; methods, tools, and techniques; collection, treatment, application, and interpretation of research data; organizing and writing a research report.

Equivalent courses: BME601, BUS601, SPF689

ADE 690
MASTER'S PROJECT
3, 3/0

Prerequisite: Graduate status. A study undertaken by one or more individuals on a problem of special interest, submitted in acceptable form according to directions from the Educational Foundations Department.

ADE 715
MANAGEMENT PRACTICES AND TECHNIQUES
3, 3/0

Prerequisites: Graduate Status. PSY101 Major management theories and factors affecting organizational systems; managing conflict and negotiating agreements; effective interpersonal skills for managers; defining problems and generating creative alternatives; types and sources of information needed by managers; relation of leadership style to staff productivity and development; relating effectively to upper-level management.

Equivalent courses: SPF715

ADE 721
THESIS/PROJECT CONTINUATION
0, 0/0

ADE 722
THESIS/PROJECT EXTENDED
0, 0/0

AED - ART EDUCATION

AED 500 ART IN THE ELEMENTARY SCHOOL 3, 3/0

Use of art materials, processes, and procedures in the elementary school; individual experience in various media appropriate at different grade levels; consideration of the role of the classroom teacher in self-contained, supervised, or art specialist programs; related problems of the school curriculum.

AED 505 FOUNDATIONS IN MUSEUM EDUCATION STUDIES 3, 3/0

History of museum education; practical experience creating interpretive programs and exhibitions using museum collections, archival resources, and publications; overview of museum operations; current and controversial issues and future trends; definition, history, theory, and responsibilities of museums and museum education; opportunity to work firsthand with curators and museum educators to create appropriate and accessible programs for diverse audiences.

AED 506 COLLOQUIUM IN THE ARTS 3, 3/0

Common and related concerns, experiences, and activities in the various arts, including visual and performing arts, and other acts of individual and/or group expression; seminar reports, discussions, presentations; planning of integrated arts activities and investigation for potential implementation in the field; individual or group project as practical.

AED 510 ART MATERIALS WORKSHOP 3, 2/2

Studio experiences with visual arts media, processes, and techniques for art and classroom learning activities; individual and/or group investigations of experiences and adaptations to classroom application. Extra class studio hours as needed.

AED 518 ART EDUCATION AND MULTICULTURALISM 3, 3/0

Cultural competence in art education; attitudes, approaches, and materials required for teaching art to today's diverse school populations; understanding and appreciating the arts and life ways of various peoples and their cultures; curriculum development; interaction with various community resources.

AED 520 ART AND THERAPY 3, 3/0

Art experiences/products of children and adults in therapeutic settings; slide lectures, demonstrations, films, videotapes, articles, books, observations, and group and field experiences.

AED 527 FIELD STUDIES 1-3, 0/0

Prerequisites: Art education program major; consent of department chair. Supervised field experiences in the major discipline.

AED 565 SEMINAR IN FEMINIST ART AND CRITICISM FOR TEACHING 3, 3/0

A forum for development and critique of teaching methods, visuals, and instructional materials for using feminist art and criticism in art education; practical direction in applying relevant contemporary art, written criticism, and oral interpretation in classroom settings.

AED 588 TOPICS COURSE 3, 3/0

AED 591 RESEARCH PROJECT 3, 3/0

Research or investigation of a particular problem in the discipline, planned and carried out by the student, and supervised by the instructor.

AED 601 ADMINISTRATION AND SUPERVISION IN ART EDUCATION 3, 3/0

Role of the supervisor of art in relation to the community, the school administration, the classroom teacher, and the special art teacher; functions of the art consultant and the special art teacher in elementary schools; preparing budgets, procuring equipment, and ordering supplies. Extra class reports and discussions. Classification: Elective for art education graduate program students.

AED 603 INTERNSHIP (ART EDUCATION OR ART THERAPY) 1-3, 3/0

Prerequisite: Consent of department chair. Supervised internship in an educational setting consistent with the student's program of study.

AED 604 FUNDAMENTALS OF EDUCATIONAL PROGRAMMING FOR MUSEUMS 3, 3/0

Theories and practices of planning and implementing museum education programs for diverse audiences; techniques and methods for creating innovative programs within a museum setting.

AED 606 VISUAL ART CURRICULUM DESIGN 3, 3/0

Prerequisites: Initial certification in education. Analyzing, evaluating, and designing contemporary art teaching materials, content, and strategies. Focus on teacher-student dialogue; learning behavior, and artistic educational practices.

AED 609 STUDIO METHODS 3, 2/2

Technical studio experience as appropriate to the teaching artist: processes, procedures, skills, knowledge, and attitudes; integration of personal and classroom investigations. May be repeated up to three times.

AED 610 CONTEMPORARY ART THEORY 3, 3/0

Prerequisite: Degree in a visual arts-related field. Theoretical perspectives in art criticism and aesthetics that contribute to contemporary art education practices.

AED 675 POSTSECONDARY TEACHING PRACTICUM 3, 2/0

Prerequisites: Graduate status, AED 610 or CTE 536, and instructor permission. Promotes expertise in teaching in human resource development adult education, workforce training, community colleges, and GED program settings. Extended teaching assignments with coach/mentor assistance. Seminar-type discussions reflecting on learning and development of learners as they taught, principles of teaching, their teaching behaviors, strategies promoting continuing growth as teachers. Analyze issues in teaching: diversity, technology, exceptionality, promoting social justice. Equivalent course: CTE675

AED 680 HISTORY & PHILOSOPHY OF ART EDUCATION 3, 3/0

Critical examination of the historical roots and ideological underpinnings of art education within public/private schooling from elementary to higher education in the U.S., with special attention to the relations among schools and society with respect to social equality and a democratic way of life.

AED 688 SEMINAR IN ART EDUCATION 3, 3/0

Contemporary problems; review of curriculum developments, methodology, innovative developments, and interdisciplinary concepts; individualized studies under faculty advisement. Equivalent course: AED600

AED 689
RESEARCH
3, 3/0

Prerequisite: AED 688. Individual and group study of methods of research in the discipline; training in research methods, interpretation, evaluation, and adaptation of research findings for application to professional needs.

Equivalent course: AED602

AED 690
MASTER'S PROJECT
3, 3/0

Prerequisite: AED 689. A study undertaken by one or more individuals on a problem of professional significance, to demonstrate an area of mastery in the field.

AED 695
MASTER'S THESIS
1-6, 6/0

Prerequisite: AED 689. Individual investigation of an original problem representing a significant contribution to the literature of the field. May be repeated.

AED 721
THESIS/PROJECT CONTINUATION
0, 0/0

AED 722
THESIS/PROJECT EXTENDED
0, 0/0

ANT - ANTHROPOLOGY

ANT 587
TOPICS COURSE
3, 3/0

In-depth examination of rapidly and significantly changing disciplinary issues, topics, or practices; offered occasionally.

ANT 721
THESIS/PROJECT CONTINUATION
0, 0/0

ANT 722
THESIS/PROJECT EXTENDED
0, 0/0

ATS - ART THERAPY STUDIES

ATS 721
THESIS/PROJECT CONTINUATION
0, 0/0

ATS 722
THESIS/PROJECT EXTENDED
0, 0/0

BIO - BIOLOGY

BIO 587
TOPICS IN BIOLOGY
1-4, 1-4/0

In-depth examination of rapidly and significantly changing disciplinary issues, topics, or practices; offered occasionally.

BIO 588
TOPICS COURSE
3, 3/0

BIO 590
INDEPENDENT STUDY
1-6, 0/0

Independent investigation into a specific area of biology; topic selected by the student in consultation with a faculty member

BIO 601
FOUNDATIONS OF CELL AND MOLECULAR BIOLOGY
3, 3/0

Prerequisites: Undergraduate courses in cell biology and genetics or instructor permission. Fundamental paradigms in cell and molecular biology as illustrated by current research; mechanisms by which genes control morphogenesis of plants and animals; evolution of the eukaryotic genome; mechanisms by which the transcription of eukaryotic genes is regulated; regulation of the cell-division cycle in eukaryotic cells. Emphasizes current literature, as well as writing and oral expression about the literature readings.

BIO 602
FOUNDATIONS OF ENVIRONMENTAL PHYSIOLOGY
3, 3/0

Prerequisites: Undergraduate courses in botany and zoology or instructor permission. Evolution of specialized features in plants and animals that allow them to maintain a stable internal environment while being exposed to a variety of external environmental conditions: adaptations of organisms for environments low in water or oxygen; problems associated with ionic and water regulation in freshwater and marine organisms; fundamental physiological principles that apply to both plants and animals.

BIO 603
FOUNDATIONS OF ECOLOGY AND EVOLUTION
3, 3/0

Prerequisites: Undergraduate courses in ecology and evolution or instructor permission. Current theories and paradigms of modern ecology and evolution; population and community interactions of organisms; coevolution; ecological and evolutionary genetics; micro- and macroevolution.

BIO 608
MOLECULAR GENETICS
3, 3/0

Prerequisite: One course in genetics. Molecular basis of the structure, replication, and genetic function of DNA; mutation, recombination, and the nature of genes; the genetic code, messenger and transfer RNA, and protein biosynthesis; molecular evolution of proteins.

BIO 612
TOPICS IN ECOLOGY
3, 3/0

Prerequisites: One semester each of ecology and biometrics or equivalent. Lecture and discussion on a specific topic in ecology, such as population ecology, microbial ecology, plant ecology, ecology of the Great Lakes, or advanced limnology. Topics vary with each session. May be taken more than once.

BIO 616
TOPICS IN ANIMAL PHYSIOLOGY
3, 3/0

Prerequisites: General physics, organic chemistry, and one year of physiology. Lecture and discussion on special topics in animal physiology, such as immunology, advanced animal physiology, and animal responses to stress. Topics vary with each session. May be taken more than once.

BIO 617
RESEARCH SEMINAR
1, 1/0

Presentations and discussions of current research projects by graduate students in biology. Each participant presents a seminar. Required for all candidates for the M.A. degree in biology.

BIO 625
ICHTHYOLOGY
3, 3/3

Prerequisite: One semester of ecology or permission of instructor. Advanced study of the biology of fishes, including anatomy, physiology, systematics, evaluation, ecology, and diversity.

BIO 626
TOPICS IN BOTANY
3, 3/0

Prerequisites: 9 credit hours of botany-oriented courses. Lecture and discussion on a specific topic in botany, such as biosystematics,

dendrology, wetland plants, plant pathology, or plant response to stress. Topics vary with each session. May be taken more than once.

BIO 627
TOPICS IN ZOOLOGY
3, 3/0

Prerequisites: 9 credit hours of zoology-oriented courses. Lecture and discussion on a specific topic in zoology, such as invertebrate zoology, entomology, fisheries biology, or functional vertebrate morphology. Topics vary with each session. May be taken more than once.

BIO 629
FISHERIES MANAGEMENT
3, 3/3

Prerequisite: One semester of ecology or instructor permission. Advanced study of the ecology and management of fish populations emphasizing inland fisheries in North America. Topics include management philosophies, fisheries statistics and modeling, habitat protection and manipulation, introduced and endangered species, stocking, and Great Lakes fisheries.

BIO 630
STREAM ECOLOGY
3, 3/3

Prerequisite: One semester each of ecology and statistics or instructor permission. Biological, chemical, geomorphic, and hydrologic features affecting the ecology of flowing water systems. Emphasis on freshwater invertebrate life histories, adaptations, and community structure in shallow streams.

BIO 631
ENVIRONMENTAL TOXICOLOGY
3, 3/0

Fundamental principles of environmental toxicology, including major environmental pollutants, their sources, toxic effects, mechanism of action, and factors that influence the toxicity of a chemical. Processes that govern the fate of a chemical in biological systems.
Equivalent course: CHE631

BIO 635
GREAT LAKES ECOLOGY
3, 3/0

Prerequisite: One semester of ecology or instructor permission. Study of the North American Great Lakes: physical and chemical features, biological structure, and ecological interactions. Focus on environmental issues, including water quality and the effect of introduced species.

BIO 670
BIOLOGICAL DATA ANALYSIS
3, 3/0

Prerequisite: One course in statistics. Experimental design and statistical analysis of biological data; applications of computers to biological investigations. Designed for students in the initial stages of planning their research.

BIO 672
FORENSIC MOLECULAR BIOLOGY
4, 3/3

Prerequisites: BIO 303 or BIO 350; FOR 612 or CHE 312; CHE 670 or CHE 470 or BIO 305; or equivalents. Applications of biology, biochemistry, and genetics to forensic science with an in-depth look at the evidential information that can be obtained from blood, semen, saliva, and hair. Details of DNA profiling, including DNA extraction, DNA quantification, PCR amplification, STR analysis and interpretation, and mtDNA sequencing. Protein polymorphisms and immunological tests. Laboratory component providing hands-on experience with techniques commonly used in a forensic biology laboratory.
Equivalent course: CHE672

BIO 690
MASTER'S PROJECT
1-3, 0/0

Prerequisite: Approval of proposal by the student's project committee; open to M.S. in education candidates. Investigation of a special-interest problem, planned and executed with consultation and advisement from the instructor and the student's project committee.

BIO 695
RESEARCH THESIS IN BIOLOGY
1-6, 0/0

Prerequisite: Approval of proposal by the student's thesis committee; open to M.A. or M.S. in education candidates. Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School.

BIO 721
THESIS/PROJECT CONTINUATION
0, 0/0

BIO 722
THESIS/PROJECT EXTENDED
0, 0/0

BME - BUSINESS AND MARKETING EDUCATION

BME 600
PRINCIPLES OF BUSINESS AND MARKETING EDUCATION
3, 3/0

Prerequisite: Teacher certification in an education discipline. Historical and philosophical developments in business and marketing (distributive) education.
Equivalent course: BUS600

BME 601
RESEARCH SEMINAR
3, 3/0

Prerequisite: Graduate status. Current research in occupational/vocational/business education; methods of research; locating appropriate information; development of a research proposal. Required for all BUS, CTE, DED, TED students.
Equivalent courses: ADE689, BUS601, SPF689

BME 602
CURRICULUM DEVELOPMENT AND PLANNING IN BUSINESS AND MARKETING EDUCATION
3, 3/0

Prerequisite: Teacher certification in an education discipline. Historical developments and changing concepts of curriculum; principles of curricula development; components of the curriculum-development process; dimensions of curriculum design systems; purposes and problems of curriculum evaluation. Required for all, BUS, CTE, and TED students.
Equivalent course: BUS602

BME 604
IMPROVING INSTRUCTION IN BUSINESS AND MARKETING
3, 3/0

Prerequisite: Teacher certification in an education discipline. Development of instructional techniques and resources; current best practices in educational settings; application of curriculum enhancement through effective pedagogy and program development.
Equivalent course: BUS604

BME 605
EVALUATION IN BUSINESS AND MARKETING EDUCATION
3, 3/0

Prerequisite: Teacher certification in an education discipline. General principles of evaluation and measurement; construction and use of objective tests, informal devices, and techniques of evaluation applicable to occupational education; selection and use of observation, rating scales, anecdotal records, individual and group projects; interpreting, recording, and using the results of evaluation data for the improvement of instruction. Required for all BUS, CTE, and TED students.
Equivalent courses: BUS605, EDF611

BME 690
MASTER'S PROJECT
3, 3/0

BME 721
THESIS/PROJECT CONTINUATION
0, 0/0

BME 722
THESIS/PROJECT EXTENDED
0, 0/0

BUS - BUSINESS

BUS 500
MARKETING OF SERVICES
3, 3/0

Prerequisite: BME 600 Introduction to Marketing or equivalent.
Applications of marketing principles in the service sector; service systems and the principles and practices involved in the marketing of services; past, current, and emerging trends in services marketing; development of marketing programs in the service sector.

BUS 512
INTRODUCTION TO USING ACCOUNTING INFORMATION FOR DECISION-MAKING
3, 3/0

Prerequisite: Graduate standing. Overview of fundamental financial and managerial accounting statements or reports, including their structure, contents, underlying concepts, analysis, interpretation, and use for economic decision making.

BUS 519
COMMUNICATION FOR LEADERS AND MANAGERS
3, 0/0

Theories of effective communication; face-to-face communication; group problem solving; public speaking; power and leadership in organizational settings; persuasive messages and campaigns that public relations practitioners design for a variety of publics. Designed for graduate students interested in improving their workplace communication skills.
Equivalent courses: COM519

BUS 534
SELECTED TOPICS IN BUSINESS STUDIES
3, 3/0

Review and synthesis of current content in business, product knowledge, and distributive education studies.

BUS 535
SMALL-BUSINESS OPERATIONS
3, 3/0

Role of small business in the social, economic, and political environment of the United States; forms of small-business ownerships; management concepts; legal and government controls; marketing principles.

BUS 536
THE AMERICAN ENTERPRISE SYSTEM
3, 3/0

Problems and issues relating to the free enterprise system functioning within a modern industrial society; analysis of the interrelationships of basic business concepts with the decision-making processes of corporate management; historical trends and their futuristic implications.
Equivalent course: HIS536

BUS 545
BASIC ACCOUNTING FOR BUSINESS AND NONBUSINESS ORGANIZATIONS
3, 3/0

Financial, managerial, and not-for-profit accounting; accounting concepts, principles, and procedures.

BUS 603
HUMAN RESOURCE MANAGEMENT
3, 3/0

Personnel-related functions and the utilization of resources to support these functions within organizations: design of in-service training programs; supervisory skills for enhancing motivation and productivity; employee benefit packages; grievance and labor relations plans; proposals to obtain funding and training.
Equivalent courses: EDF603, SWK603

BUS 640
HUMAN RESOURCE DEVELOPMENT
3, 3/0

Prerequisite: Graduate status. Preparation to conduct educational and training programs for workers and volunteers to improve organizational

effectiveness; key competencies and principal roles of human resource development professionals; human performance analysis; training needs assessment; organizational development; career development; program and instructional design; learning materials design; program evaluation; ethical and human diversity issues in training and development.

BUS 688
LEADERSHIP IN ORGANIZATIONS
3, 3/0

Prerequisite: EDF/BUS/PSY 715. Prerequisite: BUS/EDF/PSY 715. Theories of leadership; organizational contexts and culture for leadership; the role of the leader in organizations; leadership competencies for organizational effectiveness; the leader's role in mentoring and coaching for effective performance; the leader's role in achievement of organizational mission and goals.
Equivalent courses: ADE688, SPF688

BUS 695
MASTER'S THESIS
3, 0/0

Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School.

BUS 715
MANAGEMENT PRACTICES AND TECHNIQUES
3, 3/0

Prerequisites: PSY 101 and instructor permission. Major management theories and factors affecting organizational systems; managing conflict and negotiating agreements; effective interpersonal skills for managers; defining problems and generating creative alternatives; types and sources of information needed by managers; relation of leadership style to staff productivity and development; relating effectively to upper-level management.

BUS 721
THESIS/PROJECT CONTINUATION
0, 0/0

BUS 722
THESIS/PROJECT EXTENDED
0, 0/0

BXE - BILINGUAL EXCEPTIONAL EDUCATION

BXE 623
POLICIES AND PRACTICES OF BILINGUAL SPECIAL EDUCATION
3, 3/0

Historical, philosophical, and legal foundations for bilingual education and bilingual special education; pedagogical concerns; program design; multicultural perspectives; sociocultural considerations; psycholinguistic concerns; current research findings; current practices in the fields of bilingual education and bilingual special education.

BXE 625
CURRICULUM I: STRATEGIES FOR CULTURALLY AND LINGUISTICALLY DIVERSE EXCEPTIONAL STUDENTS
3, 3/0

Prerequisites: Bilingual special education program major; EXE 500 and EXE 623. Unique needs of culturally and linguistically diverse exceptional students in the areas of language literacy and the development of effective content in English and Spanish; curriculum models, instructional design, teaching methods, and material development; implications of disability and cultural and linguistic diversity.

BXE 626
ASSESSMENT TECHNIQUES IN BILINGUAL SPECIAL EDUCATION
3, 3/0

Prerequisite: Bilingual special education program major. Theoretical and applied knowledge of procedures and instruments for assessing culturally and linguistically diverse individuals who are disabled; role of culture and language in the assessment process; practical techniques, materials, and experience in assessment.

BXE 627
CURRICULUM II: APPLIED STRATEGIES IN BILINGUAL SPECIAL EDUCATION

3, 3/0

Prerequisites: Bilingual special education program major; BXE 625 and BXE 626. Pedagogical and theoretical research in bilingual special education; practical application; 50-hour field participation in which students demonstrate understanding of the strategies and competencies needed to effectively teach English-language learners with disabilities.

BXE 628
BILINGUAL SPECIAL EDUCATION FIELD PRACTICUM

6, 0/6

Prerequisites: Bilingual special education program major; BXE 627. Field-based practicum experience. Direct involvement with English-language learners with disabilities in a local setting. Students assess needs, plan lessons, and teach children with disabilities. Includes weekly seminar. Equivalent courses: SLA611, SLP611

BXE 721
THESIS/PROJECT CONTINUATION

0, 0/0

BXE 722
THESIS/PROJECT EXTENDED

0, 0/0

CHE - CHEMISTRY

CHE 501
QUANTITATIVE CHEMICAL ANALYSIS

3, 2/6

Not open to students who have had CHE 301 or equivalent. Advanced theoretical background and laboratory techniques required for quantitative and qualitative chemical analysis; emphasis on fundamental principles and applications of gravimetric, volumetric, electrochemical, and spectrophotometric analytical techniques; statistics for experimental data handling; conducting independent chemical analysis projects.

CHE 530
ADVANCED ENVIRONMENTAL CHEMISTRY

3, 3/0

Suggested Prerequisite: CHE 201. Chemistry of the environment, air, water, soil, living environments, and the effects of technology thereon; the atmosphere, industrial ecosystems, phase interactions, water pollution and treatment, air pollution, global warming and green chemistry, smog, hazard wastes, soil chemistry, and toxicological chemistry.

CHE 540
SPECIAL TOPICS IN ORGANIC CHEMISTRY

3, 3/0

Suggested Prerequisite: CHE 202 or equivalent. Advanced topics, discussed in detail, with emphasis on the current state of knowledge; topics are essentially independent of each other. Class may be repeated, provided that a student has not already received credit for the same topic.

CHE 550
ADVANCED PHYSICAL CHEMISTRY

4, 4/0

Prerequisites: Graduate status and instructor permission. Advanced study of thermodynamics and quantum mechanics, with applications to chemical problems.

CHE 560
SPECIAL TOPICS IN INORGANIC CHEMISTRY

3, 3/0

Suggested Prerequisite: CHE 462 or equivalent. One of the following topics, presented in detail: coordination chemistry, nonaqueous solvents, the representative elements and lanthanides, synthetic inorganic chemistry. Topics are essentially independent of each other. Class may be repeated, provided that a student has not already received credit for the same topic.

CHE 571
BIOCHEMICAL PRINCIPLES I

3, 3/0

Prerequisites: CHE 202; BIO 211 recommended; not open to students who have taken CHE 470 or equivalent. Molecular structure and function

of the four major classes of biomolecules: proteins, nucleic acids, lipids, and carbohydrates. Enzyme kinetics, mechanism, and regulation. Molecular nature of DNA replication; introduction to recombinant DNA technology.

CHE 572
ADVANCED BIOCHEMISTRY

3, 3/0

Suggested Prerequisite: CHE 571 or CHE 470; not open to students who have had CHE 472 or equivalent. Examination of metabolic processes in living systems. Relationship of metabolic enzyme activity to cellular control. The chemistry of genetic information, storage and expression.

CHE 588
TOPICS COURSE

3, 3/0

CHE 620
KINETICS AND REACTION MECHANISMS

4, 4/0

Suggested Prerequisites: CHE 202, CHE 306 or CHE 550, and CHE 462 or instructor permission. Methods of determining mechanisms of chemical processes. Required for all M.A. in chemistry candidates.

CHE 626
SYMMETRY, GROUP THEORY, AND VIBRATIONAL SPECTROSCOPY

1, 1/0

Prerequisites: CHE202 and CHE204. Symmetry, point groups, and simple applications of group theory, with special emphasis on the vibrational spectroscopy of small molecules. Use of the department's IR spectrometer.

CHE 627
X-RAY CRYSTALLOGRAPHY

1, 1/0

Prerequisites: CHE 202 and CHE 204 or equivalents. The seven crystal systems, 14 Bravais lattices, 32 crystallographic point groups, 230 space groups, the theory of X-ray diffraction, and the methods of crystal structure determination. Data mining using structural databases (Brookhaven Protein Data Bank and Cambridge Structural Database) for various applications in organic, coordination, pharmaceutical, and forensic chemistry. Collecting powder and/or single crystal diffraction data on the department's X-ray diffractometers; solving and refining a crystal structure using the appropriate software packages. Use of the department's X-ray diffractometer.

CHE 628
NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY

1, 1/0

Prerequisites: CHE 202 and CHE 204 or equivalents. Theory and practice of nuclear magnetic resonance spectroscopy, including pulse and two-dimensional methods. Use of the department's NMR spectrometer.

CHE 629
MASS SPECTROMETRY

1, 1/0

Prerequisites: CHE202 and CHE204 Theory and practice of mass spectrometry. Basic physics of mass spectrometry and ionization methods. Gas phase chemistry, rearrangements, and ion molecule reactions. Use of the department's electron impact ionization and electrospray mass spectrometers.

CHE 670
BIOMOLECULES: PROTEINS, NUCLEIC ACIDS, AND ENZYMES

3, 3/0

Prerequisites: CHE202 Structure-function relationships in proteins, enzymes, and nucleic acids. Introduction to biochemical techniques for the study of proteins, nucleic acids, and enzymes. Examination of the molecular basis of enzyme function, signal transduction, and neural and sensory responses in living systems.

CHE 672
FORENSIC MOLECULAR BIOLOGY

4, 3/3

Prerequisites: CHE670 C AND (CHE470 D OR BIO305 D) AND (BIO303 D OR BIO303W D OR BIO350 D) AND (FOR612 C OR CHE312 D) Applications of biology, biochemistry, and genetics to forensic science with an in-depth look at the evidential information that

can be obtained from blood, semen, saliva, and hair. Details of DNA profiling, including DNA extraction, DNA quantification, PCR amplification, STR analysis and interpretation, and mtDNA sequencing. Protein polymorphisms and immunological tests. Laboratory component providing hands-on experience with techniques commonly used in a forensic biology laboratory.
Equivalent course: BIO672

CHE 680
ADVANCED ANALYTICAL CHEMISTRY
3, 3/0

Prerequisites: CHE 501 or equivalent, or instructor permission. A study of chemical analysis using representative instrumental techniques, including spectroscopy, chromatography, and mass spectroscopy; emphasis on fundamental theory, principles of operation, capabilities, and limitations of various analytical instruments; integration of laboratory-based demonstrations of data collection and analysis using selected analytical techniques.

CHE 690
MASTER'S PROJECT
3, 3/0

A study undertaken by one or more individuals on a problem of special interest submitted in acceptable form according to directions given by the Chemistry Department.

CHE 698
JOURNAL SEMINAR
1, 1/0

Prerequisites: Matriculated status in the M.S. in Forensic Science program or instructor permission. Examination of methods used to compose and deliver an effective seminar in the sciences. Searching the scientific literature. Oral presentation of a topic from the current literature in chemistry or forensic science. Required of all students in the M.S. in Forensic Science program.

CHE 699
THESIS SEMINAR AND DEFENSE
2, 2/0

Prerequisite: Instructor permission. Oral presentation of a topic selected from the current literature of chemistry; presentation and defense of the thesis.

CHE 721
THESIS/PROJECT CONTINUATION
0, 0/0

CHE 722
THESIS/PROJECT EXTENDED
0, 0/0

CHE 795
RESEARCH THESIS IN CHEMISTRY
1-12, 0/0

Individual investigation of an original problem in Chemistry submitted in acceptable form according to directions given by the Chemistry Department and the Graduate School.

CIS - COMPUTER INFORMATION SYSTEMS

CIS 721
THESIS/PROJECT CONTINUATION
0, 0/0

CIS 722
THESIS/PROJECT EXTENDED
0, 0/0

CNS - ART CONSERVATION

CNS 600
TECHNIQUES OF EXAMINATION AND DOCUMENTATION I
2, 2/0

Methods and techniques used to determine and document the condition of artifacts (deterioration and alteration of works of art caused by aging, trauma, and/or previous restorations); development of both theoretical

understanding and advanced practical skills in scientific photography and conservation photo documentation, as well as in general studio photography, including processing and printing. Students learn to recognize and record the structure of artifacts and the manifestations of their deterioration.
Equivalent course: CNS601

CNS 602
TECHNIQUES OF EXAMINATION AND DOCUMENTATION II
2, 2/0

Continuation of CNS 600. Ultraviolet, infrared, and radiographic techniques used to examine and document the structure and condition of artworks and cultural artifacts; proper techniques for planning, producing, and delivering professional slide presentations. Emphasizes both theoretical understanding and development of practical skills.

CNS 604
TECHNIQUES OF EXAMINATION AND DOCUMENTATION III
2, 2/0

Continuation CNS 602. Advanced techniques in examination and documentation; advanced skills in radiography and in ultraviolet, infrared, and other imaging techniques appropriate to a student's area of conservation specialization; advanced-level readings in conservation literature, as well as in the fields of imaging science and nondestructive testing; research into the application of newly developed examination methods and new applications of existing methods; individual supervision of applications of all techniques to the treatment or analysis of artifacts assigned in advanced courses of paintings, paper, and objects conservation.

CNS 606
TECHNIQUES OF EXAMINATION AND DOCUMENTATION IV
2, 2/0

Continuation of CNS 604. Advanced techniques in examination and documentation; advanced skills in radiography and in ultraviolet, infrared, and other imaging techniques appropriate to a student's area of conservation specialization; advanced-level readings in conservation literature, as well as in the fields of imaging science and nondestructive testing; research into the application of newly developed examination methods and new applications of existing methods; individual supervision of applications of all techniques to the treatment or analysis of artifacts assigned in advanced courses in painting, paper, and objects conservation.

CNS 607
TECHNIQUES OF EXAMINATION AND DOCUMENTATION IV
LABORATORY

1, 0/1
Continuation of CNS 604/605. Individually supervised instruction in advanced techniques in examination and documentation; advanced skills in radiography and in ultraviolet, infrared, and other imaging techniques appropriate to a student's area of conservation specialization; advanced-level readings in conservation literature, as well as in the fields of imaging science and nondestructive testing; research into the application of newly developed examination methods and new applications of existing methods; individual supervision of applications of all techniques to the treatment or analysis of artifacts assigned in advanced courses in paintings, paper, and objects conservation.
Equivalent course: CNS604L

CNS 610
POLYMERS IN ART & CONSERVATION
3, 3/0

Corequisite: CNS 611. The chemistry and physics of polymers used to create and treat artwork. Nomenclature, reactivity, structure-property relationships, solubility, surfactants, emulsions, natural and synthetic coatings and adhesives, degradation, mechanical properties, polymer additives, and analytical methods of identification and characterization.

CNS 611
POLYMERS IN ART & CONSERVATION (LAB)
1, 0/3

Corequisite: CNS 610. The chemistry and physics of polymers to explain the behavior of materials used to create and treat artwork. Nomenclature, reactivity, structure-property relationships, solubility, surfactants, emulsions, natural and synthetic coatings and adhesives, degradation, mechanical properties, polymer additives, and analytical methods of identification and characterization.
Equivalent course: CNS611L

CNS 612
CONSERVATION SCIENCE: POLARIZED LIGHT MICROSCOPY, LIGHT & MATTER
2, 3/0
Prerequisite: CNS 610/611. Corequisite: CNS 613. Introduction to aspects of the elements of light, color, and optics as they pertain to polarized light microscopy in the field of art conservation; principles of optical microscopy; how light interacts with matter, especially as it applies to the appearance of art and cultural objects.

CNS 613
CONSERVATION SCIENCE: POLARIZED LIGHT MICROSCOPY, LIGHT & MATTER LABORATORY
1, 0/3
Prerequisite: CNS 610/611. Corequisite: CNS 612. Expands on lectures in CNS 612 by providing practice of laboratory applications related to treatment and analysis of works of art; focus on the use of polarized light microscopy and microchemical testing of materials found in works of art and cultural artifacts.
Equivalent course: CNS612L

CNS 614
CONSERVATION SCIENCE: INORGANIC MATERIALS IN ART AND CONSERVATION
3, 3/0
Prerequisite: CNS 612/613. Corequisite: CNS 615. Specialized understanding of inorganic materials with an emphasis on alternative scientific techniques used for their investigation (i.e., scanning electron microscopy, x-ray fluorescence analysis, x-ray diffraction). Material is presented at a level that prepares students to use the equipment at a basic level, or to communicate effectively with professional scientists who run the equipment.
Equivalent course: CNS661

CNS 615
CONSERVATION SCIENCE: INORGANIC MATERIALS IN ART & CONSERVATION LABORATORY
1, 0/3
Prerequisite: CNS 612/613. Corequisite: CNS 614. Expands on lectures in CNS 614 and provides students with practice laboratory applications related to treatment and analysis of works of art. Focus on the use of polarized light microscopy and microchemical testing of materials found in works of art and cultural artifacts.
Equivalent course: CNS661L

CNS 616
TECHNICAL ASPECTS OF PREVENTATIVE CONSERVATION
3, 3/0
Prerequisites: CNS614/615; co-requisite with CNS617. Explores the scientific principles behind preventive conservation and delivers hands-on experience in manipulating the storage and display environment for cultural heritage objects control. Topics include: degradation kinetics, environmental monitoring & control, artificial aging, materials testing, protective coatings, and mitigation of biological degradation. Laboratory exercises provide hands-on experiences in preventive conservation.
Equivalent course: CNS662

CNS 617
TECHNICAL ASPECTS OF PREVENTATIVE CONSERVATION (LAB)
1, 0/3
Prerequisites: CNS614/615; co-requisite with CNS616. Laboratory course explores the scientific principles behind preventive conservation. Hands-on experiences in experimentally manipulating the storage and display environment for cultural heritage objects, and the results of that manipulation.
Equivalent course: CNS662L

CNS 620
TECHNOLOGY AND CONSERVATION OF PAINTINGS I
2, 2/0
Prerequisites: Formal acceptance into the Art Conservation Department; co-requisite with CNS621. Historical survey of processes and materials employed by artists in the creation of wall and easel paintings from Paleolithic to the present and the implications for their conservation. Painting types include rock art, Egyptian and Etruscan tomb painting, medieval egg tempera, Italian Renaissance fresco, oil on panel and canvas, and modern media.

CNS 621
TECHNOLOGY AND CONSERVATION OF PAINTINGS 1 (LAB)
1, 0/3
Prerequisites: Co-requisite with CNS620. Students create two mock-up paintings using historical materials and techniques to the greatest extent possible: 14th century Sieneese egg tempera panel and 17th century Flemish or Spanish oil painting on canvas. The technical examination of an aged oil painting of value is performed in detail, and recorded in writing for the client.

CNS 622
TECHNOLOGY AND CONSERVATION OF PAINTINGS II
2, 2/0
Prerequisites: Successful completion of CNS620 and 621; co-requisite with CNS623. The theory and practice of conserving easel paintings is examined in detail. Topics include treatment proposal ethics and design, aqueous and solvent based cleaning systems, resins and solvents used for consolidation, mechanics and dynamics of canvas paintings and support systems, humidification and lining treatments, varnishes and varnishing techniques and color matching theory and its application to in-painting.

CNS 623
TECHNOLOGY AND CONSERVATION OF PAINTINGS II LABORATORY
1, 0/3
Corequisite: CNS 622. The practice of conserving easel paintings using aqueous and solvent based cleaning systems, resins and solvents used for consolidation, mechanics and dynamics of canvas paintings and support systems, humidification and lining treatments, varnishes and varnishing techniques and color-matching theory and its application to inpainting. Professional ethics applied to treatment proposal and reports.

CNS 624
TECHNOLOGY AND CONSERVATION OF PAINTINGS III
2, 2/0
Prerequisites: Laboratory course offered as a continuation of CNS623. Greater involvement with easel painting treatments allows the student to broaden her/his repertoire of skills, to further develop acuity for recognizing condition problems and to strengthen visual connoisseurship for distinguishing original paint from later additions.
Equivalent course: CNS671

CNS 626
TECHNOLOGY AND CONSERVATION OF PAINTINGS IV
4, 0/6
Laboratory course offered as a continuation of CNS 624. Restricted to students majoring in paintings conservation. Greater involvement with easel painting treatments allows students to broaden their repertoire of skills, further develop acuity for recognizing condition problems, and strengthen visual connoisseurship for distinguishing original paint from later additions. Involves original research and materials analysis.
Equivalent course: CNS672

CNS 630
TECHNOLOGY & CONSERVATION OF WORKS OF ART ON PAPER I
2, 2/0
Corequisite: CNS 631. The structure and fabrication of paper and the media commonly found in works of art on paper, photographs, and books; examination and identification of paper and media; causes and effects of deterioration in paper and media; student writes and defends the examination report for a work of art on paper.

CNS 631
TECHNOLOGY & CONSERVATION OF WORKS OF ART ON PAPER I LABORATORY
1, 0/3
Corequisite: CNS 630. Studio recreations of paper and the media found in art on paper using historical recipes and techniques; identifications of media and sheets found in works of art on paper; rudimentary repairs on a variety of papers.

CNS 632
TECHNOLOGY AND CONSERVATION OF WORKS OF ART ON PAPER II
2, 2/0
Prerequisites: CNS 630 and CNS 631. Corequisite: CNS 633. History and theory of basic techniques in paper conservation (washing, deacidification/neutralization, tape removal, lining, adhesives,

compensation of losses, formats for storage, etc.); hands-on practice of these and other techniques on mock-ups.

**CNS 633
TECHNOLOGY AND CONSERVATION OF WORKS OF ART ON
PAPER II LABORATORY**

1, 0/3

Prerequisites: CNS 630 and CNS 631. Corequisite: CNS 632. Treatment of the first project in paper conservation under the close supervision of the faculty; a second project

Equivalent course: CNS632L

**CNS 634
TECHNOLOGY AND CONSERVATION OF WORKS OF ART ON
PAPER III LABORATORY**

2, 0/3

Prerequisites: CNS 630/631 and CNS 632/633. First advanced course in paper conservation allows the student to examine and treat a wider variety of media, paper, and conservation problems. Independent decision making and problem solving is encouraged. Short research projects are also possible.

Equivalent course: CNS681

**CNS 636
TECHNOLOGY AND CONSERVATION OF WORKS OF ART ON
PAPER IV**

4, 0/6

Prerequisite: CNS 634. Final course in the series of treatment courses for the paper conservation specialist; intended to allow the student to examine and treat a wider variety of media, paper, and conservation problems. Independent decision making and problem solving are required. Short research projects are needed for each treatment.

Equivalent course: CNS682

**CNS 640
TECHNOLOGY AND CONSERVATION OF OBJECTS I**

2, 2/0

Co-requisite with CNS 641. Technology and material science of cultural objects composed of organics (wood, plant materials, animal materials including leather, bone, ivory, etc., and non-cellular organics such as resins and coatings); changing attitudes towards these materials, and changes in the strategies of working these materials.

**CNS 641
TECHNOLOGY AND CONSERVATION OF OBJECTS I
LABORATORY**

1, 0/3

Equivalent course: CNS641L

**CNS 642
TECHNOLOGY AND CONSERVATION OF OBJECTS II**

2, 2/0

Continuation of CNS 640. Technological history and conservation of a wide variety of materials encountered in historic and artistic objects: metals, glass, ceramics, wood, decorative surface techniques (lacquering, japanning, gilding), skins and other organics, stone; fabrication techniques and how they can be identified; conservation treatments and recommendations; studio sessions include demonstrations of techniques and supervised work on a variety of objects. Field trips.

**CNS 644
TECHNOLOGY AND CONSERVATION OF OBJECTS III**

2, 0/3

Advanced study of the technology and materials of objects, especially technology and conservation of inorganic materials (metals, glass, stone, ceramics, etc); changes in the strategies of working them over time, and as conditioned by culture; appropriate conservation techniques.

Equivalent course: CNS691

**CNS 646
TECHNOLOGY AND CONSERVATION OF OBJECTS IV**

4, 0/0

Students select an area of specialization (requires approval of the faculty member involved) and then participate in unique conservation treatments, which may involve research and scientific experimentation.

Equivalent course: CNS692

**CNS 685
PROFESSIONALISM IN CONSERVATION I**

2, 2/0

Professional ethics and standards in relation to works of art and colleagues; systems for surveying collections; instructing other museum departments; assisting the public to better understand conservation principles; practical aspects of storing and handling hazardous materials; establishing, insuring, and equipping a conservation studio.

Equivalent course: CNS651

**CNS 686
PROFESSIONALISM IN CONSERVATION II**

1, 1/0

Continuation of CNS 685. Ethical and practical aspects of professional conservation activity. Students specializing in paintings, paper, or objects attend one of three concurrent seminars aimed at enriching course material covered in previous semesters, as well as introducing new topics for discussion and/or demonstration. Guest speakers from conservation and allied professions. Field trips.

Equivalent course: CNS652

**CNS 695
STUDENT SPECIALIZATION**

4, 0/0

Directed study course, guided by one or more faculty members, in which the student performs research and/or treatment related to a selected artifact or group of artifacts within his or her chosen concentration. Procedures are completely documented and presented in both oral and written form at the end of the semester.

**CNS 698
INTERNSHIP SUSTAINING**

0, 0/0

**CNS 699
INTERNSHIP**

0, 0/0

**CNS 721
THESIS/PROJECT CONTINUATION**

0, 0/0

**CNS 722
THESIS/PROJECT EXTENDED**

0, 0/0

COM - COMMUNICATION

**COM 519
COMMUNICATION FOR LEADERS AND MANAGERS**

3, 3/0

Theories of effective communication; face-to-face communication; group problem solving; public speaking; power and leadership in organizational settings; persuasive messages and campaigns that public relations practitioners design for a variety of publics. Designed for graduate students interested in improving their workplace communication skills.

Equivalent courses: BUS519, EAD519, JBS519

**COM 590
INDEPENDENT STUDY**

1-3, 1-3/0

**COM 610
STRATEGIC PUBLIC RELATIONS**

3, 3/0

Prerequisite: Admission to the graduate program in public relations management. Organizational principles and strategic planning practices underscoring effective management of public relations.

**COM 620
PUBLIC RELATIONS MANAGEMENT**

3, 3/0

Prerequisites: COM 610; admission to the graduate program in public relations management. Management of public relations with diverse publics in various environments, including internal, media, consumer, community, and investor relations.

COM 630
APPLICATIONS OF PUBLIC RELATIONS

3, 3/0

Prerequisites: COM 610 and COM 620; admission to the graduate program in public relations management. Management of various elements in the production of public relations messages: writing, design, and research. A foundation for formal research in public relations planning, implementation, and evaluation.

COM 640
CERTIFICATE PROJECT IN PUBLIC RELATIONS

3, 3/0

Prerequisites: COM 610 and COM 620; prerequisite or corequisite: COM 630. Practical application of knowledge acquired in COM 610, COM 620, and COM 630 through the development of a strategic public relations campaign or project.

COM 690
MASTER'S PROJECT

3, 0/0

Prerequisites: COM 610 and COM 620; prerequisite or corequisite: COM 630. Practical application of knowledge acquired in COM 610, COM 620, and COM 630 through the development of a strategic public relations campaign or project.

COM 695
MASTER'S THESIS

3, 0/0

Equivalent course: JBS695

COM 721
THESIS/PROJECT CONTINUATION

0, 0/0

COM 722
THESIS/PROJECT EXTENDED

0, 0/0

CRJ - CRIMINAL JUSTICE

CRJ 501
THEORETICAL PERSPECTIVES ON CRIME AND CRIMINAL JUSTICE

3, 3/0

Patterns and trends in crime and victimization in the United States; the complex relationships between theoretical explanations of criminal behavior and criminal justice policies and priorities; theoretical and empirical foundations of criminal behavior and crime control; development of writing and conceptual skills.

CRJ 504
RESEARCH METHODS IN CRIMINAL JUSTICE

3, 3/0

Prerequisite: Graduate status or instructor permission. Nature of research in criminal justice: theory, experimental and quasi-experimental design, sampling, measurement, data analysis, and ethics.

CRJ 508
HISTORY OF CRIMINAL JUSTICE

3, 3/0

Prerequisite: Graduate status or instructor permission. Societal responses to crime and disorder in the United States from the colonial period through the twentieth century; social forces that influenced the development of criminal law and its institutions of social control; readings in traditional and revisionist scholarship on social disorder, law, crime, police, courts, prisons, and juvenile justice.

CRJ 601
CORRECTIONAL STRATEGIES

3, 3/0

Prerequisite: Graduate status. Historical, philosophical, theoretical, and legal dimensions of correctional practices in the United States; contemporary correctional strategies and services, including institutional and community-based programs, within the context of contemporary correctional policy.

CRJ 602
ORGANIZATIONAL BEHAVIOR AND THE MANAGEMENT PROCESS IN CRIMINAL JUSTICE

3, 3/0

Prerequisite: Undergraduate advanced administration in criminal justice or equivalent. Managerial environment of criminal justice organizations; analysis and application of administrative science to improving crime control agency management.

CRJ 603
ADMINISTRATION OF JUSTICE

3, 3/0

Prerequisite: Graduate status. Intensive and integrative analysis of the administration of criminal justice. Uses a pluralistic model of public crime control policy making to examine existing and possible future efforts and effects on the American criminal justice and criminal-legal system and its agencies and operations. Extensive exposure to the criminal justice system, supporting social science, and legal literature in the field.

CRJ 604
CRIMINAL COURTS

3, 3/0

Theory of courts and the legal, social, and political processes that significantly affect the operation of the criminal courts, the administration of justice, and judicial decision making; the interrelationship among the social and political forces that influence court decisions and justice.

CRJ 605
LAW AND SOCIAL CONTROL

3, 3/0

Prerequisite: Graduate status or instructor permission. Nature of social control as it is vested in the objectives, procedures, and authority of law and social institutions; social and legal implications of social control, and the limits of criminal law as a means of social control.

CRJ 606
LAW ENFORCEMENT ISSUES

3, 3/0

Prerequisite: Graduate status or instructor permission. Selected issues relating to the role and operations of law enforcement in a time of complex social change. Topics vary as developing issues and problems affect the police.

CRJ 608
SPECIAL TOPICS IN CRIMINAL JUSTICE

3, 3/0

Prerequisite: Graduate status. Intensive analysis of a special topic(s) not covered in the existing curriculum, to be determined by relevancy and currency of the topic(s), student interests, and the availability of resources and expertise to teach the specific subject matter. May be taken three times (up to 9 credits).

CRJ 620
WHITE-COLLAR CRIME

3, 3/0

Prerequisite: Graduate status. Theoretical and empirical literature on upper-world crime and its impact on society; the relationship between and effectiveness of criminal, civil, and regulatory processes; characteristics of offenders.

CRJ 622
JUVENILE JUSTICE

3, 3/0

Prerequisite: Graduate status. Historical, philosophical, theoretical, and legal foundations of juvenile justice systems in states across the country; the relationship between juvenile delinquency and youth crime; various state juvenile justice strategies; empirical studies of interventions to combat drug behavior; gangs and criminal violence; the effectiveness of the complex decisions made by the juvenile justice system in addressing delinquency and youth crime.

CRJ 624
COMPUTER APPLICATION

3, 3/0

Prerequisite: Graduate status or instructor permission. Various computer applications of basic statistical methods as they apply to criminal justice; a combination of lectures on both descriptive and inferential statistics and hands-on experience in the computer lab, designed to increase analytical ability through quantitative training exercises.

CRJ 625
RACE AND ETHNICITY IN CRIMINAL JUSTICE
3, 3/0

Prerequisite: CRJ 501. Manifestations of racial and ethnic stratification in American society and their effects on crime and the administration of criminal justice in the United States; history of racial stratification in the United States; effects of racial stratification on the criminality of minority groups; differential enforcement of the law against members of minority groups at different phases of the criminal justice process.

CRJ 626
GENDER ISSUES IN CRIMINAL JUSTICE
3, 3/0

Prerequisite: CRJ 501. Gender differences and their effects on criminal behavior, law, and the criminal justice process; crimes of which women are disproportionately victims; the extent, types, distinguishing characteristics, and theories of female criminality; criminal justice policies and practices that result in the differential treatment of female victims, offenders, and practitioners.

CRJ 628
ORGANIZED CRIME
3, 3/0

Prerequisite: Graduate status. History, structure, operation, and theories of organized crime, and the problems of control that law enforcement faces; interaction among criminals, victims, community, law enforcement, and the laws within the pluralistic political context.

CRJ 630
CONSTITUTIONAL ISSUES IN CRIMINAL JUSTICE
3, 3/0

Prerequisite: Admission to the criminal justice master's degree program or instructor permission. Legal reasoning, writing briefs, and legal research; identifying and analyzing selected Supreme Court cases, with an emphasis on the First, Fourth, and Fifth Amendments of the U.S. Constitution; examining former ideologies for comparison with current trends, issues, and ideologies, emphasizing the comprehension of legal thought and how it changes. Uses the casebook method of study.

CRJ 635
CRIMINAL JUSTICE ETHICS
3, 3/0

Prerequisite: Graduate status. Ethics as a component of criminal justice: overview of basic ethical concepts and theories; macro-level ethical issues and problems in the criminal justice process; specific ethical problems of the various components of the criminal justice process.

CRJ 690
MASTER'S PROJECT
3, 0/0

Research or investigation of a particular problem, planned and carried out by the student with consultation and guidance from the instructor.

CRJ 710
RESEARCH PROJECT
3, 3/0

Prerequisites: Graduate status, instructor permission, and department approval. Participation in an ongoing research project by invitation of a criminal justice faculty member. May be taken only once.

CRJ 721
THESIS/PROJECT CONTINUATION
0, 0/0

CRJ 722
THESIS/PROJECT EXTENDED
0, 0/0

CRS - CREATIVE STUDIES

CRS 509
INTRODUCTION TO THE GIFTED, TALENTED AND CREATIVE LEARNER
3, 3/0

Introduction to giftedness, talent development, and creativity in students, examining both the historical foundations and the current state of the field. Examines characteristics and identification of academically gifted, creative, and talented students from diverse backgrounds and areas of

ability who learn at a pace and level that are significantly different than classmates.

Equivalent courses: EDU509, EXE509

CRS 559
PRINCIPLES IN CREATIVE PROBLEM SOLVING
3, 3/0

Theory and application of the Creative Problem Solving (CPS) process; practice in both individual and group uses for either personal or professional contexts; group work and active participation are expected.

CRS 560
FOUNDATIONS OF CREATIVE LEARNING
3, 3/0

Theory and research that form the foundation of the discipline of creativity studies; development of awareness and understanding of basic principles, select definitions, models, and theories and practice in applying them in a variety of contexts. Group interaction, discussion, and project work are expected.

CRS 570
CREATIVE PROBLEM-SOLVING EXPERIENCES
1, 3/0

Current issues, procedures, and principles of creative thinking and problem solving. Students make observations and discuss and evaluate individual experiences.

CRS 580
CREATIVITY ASSESSMENT: METHODS AND RESOURCES
3, 3/0

Practical information on methods and resources for creativity assessment; review of basic measurement principles and a critique of specific tools used to assess creativity in both education and business. Students receive personal feedback on a number of measures and develop a profile of their own creative strengths.

CRS 585
LEARNING STYLE METHODS/RESOURCES FOR CREATIVE AND TALENT DEVELOPMENT
3, 3/0

Applying learning style processes to guide planning for creative and talent development; information and hands-on experience on documenting students' learning style strengths.

CRS 590
INDEPENDENT STUDY
1-3, 0/0

CRS 610
FACILITATION OF GROUP PROBLEM SOLVING
3, 3/0

Prerequisites: CRS 559. Advanced strategies for leading small groups through the Creative Problem Solving (CPS) process; mastery of facilitation techniques and skills. Students receive expert feedback on their facilitation skills as they apply creative strategies to real issues. Examines conceptual relationships between facilitation and change leadership; develops basic change leadership skills. Equivalent courses: EAD683, ELF683

CRS 614
ADVANCED COGNITIVE TOOLS FOR CREATIVE PROBLEM SOLVING
3, 3/0

Prerequisite: CRS 559. A focus on developing students' skills in applying and facilitating advanced creative problem-solving tools that involve diagnostic, visionary, strategic, ideational, evaluative, contextual, and tactical thinking. The cognitive tools are drawn from various fields, such as quality improvement and strategic management, and include decision making and various problem-solving models.

CRS 621
CURRICULUM DEVELOPMENT IN GIFTED, TALENTED AND CREATIVE EDUCATION
3, 3/0

Prerequisite: EDU or EXE 509. Appropriate curriculum, materials, instructional methods, and evaluation strategies for the development of creativity and the education of individuals who demonstrate gifted behavior and talents. Examines instructional and curricular models,

differentiated teaching/learning and creative/critical thinking strategies, and collaboration with the school community.

Equivalent course: EDU621

CRS 625

CURRENT ISSUES IN CREATIVE STUDIES

3, 3/0

Prerequisite: CRS 559 or CRS 560. In-depth survey of current issues on the nature or nurture of creativity; skill development in research and scholarship to increase critical thinking skills and general content literacy of creativity practitioners in any discipline; review, analysis, and interpretation of findings from empirical and nonempirical sources, with some emphasis on the background and development of research at the International Center for Studies in Creativity.

CRS 635

CREATIVITY AND CHANGE LEADERSHIP

3, 3/0

Prerequisites: CRS 560 and CRS 625. Culminating activities that cap the Foundations of Creativity strand of the curriculum; understanding and applying the characteristics of change leadership in the context of creativity and Creative Problem Solving (CPS); theoretical and practical launching point for students to examine their future contributions to the field, domain, and discipline by articulating their personal philosophy and definition of creativity; relation of the CPS process and other change methods to the challenge of making lasting change in other disciplines, such as business, education, psychology, sociology, history, philosophy, or the arts or sciences.

Equivalent course: CRS615

CRS 670

FOUNDATIONS IN TEACHING AND TRAINING CREATIVITY

3, 3/0

Prerequisites: CRS 559 and CRS 610. Practical experience in using principles of creative learning, Creative Problem Solving (CPS), and leadership to facilitate groups; guided practice and independent work in realistic teaching/training situations to develop independent learners and reflective practitioners; use of CPS facilitation skills to develop instructional designs and examine ways to modify teaching and leading with CPS in various groups or situations.

CRS 680

DESIGNING AND DELIVERING CREATIVITY EDUCATION

3, 3/0

Prerequisites: CRS 559 and CRS 560. Team-teaching experience in creative studies undergraduate courses under direct supervision of the faculty. With permission of instructor, under special circumstances, team teaching may be done in a school, in industry, or in a special creative problem-solving program.

CRS 690

MASTER'S PROJECT

3-6, 0/0

Prerequisites: CRS 559 and CRS 610. Development and implementation of an applied project requiring Creative Problem Solving (CPS), change leadership, and facilitation skills; definition and implementation of change initiatives that have a direct impact either on the community or for the field of creativity in general; development of analytical skills in the formation and evaluation of the success of the projects.

CRS 721

THESIS/PROJECT CONTINUATION

0, 0/0

CRS 722

THESIS/PROJECT EXTENDED

0, 0/0

CRS 795

MASTER'S THESIS

3-6, 0/0

Prerequisites: CRS 559, CRS 560, and CRS 580. Design and implementation of empirical research (qualitative or quantitative) designed to make new and useful contributions to the field of creativity. Students work closely with faculty and, in many cases, join ongoing programs of research within the department

CTE - CAREER AND TECHNICAL EDUCATION

CTE 530

CAREER EDUCATION: RATIONALE, NATURE, AND CONCEPTS

3, 3/0

Career education concepts, terminology, and models for elementary school through college; present programs, research, and current thinking on career education.

CTE 536

CONTEMPORARY METHODOLOGY

3, 3/0

New and emerging techniques of instruction and their applications to specific individual problems; development of models appropriate to students' particular subject areas.

CTE 550

ORGANIZATION OF DIVERSIFIED COOPERATIVE WORK-STUDY PROGRAMS

3, 3/0

Information for occupational teachers and department chairs or supervisors interested in establishing diversified cooperative programs; procedures for promoting a new program; working with advisory boards; developing employment opportunities; arranging trainee outlines; planning instructional facilities; securing Regents accreditation.

CTE 555

OPERATION OF DIVERSIFIED COOPERATIVE WORK-STUDY PROGRAMS

3, 3/0

Conducting effective instruction in diversified cooperative programs; interviewing employers; supervising trainees; interpreting legal aspects; preparing records and reports; conducting classes in related theory.

CTE 600

CONTEMPORARY ISSUES IN OCCUPATIONAL EDUCATION

3, 3/0

Current issues, practices, policies, and literature in occupational education.

CTE 601

SUPERVISION OF VOCATIONAL EDUCATION

3, 3/0

Nature and scope of supervision; surveying and analyzing needs and facilities; planning, initiating, and maintaining supervisory programs; evaluating procedures and outcomes; trends in occupational education.

CTE 602

ADMINISTRATION OF VOCATIONAL EDUCATION

3, 3/0

Nature and scope of administering vocational technical programs: curriculum; integration with industry; evaluation; community relationships; advisory board development; state and national relationships.

CTE 603

SELECT TOPICS IN THE ORGANIZATION AND ADMINISTRATION/SUPERVISION OF VOCATIONAL EDUCATION

3, 3/0

Prerequisite: CTE 601 or instructor permission. Problems arising in the organization, administration, and supervision of vocational technical education.

CTE 604

TECHNICAL PROJECT

3, 3/0

Internship experience with industry or business to study new techniques, operations, and processes, cooperatively initiated by faculty and student. Students develop instructional material reflecting the new knowledge and skills gained.

**CTE 605
OCCUPATIONAL GUIDANCE FOR CAREER EXPLORATION
3, 3/0**

Prerequisite: Graduate status and career and technical education program major or instructor permission. Vocational guidance techniques and procedures that may be effectively used in career counseling for the changing world of work.

**CTE 606
HISTORY AND PHILOSOPHY OF OCCUPATIONAL EDUCATION
3, 3/0**

Historical review of the philosophical, sociological, economic, and political indices that have influenced the development of vocational technical education.

**CTE 620
STRUCTURE OF OCCUPATIONAL PROGRAMS
3, 3/0**

Prerequisite: Graduate status or instructor permission. Structure of occupational education; survey and analysis of present programs; assessment of articulation between programs; viability of the occupational education structure in light of internal and external forces promoting change.

**CTE 625
INTERRELATIONSHIPS OF LABOR, MANAGEMENT, AND
OCCUPATIONAL EDUCATION
3, 3/0**

Roles of labor and management in American society, their relationship to occupational education, and their historical development; the impact of technology; interpreting the needs of industry for occupational and continuing education.

**CTE 655
DIVERSITY ISSUES IN ADULT EDUCATION AND TRAINING
3, 3/0**

Prerequisite: Graduate status. Teaching and learning implications of diversity for adult educational achievement and career opportunities. Implications for course content and classroom management styles when adult educators are sensitive to race, ethnicity, gender, sexual orientation, class, and physical ability. Methods for structuring course content, designing curricula, and educating learners by promoting and embracing a diverse population of colleagues, learners, workers, and clients. Equivalent course: ADE655

**CTE 675
POSTSECONDARY TEACHING PRACTICUM
3, 2/0**

Prerequisites: Graduate status, ADE 610 or CTE 536, and instructor permission. Promotes expertise in teaching in human resource development adult education, workforce training, community colleges, and GED program settings. Extended teaching assignments with coach/mentor assistance. Seminar-type discussions reflecting on learning and development of learners as they taught, principles of teaching, their teaching behaviors, strategies promoting continuing growth as teachers. Analyze issues in teaching: diversity, technology, exceptionality, promoting social justice. Equivalent course: ADE675

**CTE 690
MASTER'S PROJECT
3, 3/0**

Research or investigation of a particular problem, planned and carried out by the student and guided by the instructor.

**CTE 695
MASTER'S THESIS
6, 6/0**

Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School. Problem and procedure must be approved by the student's graduate adviser, CTE advisory committee, and the department chair before the investigation begins.

**CTE 721
THESIS/PROJECT CONTINUATION
0, 0/0**

**CTE 722
THESIS/PROJECT EXTENDED
0, 0/0**

DAN - DANCE

**DAN 721
THESIS/PROJECT CONTINUATION
0, 0/0**

**DAN 722
THESIS/PROJECT EXTENDED
0, 0/0**

DED - DISTRIBUTIVE EDUCATION

**DED 721
THESIS/PROJECT EXTENDED
0, 0/0**

**DED 722
THESIS/PROJECT EXTENDED
0, 0/0**

DES - DESIGN

**DES 590
INDEPENDENT STUDY
1-6, 0/6-36**

**DES 592
INDEPENDENT STUDIO IN DESIGN
3-9, 1-3/5-15**

Prerequisites: DES 220 OR DES 230 OR DES 249 OR DES 250. Independent studio experience with consultation, advice, and supervision from an instructor in a related area of study. Involves studio experiments and experiences not available in regular course offerings. May be taken up to three times.

**DES 640
GRADUATE STUDIO IN DESIGN
3-9, 1-3/5-15**

Organization of space with a variety of materials; the designed form in theoretical, abstract, and functional applications. Tutorial relationship with instructor. Extra class assignments, including minimum studio hours equal to class hours. May be taken up to three times.

**DES 642
GRADUATE STUDIO IN FURNITURE DESIGN
3-9, 1-3/5-15**

Prerequisites: DES 250 and DES 351 or equivalent. Designer-craftsperson approach to advanced projects in wood; hand, power, and machine tool practice; aesthetic and functional considerations in design; finishing methods; care of equipment. May be taken up to three times.

**DES 643
GRADUATE STUDIO IN FIBER DESIGN
3-9, 1-3/5-15**

Prerequisite: DES 242 or equivalent or instructor permission. Advanced work in textile design, techniques, and processes: floor loom weaving, fabric printing, related techniques of fiber embellishment and construction; individual studies and projects exploring traditional and experimental concepts in fiber arts. Tutorial relationship with instructor when appropriate. May be taken up to three times.

**DES 646
GRADUATE STUDIO IN JEWELRY
3-9, 1-3/5-15**

Prerequisite: DES 230 or equivalent. Technical and aesthetic aspects of jewelry design and construction; advanced experience in fabrication techniques, casting, and stone setting according to student experience level. Tutorial relationship with instructor. Extra class assignments, including minimum studio hours equal to class hours. May be taken up to three times.

**DES 647
CASTING TECHNIQUES IN JEWELRY**

3-9, 1-3/5-15

Preparing wax models and molds, burning out, and lost-wax casting of jewelry in silver and gold; using the centrifugal casting machine; related steam casting, cuttlefish casting, open-mold casting, and associated techniques. Extra class assignments, including minimum studio hours equal to class hours. May be taken up to three times.

**DES 649
GRADUATE STUDIO IN CERAMICS**

3-9, 1-3/5-15

Prerequisite: DES 320 or equivalent. Advanced study on an individual basis: practice in throwing or hand building; study of form and texture for functional or sculptural applications; color and glaze. Extra class assignments, including minimum studio hours equal to class hours. May be taken up to three times.

**DES 690
MASTER'S PROJECT**

3, 1/5

A study undertaken by one or more individuals on a problem of special interest aimed at making a special contribution to design, as contrasted with normal class or studio activity. May be presented, in part, as an exhibition of materials collected or prepared, including a major exhibition of design related to study, with theories and findings reported.

**DES 721
THESIS/PROJECT CONTINUATION**

0, 0/0

**DES 722
THESIS/PROJECT EXTENDED**

0, 0/0

ECO - ECONOMICS

**ECO 502
WORKSHOP IN ECONOMIC EDUCATION**

3, 3/0

Prerequisite: Graduate Standing. New trends in economic education; various models of participatory and active learning; examination of an economics curriculum; hands-on practice in applying computer-based and participatory pedagogical techniques in economics. Designed to aid teachers in developing pedagogical tools for enhancing education, especially at the secondary level.

**ECO 505
HISTORY OF ECONOMIC THOUGHT**

3, 3/0

Prerequisite: B.A./B.S. Graduate Standing. The attempts of key economic thinkers from Aristotle to the present to analyze economic phenomena and to provide guidance for economic policy; history of methodology and methodological controversies in economics and their impact on the development of economic theory; study of the writings of the major economic theorists in their original published form.

**ECO 507
APPLIED MICROECONOMIC THEORY**

3, 3/0

Prerequisite: Graduate Standing. Microeconomic theories and their application to specific areas of economic analysis; regulatory and environmental policy; financial decision making; firms' response to uncertainty; consumer demand; microeconomic modeling; theories of the consumer and the firm; capital and labor markets; international trade; social welfare theory. Employs numerous analytical techniques in identifying the nature and scope of microeconomic problems and policy analysis. Students use the models developed in this course to understand real-world examples and learn how to apply economic theory in practice.

**ECO 508
APPLIED MACROECONOMIC THEORY**

3, 3/0

Prerequisite: Graduate Standing. Macroeconomic theories and their application to specific areas of economic analysis; financial forecasting and policy analysis in the public and private spheres; macroeconomic modeling; international and open-border macroeconomics; monetary and

fiscal policy; labor market institutions; determination of wages and prices; interest, inflation, and exchange rates; income and output. Employs numerous analytical techniques in identifying the nature and scope of macroeconomic problems and in the analysis of macroeconomic policy. Students use the models developed in this course to understand real-world examples and apply economic theory in practice.

**ECO 510
ECONOMICS OF EDUCATION**

3, 3/0

Prerequisite: Graduate Standing. Economic dimensions of education and the role of the education system in the economy; sources of school finance; education as an investment in human capital; economic implication of different education reform proposals; the school system as an influence on unemployment/employment patterns in the United States.

**ECO 524
APPLIED ECONOMETRICS**

3, 3/0

Prerequisite: Graduate Standing. Statistical methods used in economic analysis by practitioners in government, business, finance, and the nonprofit sector; analysis and display of data using statistical and computer packages. Students will be able to employ statistics to solve practical problems and present data in a business or government setting.

**ECO 587
TOPICS IN ECONOMICS**

1-4, 1-4/0

Prerequisite: Graduate Standing. In-depth examination of rapidly and significantly changing disciplinary issues, topics, or practices; offered occasionally.

**ECO 588
TOPICS COURSE**

3, 3/0

**ECO 589
TOPICS COURSE**

3, 3/0

Topics in economics.

**ECO 590
INDEPENDENT STUDY**

1-3, 0/0

**ECO 600
LABOR ECONOMICS**

3, 3/0

Prerequisite: One core course required for M.A. program or instructor permission. Labor market theory, process, outcomes, and U.S. labor market policies; U.S. labor relations systems (labor unions, labor law, collective bargaining) compared with systems in other industrialized nations.

**ECO 601
ENGINEERING ECONOMY**

3, 3/0

Prerequisite: Graduate Standing. Alternatives in processing, equipment selection, operation, and output compared with the various methods of production available currently or in the future.

**ECO 604
DEVELOPMENT ECONOMICS**

3, 3/0

Prerequisite: ECO 507 and ECO 508. Examination of issues related to economic development; theories of development with regard to historical experiences of advanced economies, developing economies, and less-developed countries. Economic growth, poverty, unequal development, development policy, international aid, the role of international organizations.

**ECO 610
ECONOMICS OF EDUCATION**

3, 3/0

Prerequisite Graduate Standing. Economic dimensions of education and the role of the education system in the economy; sources of school finance; education as an investment in human capital; economic implication of different education reform proposals; the school system as an influence on unemployment/employment patterns in the United States.

Equivalent course: ECO510

ECO 612
URBAN ECONOMIC ANALYSIS
3, 3/0

Prerequisites: ECO 507 or ECO 508 or instructor permission. Political economy of urban and community problems and policy: housing, poverty, environment; local government finance; strategies for the development of urban economies. Employs numerous analytical techniques in identifying the nature and scope of urban economic problems and analyzing urban policy.

ECO 650
PUBLIC FINANCE
3, 3/0

Prerequisites: ECO 507 or ECO 508 or instructor permission. Mechanics and economic costs and benefits of different modalities of federal, state, and local government finance; evaluating government programs; incidence and burden of taxes and their growth and distributional effects.

ECO 660
COST-BENEFIT ANALYSIS
3, 3/0

Prerequisites: ECO 507 or ECO 508 or instructor permission. Methods of estimating and comparing benefits and costs for the purpose of policy analysis and project evaluation in the public, private, and not-for-profit spheres. Topics include present-value calculations and estimating monetary values of nonmarketed, qualitative benefits and costs, such as health, education, environmental impact, recreation, and quality of life.

ECO 690
MASTER'S PROJECT
1-6, 0/0

ECO 691
SEMINAR ECONOMIC POLICY
3, 3/0

Prerequisites: ECO 507 and ECO 508, or Instructor Permission. Intensive examination of fiscal policy, monetary policy, industrial policy, labor policy, trade policy, foreign exchange policy, development policy, and social policy. Theoretical approaches and empirical techniques; case studies; analysis and evaluation of the impacts of economic policy on economy and society.

ECO 693
SEMINAR IN HETERODOX ECONOMICS
3, 3/0

Prerequisites: ECO 507 and ECO508. In-depth as well as up-to-date analysis of topics in microeconomics, macroeconomics and policy from various perspectives outside the conventional theories of mainstream-neoclassical economics including, but not limited to: Post Keynesian, Institutionalist, Marxian, and social economics. Topics examined are 1) historical and theoretical analysis of economic instability and crisis, 2) control of markets and the economic system, and 3) social welfare and economic policy for the public purpose.

ECO 695
MASTER'S THESIS
1-6, 0/0

ECO 721
THESIS/PROJECT CONTINUATION
0, 0/0

ECO 722
THESIS/PROJECT EXTENDED
0, 0/0

ECS - ELEMENTARY EDUCATION

ECS 721
THESIS/PROJECT CONTINUATION
0, 0/0

ECS 722
THESIS/PROJECT EXTENDED
0, 0/0

EDC - EDUCATIONAL COMPUTING

EDC 500
MICROCOMPUTER SYSTEMS
3, 3/0

Basic hardware components of a computer system; operating systems software; hands-on experience using common communications, word processing, spreadsheet and database software applications.
Equivalent courses: CIS500, EDT500, ELF672

EDC 594
GRADUATE WORKSHOP
3-12, 0/0
Equivalent course: EDT594

EDC 601
INSTRUCTIONAL TECHNOLOGIES
3, 3/0

Instructional uses of multimedia and the Internet; discussion of the hardware and software necessary for multimedia and Internet productions; integration of multimedia components into classroom instruction using presentation software and Web site development.
Equivalent course: EDT601

EDC 603
INSTRUCTIONAL DESIGN AND PROBLEM SOLVING WITH TECHNOLOGY
3, 3/0

Prerequisite: EDC 601 or instructor permission. The nature of instructional problems and various approaches to solving instructional problems, including the use of technology. The systematic design and development of instruction, including the use of technology, to create effective instructional design plans, materials, and modules.
Equivalent course: EDT603

EDC 604
AUTHORING FOR EDUCATORS
3, 3/0

Prerequisite: EDC 601 or equivalent. Authoring software; hardware and software necessary for multimedia productions; creating computer-aided instruction materials for use in classroom instruction; using an authoring package to create lessons utilizing this technology; creating Web sites.
Equivalent course: EDT604

EDC 607
NETWORKING FOR EDUCATORS
3, 3/0

Prerequisite: EDC 601 or instructor permission. Planning, design, and installation of educational technology networks, particularly computer-based data networks, such as those found in K₁₂ and college educational environments. Networking concepts and issues, such as network topologies, network media, network protocols, network components, communication services, network cable installation tools and materials, and network software.
Equivalent course: EDT607

EDC 610
INTEGRATING DIGITAL VIDEO TECHNOLOGY INTO THE CLASSROOM
3, 3/0

Prerequisite: EDC 601 or instructor permission. The roles and applications of digital video technologies in the teaching-learning process, and their integration into curriculum subject areas. Includes activities that require hands-on skills and critical thinking, such as using a camera, transferring moving images from a camera to a computer, and editing footage.
Equivalent course: EDT610

EDC 611
TELEVISION FOR EDUCATION AND TRAINING
3, 3/0

Prerequisites: EDC 601 Design, production, and delivery of educational television programs, including: (a) instructional design principles and practices relevant to educational television production; and (b) theoretical and technical aspects of television production, such as: camera basics, lenses, camera operation, lighting, audio, character-generated (CG) graphics, video recording, scriptwriting, storyboarding, production switching, direction, and software.

EDC 612
EDUCATIONAL MODELS, SIMULATIONS, AND GAMES

3, 3/0

Prerequisite: EDC 601 or instructor permission. Design and development of educational models, simulations, and games across the curriculum, using a variety of methods, media, and tools, such as system modeling software, agent-based simulation software, and various approaches to educational game design and development. Emphasis on various thinking approaches, such as systems thinking, mathematical thinking, and creative thinking.

EDC 614
EDUCATIONAL GRAPHICS AND ANIMATION

3, 3/0

Prerequisite: EDC 601 or instructor permission. Educational media related to visual intelligence and visual literacy. Students apply a range of methods, tools, media, and resources in the planning, design, and development of educational graphics, graphic novels, and computer-based animation products to help meet classroom needs.

EDC 615
EDUCATIONAL HARDWARE AND SOFTWARE

3, 3/0

Prerequisites: EDC 601. The theory, development, implementation, use, troubleshooting, and maintenance of current and emerging educational hardware (and associated software), including the personal computer, commonly-used peripheral equipment, and non-computer based hardware are examined. Students will become proficient in understanding, investigating, building, implementing, using, troubleshooting, and maintaining hardware for their own educational environments (both formal and informal), using a range of methods and tools.

EDC 617
EDUCATIONAL TECHNOLOGY FOR INFORMAL LEARNING ENVIRONMENTS

3, 3/0

Theories, methods, tools and issues relevant to effective educational exhibit design and development for informal learning environments, such as museums, art galleries, cultural centers, heritage sites, parks arboretums, science centers, etc. Students will gain knowledge and experience in the planning, design, development, implementation, and evaluation of developmentally appropriate, interactive products, exhibits, and programs for diverse audiences in these environments.

EDC 672
CREATING AND INTEGRATING TECHNOLOGY IN THE CLASSROOM

3, 3/0

Increasing the effectiveness of instructional programs through the use of microcomputers: selecting microcomputer software; fulfilling the specific curricular needs of learners, and aiding the management of the instructional program.

Equivalent courses: EDT672, EDU672

EDC 689
RESEARCH METHODS FOR MASTER'S PROJECTS AND THESES

3, 3/0

Prerequisites: Permission of the instructor required. The fundamentals of educational research methods and writing are introduced. The course is specifically designed for Educational Technology program students doing their master's projects. Topics include basic research methods, sources of information, interpretation of research studies, components of a research paper, and developing and writing a research paper and a literature review for a master's project. The emphasis throughout the course is on understanding and using the components and methods of research studies in education, and educational technology, in particular.

EDC 690
MASTER'S PROJECT

3, 3/0

Equivalent course: EDT690

EDC 707
COMPUTER APPLICATIONS IN EDUCATION ADMINISTRATION

3, 3/0

Use of computer technology to make every day administrative tasks in the school classroom and office more effective and efficient.

Equivalent courses: EAD707, ELF707

EDC 721
THESIS/PROJECT CONTINUATION

0, 0/0

EDC 722
THESIS/PROJECT EXTENDED

0, 0/0

EDL - EDUCATIONAL LEADERSHIP

EDL 500
MULTICULTURAL EDUCATION

3, 3/0

Cultural foundations of education; application of relevant findings of the social sciences to problems and issues of education in culturally plural (multiethnic) settings.

EDL 552
PUBLIC SCHOOL LAW

3, 3/0

Foundations of public school law; legal problems arising out of the operation of the public school system; New York State education law; selected cases from state and federal courts; common law principles.

EDL 559
PRINCIPLES IN CREATIVE PROBLEM SOLVING

3, 3/0

Theory and application of the Creative Problem Solving (CPS) process; practice in both individual and group uses for either personal or professional contexts; group work and active participation are expected. Equivalent courses: CRS559

EDL 560
METHODS, THEORIES, AND MODELS OF CREATIVE LEARNING

3, 3/0

Theory and research on the discipline of creative studies: developing awareness and understanding of basic principles and select definitions, models, and theories; practical application in a variety of contexts. Group interaction, discussion, and project work.

EDL 590
INDEPENDENT STUDY

1-3, 0/0

EDL 597
SPECIAL TOPICS

3-6, 0/0

EDL 602
ADMINISTRATION OF SPECIAL EDUCATION PROGRAMS

3, 3/0

Aspects of educational leadership necessary to formulate, organize, implement, and evaluate high-quality public school programs and services for students with special needs.

EDL 606
SCHOOL-COMMUNITY RELATIONS

3, 3/0

Educational relevance of involving the greater community (parents, neighborhoods, businesses, etc.) to enhance and support student achievement; organizational relationships between schools within and outside school districts; power; multicultural awareness; major opinion leaders; vision and mission articulation; interpersonal skills. Students construct a databased school-community relations plan.

EDL 607
SITE-BASED LEADERSHIP

3, 3/0

Principles of school administration and leadership; the changing role of site leadership as it relates to the dominant themes of leadership, change, shared decision making, school characteristics, standards-based education, and student achievement.

EDL 608
ADMINISTRATION OF PROGRAMS FOR THE YOUNG CHILD
3, 3/0

Role of the administrator in developing an educational environment for young children: organization, management, equipment, parent involvement, and curriculum appropriate to the developmental needs of the young and his or her family.

EDL 610
METHODS OF ADULT EDUCATION
3, 3/0

Principles, practices, evaluation, and practical application of adult learning across the full spectrum of settings in which adult education is conducted.

Equivalent courses: ADE610

EDL 612
SCHOOL BUSINESS MANAGEMENT AND FINANCE
3, 3/0

School district business management functions and financing: accounting, reporting, and auditing; program budgeting systems; investments and debt service; purchasing, inventory, and insurance; sources of income; Civil Service law and personnel; collective negotiations; auxiliary services.

EDL 630
CURRICULUM LEADERSHIP
3, 3/0

Educational leader's role in the design, implementation, and evaluation of curriculum, focusing on the principles of curriculum leadership; needs assessment, school improvement, curriculum alignment, and evaluation; leadership roles in curricular decision making are examined in relationship to current research.

EDL 631
SUPERVISION OF TEACHING
3, 3/0

Principles of supervision: classroom observation; evaluating teaching; effect of teachers' purposes and research on choice of subject matter and teaching procedures; teacher-pupil relationships; group and individual conferences; induction of new teachers; intervisitation; demonstration teaching; teachers' meetings; bulletins; workshops; evaluation of programs.

Equivalent courses: EDU631

EDL 640
CONFLICT RESOLUTION AND PEACEABLE SCHOOLS
3, 3/0

Conflict resolution in the public school context; foundations of peacemaking; emotional intelligence; teaching tolerance; cooperative learning. Presents a model for incorporating peaceable schools curricula into existing school programs.

EDL 652
SPECIAL EDUCATION LAW
3, 3/0

Laws, regulations, policy, and court cases influencing special education; due process and equal protection guarantees; Individualized Education Plan (IEP) development; Individuals with Disabilities Education Act (IDEA); Section 504 of the Rehabilitation Act of 1973.

EDL 683
FACILITATION OF GROUP PROBLEM SOLVING
3, 3/0

Prerequisite: EDL/CRS 559. Prerequisite: CRS 559. Advanced strategies for leading small groups through the Creative Problem Solving (CPS) process; mastery of facilitation techniques and skills. Students receive expert feedback on their facilitation skills as they apply creative strategies to real issues. Examines conceptual relationships between facilitation and change leadership; develops basic change leadership skills.

Equivalent courses: CRS610

EDL 686
SEMINAR IN INNER-CITY EDUCATION
3, 3/0

Nature and scope of education in the inner city: social research informing public policy on education of minorities; culture of minority children and the inner-city school; roles of the teacher and the administrator; curriculum development and the needs of inner-city students; quest for educational equity; community/parent involvement.

EDL 702
EDUCATIONAL LEADERSHIP FIELD EXPERIENCES
1, 0/0

A sequence of three 1-credit courses (upon entry into the EDL program, students are required to register for EDL 702 for three terms) designed to engage students in field experiences from the time they enter the EDL/C.A.S. program. Common core field experiences, Saturday sessions, student teacher supervision, and special involvement days. Students receive a grade upon completion of each field experience.

EDL 703
EDUCATIONAL LEADERSHIP INTERNSHIP
3, 3/0

An ongoing experience in three different pre-K-12 or community education locations and with three different field supervisors. Internship/field experiences commonly begin in the student's school/district and include two summer experiences: one in a central office, the other in a school when students are in session (e.g., summer school). Students are encouraged to complete one internship in an urban school district and at least one internship in a nonurban setting. Fall or spring terms do not have stated hour requirements. The entire internship, field experiences (EDL 702), and common core experiences should total 1,300 hours. Students enroll in EDL 703 at the end of their program, preferably after 24 credit hours have been completed. Students are encouraged to begin field and internship experiences upon admission to the program. Confer with the program adviser for details.

EDL 704
SEMINAR IN EDUCATIONAL CHANGE
3, 3/0

Issues in pre-K-12 educational leadership, change, and policy; functions of theories, practices, and philosophies in problem solving, decision making, group collaboration, and facilitation. Site-based action research project required.

EDL 705
SCHOOL DISTRICT INTERNSHIP
2, 0/0

Prerequisite: EDL703 or Instructor Permission An ongoing experience in a school district level (Central Office) location with a field supervisor. Candidates are encouraged to complete experiences in an urban school district as well as a nonurban setting. All activities are logged and matched to standards for school district leaders. The entire school district internship should total 500 hours.

EDL 706
PROBLEMS IN LEADERSHIP
3, 0/0

Problems and solutions in educational leadership, organizational change, human resource development, and school-community relations.

EDL 707
COMPUTER APPLICATIONS IN EDUCATION ADMINISTRATION
3, 3/0

Recent advances in cybernetic systems as effective tools to improve instruction, organization, and administration of education. Laboratory experiences emphasize effective use of data-processing systems rather than technical aspects of programming.

Equivalent courses: EDC707

EDL 714
PERSONNEL ADMINISTRATION IN SCHOOLS
3, 3/0

Concepts of human resource administration and problems related to personnel programs, policies, and procedures; related goals of organization and management to goals and welfare of staff members.

EDL 715
SCHOOL ADMINISTRATION AND RESEARCH
3, 3/0

A study of research as applied to school administration; major sources and review of research; individual project and administrative problem solving; proposal writing and administration.

EDU - ELEMENTARY EDUCATION

EDU 500 PRACTICUM IN CHILDHOOD EDUCATION 6, 0/0

This course is a student teaching experience in the childhood grades (1-6) at the graduate level. Supervised teaching experience five full days a week for approximately seven consecutive weeks. Effective demonstration of content knowledge, pedagogical preparation, instructional delivery, classroom management, knowledge of student development, collaboration with school professionals, and reflectivity of practice required.

EDU 501 SEMINAR FOR THE REFLECTIVE TEACHER 3, 3/0

Critical reading and interpretation of educational research literature; synthesis and assessment of educational research literature as related to the enhancement of teaching and learning processes and experiences of elementary teachers. Participants reflect on ways to investigate and improve their own practice.

EDU 509 INTRODUCTION TO THE GIFTED, TALENTED AND CREATIVE LEARNER 3, 3/0

Introduction to giftedness, talent development, and creativity in students, examining both the historical foundations and the current state of the field. Examines characteristics and identification of academically gifted, creative, and talented students from diverse backgrounds and areas of ability who learn at a pace and level that are significantly different than classmates.

Equivalent courses: CRS509, EXE509

EDU 510 PRACTICUM IN EARLY CHILDHOOD EDUCATION 6, 0/0

This course is a student teaching experience in the early childhood grades (birth-grade 3). Supervised teaching experience five full days a week for approximately seven consecutive weeks. Effective demonstration of content knowledge, pedagogical preparation, instructional delivery, classroom management, knowledge of student development, collaboration with school professionals, and reflectivity of practice required.

EDU 511 METHODS OF TEACHING ENGLISH LANGUAGE ARTS 6, 6/0

Building methodological practice from the theoretical scaffold of literacy knowledge and teaching. Students participate in classroom practice for at least 40 hours while exploring in-depth curricular, theoretical, and practical educational frameworks. Participants learn and practice the pedagogy required for teaching language arts across the curriculum; plan, implement, and evaluate lessons incorporating the New York State standards for English language arts; practice and evaluate assessment tools and processes; become reflective practitioners; and demonstrate effective techniques for instructional organization.

EDU 513 SURVEY OF READING INSTRUCTION 3, 3/0

Review of the research and literature pertaining to the basic concepts underlying reading methods, materials, testing devices, and management programs; the reading process from readiness for reading to mature, effective reading skill. Designed for either large or small group instruction.

EDU 528 FAMILIES AND EARLY CHILDHOOD PROGRAMS 3, 3/0

Emphasis on building partnerships with families in the changing context of society. Examination of model family involvement programs; working with families in poverty; integrating an antibias curriculum; active strategies for implementing formal and informal communication in the school setting.

EDU 534 THE HOLISTIC CURRICULUM: TEACHING TO BOTH SIDES OF THE BRAIN 3, 3/0

Paradigm of teaching and learning based on current neuroscience research in brain function: learning styles, memory, discipline, student motivation, attention, retention of new material. An eclectic instructional approach that encourages direct involvement and models many of the brain-compatible techniques promulgated in the theory.

EDU 535 TEACHING WRITING: B-12 3, 3/0

Student-centered process approach to teaching writing based on the premise that students need to write and, in appropriate settings, like to write. Focus on instructional strategies for the classroom, the writing process, the relationship between reading and writing, conferencing, classroom management, evaluation, writing across all areas of the school curriculum.

EDU 543 CURRICULUM FOR THE YOUNG CHILD 3, 3/0

Introduction to the profession of early childhood education. Identification and examination of appropriate curriculum, environments, materials, teaching strategies, and assessments for working with young children birth through second grade.

EDU 546 THEORY, RESEARCH, AND PRACTICE IN ENGLISH LANGUAGE ARTS INSTRUCTION 3, 3/0

Review of theory and research pertaining to the concepts underlying ELA curriculum, texts and assessment for the P-6 learner. Research investigating the connections between ELA theory and practice.

EDU 574 THE ELEMENTARY SCHOOL CURRICULUM 3, 3/0

Review of learning processes and purposes of the elementary school; curriculum development; types of curriculum organization; instructional strategies; materials; community resources; individual differences.

EDU 577 TEACHING INDIVIDUALS WITH EXCEPTIONALITIES IN THE REGULAR CLASSROOM 3, 3/0

Human behavior and development during infancy and early childhood periods; educational implications for early childhood educators and childhood development specialists.

EDU 584 LITERACY SKILLS AND THE ADULT LEARNER 3, 3/0

Prerequisite: Graduate status.

Theories, practice, curricula, and content of instruction appropriate for adult learners; the theories of Paulo Freire, Ira Shor, and Henry Giroux; collaboratively participate in the design and implementation of an action research project focusing on adult literacy.

Equivalent course: ADE584

EDU 590 INDEPENDENT STUDY 1-3, 0/0

Consult the Independent Study section of this graduate catalog for a description of how independent study can be initiated by a student, and for the requirements and regulations.

EDU 606 LITERACY INSTRUCTION FOR LINGUISTICALLY DIVERSE STUDENTS 3, 3/0

Prerequisite: EDU 513 or equivalent. Supporting literacy instruction for linguistically diverse learners: literacy learning and culture; dialects and second-language development; a model for effective instruction based on best-practices research for application in mainstream classrooms.

EDU 609
LITERACY INSTRUCTION IN THE UPPER GRADES
3, 3/0

Practical strategies to help intermediate- and secondary-level students successfully use reading in their content area studies; the reading process; student motivation; developing comprehension and thinking skills; developing meaningful vocabulary; evaluation and assessment. Emphasizes using the ideas of the subject matter as the departure point for designing teaching methods and materials.

EDU 611
LITERACY INSTRUCTION IN THE PRIMARY GRADES
3, 3/0

Implications of research in early literacy; factors influencing early success in reading and writing; process vs. product instruction; emergent literacy instruction; building a support system; focusing on print; developing decoding and comprehension strategies; appreciating effects of special needs and individualizing instruction for such needs; planning, organizing, and managing a program; assessing growth and needs.

EDU 612
DEVELOPING LITERACY THROUGH LITERATURE
3, 0/0

Implications of research and practice in the areas of correlating reading/writing instruction with children's literature; choosing appropriate methodology; familiarity with genre and instructional elements; multiple-word identification, comprehension, and writing strategies; integrating literature across the curriculum; organizing and managing a program; assessing growth and needs; involving parents.

EDU 613
ASSESSMENT OF LITERACY FOR THE CLASSROOM TEACHER
3, 3/0

Prerequisites: EDU 513 (OR EQUIVALENT) and any additional graduate-level literacy course. A diagnostic-prescriptive approach to developmental reading: analysis of reading success and causes of reading failure; strategies for identifying disabled, average, and gifted readers and students who require a modified reading program; materials and teaching skills for working with each of these classes of readers to individualize reading instruction; standardized, informal, and criterion-referenced tests; utilization of case studies and reports provided by supportive personnel; procedures for student referral; preparation of case summaries; reporting to parents.

EDU 619
PRACTICUM IN GIFTED, TALENTED, AND CREATIVE EDUCATION
3, 2/0

Prerequisite: CRS 509 AND CRS 626 AND CRS/ELF 559. Seminar experience and supervised practice of a minimum of 50 hours in gifted, talented, and creative education in a gifted-education setting with guidance from a gifted specialist. Students implement appropriate learning opportunities, collaborate with other professionals, and examine how the gifted education complements the total school program.

EDU 620
TEACHING AND LEARNING IN DIVERSE ELEMENTARY SCHOOL CLASSROOMS
3, 3/0

Culturally sensitive pedagogy and research relative to effective teaching and learning for diverse student populations: collaborating with parents; developing a community of learners; consideration of culture, power, and clan; cooperative learning in culturally diverse classrooms; contextual teaching and learning.

EDU 621
CURRICULUM DEVELOPMENT IN GIFTED, TALENTED, AND CREATIVE EDUCATION
3, 3/0

Prerequisite: EDU or EXE 509. Appropriate curriculum, materials, instructional methods, and evaluation strategies for the development of creativity and the education of individuals who demonstrate gifted behavior and talents. Examines instructional and curricular models, differentiated teaching/learning and creative/critical thinking strategies, and collaboration with the school community.
Equivalent course: CRS621

EDU 626
INTEGRATING THE CONTENT AREAS IN THE TEACHING OF YOUNG CHILDREN
3-6, 0/0

Prerequisite: EDU 543. Appropriate content in the teaching of science, mathematics, social studies, and the creative arts. Theory and practice of inquiry-based instruction, emphasizing the project approach. Focus on teaching young children pre-K through third grade. Fieldwork required in a pre-K, kindergarten, first grade or second grade classroom.

EDU 640
CONFLICT RESOLUTION AND PEACEABLE SCHOOLS
3, 3/0

Conflict resolution in the public school context; foundations of peacemaking; emotional intelligence; teaching tolerance; cooperative learning. Presents a model for incorporating peaceable schools curricula into existing school programs.
Equivalent courses: EDL640

EDU 642
LITERACY ASSESSMENT AND EVALUATION
3, 3/0

Prerequisites: EDU 513 or equivalent and instructor permission. Must have completed at least 15 credit hours in program. Causes and correlates of reading difficulty; principles of diagnosis; diagnostic techniques and instruments; diagnostic teaching; communicating with children, parents, and professionals. The first course in the clinical and remedial sequence for students in the reading teacher certification program. Fall only.

EDU 643
TEACHING STRATEGIES FOR STUDENTS WITH READING DIFFICULTIES
3, 3/0

Prerequisite: EDU 642. Planning and implementing instructional programs for students with reading difficulties: principles of remedial reading; methods and materials for remedial instruction; working with parents of children with reading problems; effective report writing. Under clinical supervision, students apply appropriate teaching techniques with student referred to the Literacy Center and write a summary report for the students' school and parents.

EDU 646
LITERACY LEADERSHIP
3, 3/0

Prerequisite: EDU 642. Corequisite: EDU 643. Instruction and experience in the various facets of being a literacy leader, including literacy coaching, program evaluation, professional development, and data compilation and analysis for the purpose of providing appropriate literacy instruction for students from birth to grade 12.
Equivalent course: EDL735

EDU 647
PRACTICUM IN READING
3-6, 3-6/0

Prerequisites: EDU 643. Integration of theoretical and practical aspects of the reading program in a supervised clinical setting. Students function as members of the Literacy Center staff and are required to develop, implement, and evaluate diagnostic and remedial reading programs for children referred to the Literacy Center. Written reports are prepared for the parents and schools of the children serviced in the Literacy Center. Summer only.

EDU 649
ADVANCED PRACTICUM IN READING
3, 3/0

Prerequisites: EDU 647 and instructor permission. Further integration of theoretical and practical aspects of the reading/writing program in a supervised clinical setting. Students extend their clinical experience to pupils at a different age level, younger or older, than those in EDU 647. Students develop, implement, and evaluate diagnostic and remedial reading/writing programs for pupils referred to the Literacy Center.

EDU 650
LITERACY THEORY AND RESEARCH
3, 3/0

Prerequisite: EDU 643. Corequisites: EDU 647 and EDU 655. Overview of literacy-related theories and models and their impact on practice and research. Discussion of recent research and seminal pieces in the field of literacy. Introduction to research designs and methods related to literacy

education. Prepares literacy specialist candidates to analyze, evaluate, and critique research.

EDU 651
THEORY, RESEARCH, AND PRACTICE IN MATHEMATICS
INSTRUCTION
3, 3/0

Prerequisite: EDU 501. Modes of instruction; development of diagnostic skills; needs of slow and rapid learners; selection and use of appropriate teaching materials in elementary school mathematics programs.

EDU 654
THEORY RESEARCH AND PRACTICE IN SOCIAL STUDIES
INSTRUCTION
3, 3/0

A study of goals in elementary social studies and their relationships to organizational concerns, approaches, methods, techniques, media and evaluation; the review and development of appropriate research for application to elementary social studies teaching.

EDU 655
TEACHING OF READING: GRADUATE SEMINAR
3, 3/0

Prerequisites: EDU 647 and instructor permission. Literacy specialist majors identify important aspects in the field that they feel need further critical review and deliberative discussion. Students and instructor jointly identify course topics, review current research and literature, conduct action research and exchange findings through a variety of formal and informal presentations. Fall only.
Equivalent course: EDU614

EDU 670
PRINCIPLES OF CURRICULUM DESIGN
3, 3/0

Basic principles of curriculum design; sources of curricula and factors that influence curricular decisions; curricular thinking of experts in the field; multiple dimensions in curriculum decision making.
Equivalent courses: EDL670

EDU 671
THEORY, RESEARCH, AND PRACTICE IN SCIENCE
INSTRUCTION
3, 3/0

Construction of science ideas in informal and formal social settings; demonstration and evaluation of exemplary science teaching methods; research focusing on elementary students' formal and naive science understanding.

EDU 672
ADVANCED EDUCATIONAL TECHNOLOGY FOR K-6
CLASSROOMS
3, 3/0

Application and integration of microcomputers in the instructional program; proficiency in the educational uses of microcomputers; tool-based software use; software evaluation; curricular integration; educational skill; process enhancement through microcomputers; communication tools; professional development; the Internet and electronic mail; issues and ethics surrounding technology in schools; lesson and unit design incorporating computer applications; technology for students with disabilities.
Equivalent course: EDC672

EDU 682
TEACHING MATH AND SCIENCE IN THE ELEMENTARY
SCHOOL
6, 6/0

Designed for those seeking certification in childhood education. Research and field experience investigating the connections between theory and practice in selecting, organizing, and presenting elementary school science, mathematics, and social studies materials and evaluating pupil progress. Students exhibit the characteristics of reflective practitioners and teachers as researchers.

EDU 690
MASTER'S PROJECT
1-3, 3/0

Prerequisites: EDU 501 and minimum 24 hours of graduate-level coursework. Production of a curriculum or research-based project in a topic of special interest to the student; project must be approved by the

instructor prior to execution. The final product must follow APA guidelines in its written form. Oral presentation required.

EDU 721
THESIS/PROJECT CONTINUATION
0, 0/0

EDU 722
THESIS/PROJECT EXTENDED
0, 0/0

ELF 721
THESIS/PROJECT CONTINUATION
0, 0/0

ELF 722
THESIS/PROJECT EXTENDED
0, 0/0

EDT - EDUCATIONAL TECHNOLOGY

EDT 500
MICROCOMPUTER SYSTEMS
3, 3/0

Basic hardware components of a computer system; operating systems software; hands-on experience using common communications, word processing, spreadsheet and database software applications.
Equivalent courses: CIS500, EDC500

EDT 590
INDEPENDENT STUDY
1-3, 0/0
Equivalent course: EDC590

EDT 594
GRADUATE WORKSHOP
3-12, 0/0
Equivalent course: EDC594

EDT 601
INSTRUCTIONAL TECHNOLOGIES
3, 3/0

Instructional uses of multimedia and the Internet; discussion of the hardware and software necessary for multimedia and Internet productions; integration of multimedia components into classroom instruction using presentation software and Web site development.
Equivalent course: EDC601

EDT 603
INSTRUCTIONAL DESIGN AND PROBLEM SOLVING WITH
TECHNOLOGY
3, 3/0

Prerequisite: EDT 601 or instructor permission. The nature of instructional problems and various approaches to solving instructional problems, including the use of technology. The systematic design and development of instruction, including the use of technology, to create effective instructional design plans, materials, and modules.
Equivalent course: EDC603

EDT 604
AUTHORING FOR EDUCATORS
3, 3/0

Prerequisite: EDT 601 or equivalent. Authoring software; hardware and software necessary for multimedia productions; creating computer-aided instruction materials for use in classroom instruction; using an authoring package to create lessons utilizing this technology; creating Web sites.
Equivalent course: EDC604

EDT 607
NETWORKING FOR EDUCATORS
3, 3/0

Prerequisite: EDT 601 or instructor permission. Planning, design, and installation of educational technology networks, particularly computer-based data networks, such as those found in K-12 and college educational environments. Networking concepts and issues, such as network topologies, network media, network protocols, network components, communication services, network cable installation tools and materials, and network software.

Equivalent course: EDC607

**EDT 610
INTEGRATING DIGITAL VIDEO TECHNOLOGY INTO THE
CLASSROOM**
3, 3/0

Prerequisite: EDT 601 or instructor permission. The roles and applications of digital video technologies in the teaching-learning process, and their integration into curriculum subject areas. Includes activities that require hands-on skills and critical thinking, such as using a camera, transferring moving images from a camera to a computer, and editing footage.

Equivalent course: EDC610

**EDT 611
TELEVISION FOR EDUCATION AND TRAINING**
3, 3/0

Prerequisites: EDT 601 Design, production, and delivery of educational television programs, including: (a) instructional design principles and practices relevant to educational television production; and (b) theoretical and technical aspects of television production, such as: camera basics, lenses, camera operation, lighting, audio, character-generated (CG) graphics, video recording, scriptwriting, storyboarding, production switching, direction, and software.

Equivalent course: EDC611

**EDT 612
EDUCATIONAL MODELS, SIMULATIONS, AND GAMES**
3, 3/0

Prerequisite: EDT 601 or instructor permission. Design and development of educational models, simulations, and games across the curriculum, using a variety of methods, media, and tools, such as system modeling software, agent-based simulation software, and various approaches to educational game design and development. Emphasis on various thinking approaches, such as systems thinking, mathematical thinking, and creative thinking.

Equivalent course: EDC612

**EDT 614
EDUCATIONAL GRAPHICS AND ANIMATION**
3, 3/0

Prerequisite: EDT 601 or instructor permission. Educational media related to visual intelligence and visual literacy. Students apply a range of methods, tools, media, and resources in the planning, design, and development of educational graphics, graphic novels, and computer-based animation products to help meet classroom needs.

Equivalent course: EDC614

**EDT 615
EDUCATIONAL HARDWARE AND SOFTWARE**
3, 3/0

Prerequisites: EDT 601. The theory, development, implementation, use, troubleshooting, and maintenance of current and emerging educational hardware (and associated software), including the personal computer, commonly-used peripheral equipment, and non-computer based hardware are examined. Students will become proficient in understanding, investigating, building, implementing, using, troubleshooting, and maintaining hardware for their own educational environments (both formal and informal), using a range of methods and tools.

Equivalent course: EDC615

**EDT 617
EDUCATIONAL TECHNOLOGY FOR INFORMAL LEARNING
ENVIRONMENTS**
3, 3/0

Prerequisites: None. Theories, methods, tools and issues relevant to effective educational exhibit design and development for informal learning environments, such as museums, art galleries, cultural centers, heritage sites, parks arboretums, science centers, etc. Students will gain knowledge and experience in the planning, design, development, implementation, and evaluation of developmentally appropriate, interactive products, exhibits, and programs for diverse audiences in these environments.

Equivalent course: EDC617

**EDT 672
CREATING AND INTEGRATING TECHNOLOGY IN THE
CLASSROOM**
3, 3/0

Increasing the effectiveness of instructional programs through the use of microcomputers: selecting microcomputer software; fulfilling the specific curricular needs of learners, and aiding the management of the instructional program.

Equivalent courses: EDC672, EDU672

**EDT 689
RESEARCH METHODS FOR MASTER'S PROJECTS AND
THESES**
3, 3/0

Prerequisites: Permission of the instructor required. The fundamentals of educational research methods and writing are introduced. The course is specifically designed for Educational Technology program students doing their master's projects. Topics include basic research methods, sources of information, interpretation of research studies, components of a research paper, and developing and writing a research paper and a literature review for a master's project. The emphasis throughout the course is on understanding and using the components and methods of research studies in education, and educational technology, in particular.

Equivalent course: EDC689

**EDT 690
MASTER'S PROJECT**
3, 3/0

Equivalent course: EDC690

**EDT 721
THESIS/PROJECT CONTINUATION**
0, 0/0

Equivalent course: EDC721

**EDT 722
THESIS/PROJECT EXTENDED**
0, 0/0

Equivalent course: EDC722

ENG - ENGLISH

**ENG 590
INDEPENDENT STUDY**
1-3, 0/0

**ENG 601
RESEARCH IN LITERATURE AND LANGUAGE**
3, 3/0

Prerequisites: Graduate status; English or English education major or appropriate premajor. Theory and practice in methods of research essential to the historical and critical analysis of literature. Should be taken early as a basis for other courses.

**ENG 610
MIEVEAL ENGLISH LITERATURE**
3, 3/0

Prerequisites: Graduate status; English or English education major or appropriate premajor. Selected writers, forms, movements, and theoretical approaches.

**ENG 614
EIGHTEENTH-CENTURY ENGLISH LITERATURE**
3, 3/0

Prerequisites: Graduate status; English or English education major or appropriate premajor. Selected writers, forms, movements, and theoretical approaches.

**ENG 615
NINETEENTH-CENTURY ENGLISH LITERATURE**
3, 3/0

Prerequisites: Graduate status; English or English education major or appropriate premajor. Selected writers, forms, movements, and theoretical approaches.

ENG 619
TWENTIETH-CENTURY ENGLISH LITERATURE
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. Selected writers, forms, movements, and theoretical approaches.

ENG 621
AMERICAN LITERATURE
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. Selected periods, writers, forms, movements, and theoretical approaches.

ENG 623
LITERATURE OF CONTINENTAL EUROPE
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. Selected periods, writers, forms, movements, and theoretical approaches.

ENG 630
CHAUCER
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. Selections from the major and minor works.

ENG 631
SHAKESPEARE
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. One aspect of Shakespeare's work (e.g., the comedies or the tragedies).

ENG 638
STUDIES IN INDIVIDUAL WRITERS
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. In-depth study of one writer, or a limited combination of writers, from English, American, or other literature.

ENG 641
STUDIES IN THE NOVEL
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. Major writers or movements or other topics in the form.

ENG 642
STUDIES IN POETRY
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. Important writers or schools.

ENG 643
STUDIES IN DRAMA
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. Dramatists or schools of drama (e.g., Renaissance, modern European).

ENG 644
IDEOLOGY AND LITERATURE
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. The study of literature from a major modern perspective. Topics in the ideological analysis of literature (e.g., the Emersonian influence, individualism, colonialism, and postcolonialism).

ENG 645
LITERATURE AND SOCIAL JUSTICE
3, 3/0
Prerequisite: Current M.A. or M.S. in English/English education candidate. The study of the intersection between literature and social justice movements throughout the world; examination of modes of literary presentation for social justice discourse.
Equivalent course: ENG633

ENG 652
LITERARY CRITICISM
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. Modern theoretical approaches to literature and its social, political, and ideological contexts.

ENG 660
CHILDREN'S LITERATURE
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. Selected topic (e.g., a survey of types and resources, classic children's literature, fantasy, realism).

ENG 670
ADVANCED LINGUISTICS
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. Selected topic (e.g., applied linguistics, social or regional dialectology, English as a second language, grammar, aspects of the history of the English language, languages of the world).

ENG 690
MASTER'S PROJECT
3, 3/0
Prerequisite: M.A. or M.S. in English candidate. Student's accumulated skills brought to focus in individual study with faculty member's approval and guidance. Investigation of a particular problem related to literature, the teaching of literature, or the English language arts resulting in a written, research-based paper.

ENG 691
ADVANCED STUDY IN THE TEACHING OF ENGLISH
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. Advanced course in the teaching of English language arts (middle school through senior high) that includes methods and materials for teaching literature, language, and writing, with emphasis on the integration of the language arts; explores current theory and research in the content, methods, materials and evaluation of English.

ENG 692
THE TEACHING OF WRITING
3, 3/0
Prerequisite: One course in advanced writing, creative writing, or journalism or instructor permission. Advanced course in the teaching of writing discussing the philosophical, psychological, and sociological foundations needed to teach writing; the relation of forms of thinking, rhetoric, and communication theory to writing; the management of a writing program; introduction to research in the teaching of writing.

ENG 693
RESEARCH IN THE TEACHING OF ENGLISH
3, 3/0
Prerequisite: Admittance to the M.S. program in secondary English. Introduction to research and research methodology. Students write a project or thesis proposal as part of class activities.

ENG 694
TEACHING LITERATURE
3, 3/0
Prerequisites: Graduate status; English or English education major or appropriate premajor. Intensive study of the theoretical and pragmatic concerns of developing a response-based, student-centered literature classroom. Students explore different types of literature and critical perspectives, and apply this knowledge in the creation of lessons and in teaching sessions.

ENG 695
MASTER'S THESIS
3-6, 0/0
Prerequisite: M.A. or M.S. in English candidate. Student's accumulated skills brought to focus in individual research with a faculty member's approval and guidance. An original inquiry into a literary question (writer, theme, ideology, etc.), or a linguistic or critical question resulting in an essay of 40-60 pages.

ENG 721
THESIS/PROJECT CONTINUATION
0, 0/0

ENG 722
THESIS/PROJECT EXTENDED
0, 0/0

ESL - ENGLISH AS A SECOND LANGUAGE

ESL 503
FOUNDATIONS OF FOREIGN AND SECOND LANGUAGE
EDUCATION
3, 3/0

Prerequisites: Graduate standing or instructor permission. Survey of the historical, psychological and social foundations of foreign and second language instruction.
Equivalent course: FLE503

ESL 516
LITERACY FOR TEACHING ENGLISH AS A SECOND
LANGUAGE
3, 3/3

Prerequisites: Graduate status or instructor permission. Teaching of English literacy to students with non-English language backgrounds. Students will develop instructional practices and materials that reflect the latest research and standards.
Equivalent course: FLE516

ESL 539
LINGUISTICS FOR TEACHERS
3, 3/0

Prerequisites: Graduate Standing; instructor permission. Introduction to language as a system, with particular focus on how linguistic understanding contributes to teaching effectiveness in foreign language courses.
Equivalent course: FLE539

ESL 540
SECOND-LANGUAGE ACQUISITION
3, 3/0

Prerequisite: Must be admitted into master of science K-12 foreign language Teaching program, or instructor permission. Important trends in second-language acquisition research and their implications for foreign language teaching.
Equivalent course: FLE540

ESL 594
TOPICS COURSE
1-3, 1-3/0

In-depth examination of rapidly and significantly changing disciplinary issues, topics, or practices; offered occasionally.

ESL 602
ASSESSMENT IN FOREIGN AND SECOND LANGUAGE
EDUCATION
3, 3/0

Prerequisites: Graduate status or instructor permission. Exploration of assessment protocols employed in foreign language and ESL education.
Equivalent course: FLE602

EXE - EXCEPTIONAL EDUCATION

EXE 500
INDIVIDUALS WITH SPECIAL NEEDS
3, 3/0

Traditional and evolving concepts of exceptionalities; characteristics of individuals with exceptionalities; implications for schools and society.

EXE 501
EDUCATIONAL ASSESSMENT TECHNIQUES FOR SPECIAL
EDUCATION
3, 3/0

Prerequisite or Corequisite of EXE 500 or completed EXE 100 or completion of the requirements for provisional/initial certification as a childhood teacher. Educational assessment used with individuals with

disabilities; purposes, models, practices, and issues. Students design tests and collect and interpret data regarding particular educational decisions.
Equivalent course: EXE513

EXE 502
CONTINGENCY MANAGEMENT
3, 3/0

Prerequisite or Corequisite of EXE 500 or completed EXE 100 or completion of the requirements for provisional/initial certification as a childhood teacher. Procedures and strategies for managing the behavior of students with special needs in educational settings; prevention of undesirable classroom behavior; assessment and remediation of behavior problems; effective delivery of instruction.
Equivalent course: EXE513

EXE 503
INSTRUCTIONAL STRATEGIES FOR INDIVIDUALS WITH MILD
DISABILITIES
3, 3/0

Prerequisite or Corequisite of EXE 500 or completed EXE 100 or completion of the requirements for provisional/initial certification as a childhood teacher. Basic curricular concepts and teaching practices related to the development and implementation of effective instructional programs for students with mild disabilities.
Equivalent course: EXE514

EXE 504
GRADUATE PRACTICUM IN SPECIAL EDUCATION
6, 0/6

Prerequisite: EXE 500 or EXE 100 or equivalent; EXE 501 or equivalent; EXE 502 or equivalent; EXE 503 or equivalent; minimum cumulative GPA of 3.0 in prerequisite coursework; program coordinator permission.. A 10-week graduate student teaching experience (unpaid) with individuals needing special education services, completed in public school classrooms, private agency classrooms, or classrooms in residential settings. Required for graduate students seeking certification as a teacher of special education.
Equivalent course: EXE580

EXE 510
COGNITION AND EMERGENT LITERACY IN YOUNG CHILDREN
WITH DISABILITIES
3, 3/0

Prerequisite: EXE 500 or EXE 100 or completion of the requirements for provisional/initial certification as an early childhood teacher. Cognitive and active learning, problem-solving skills, and academic readiness in young children with disabilities; encouraging development of literacy in young children with disabilities.

EXE 520
CURRICULUM FOR TEACHING INDIVIDUALS WITH
MODERATE AND SEVERE DISABILITIES
3, 3/0

Prerequisite: EXE500 or EXE100 or equivalent. This course is the first in a two-course sequence that addresses appropriate curriculum content for students with moderate, severe, profound, and multiple disabilities. The course emphasizes curriculum content that is both functional for an individual student, and age-appropriate, with instruction provided with same-age non-disabled peers in general education settings, the student's home school building, and home community. Topics include the integration of such services with national trends in both general educational and special education; collaboration with educational team members, including parents; identification of curriculum content and providing meaningful instruction; and facilitating change.

EXE 530
PARENT AND FAMILY INVOLVEMENT IN SPECIAL EDUCATION
PROGRAMS
3, 3/0

Prerequisite: EXE500 or EXE100 or equivalent or provisional/initial certification in early childhood teacher. Research on parent and family reactions and needs in regard to the family member with a disability; communication skills for collaborative work with parents.
Equivalent course: EXE560

EXE 534
UNDERSTANDING STUDENTS WITH BEHAVIOR PROBLEMS IN THE CLASSROOM

3, 3/0

Prerequisite: EXE500 or EXE100. Personal, social, and emotional factors related to individuals with behavioral and emotional disorders in an educational setting; methods of identification, assessment, and instructional planning.

Equivalent course: EXE508

EXE 544
MODELS OF CLASSROOM DISCIPLINE FOR STUDENTS WITH DISABILITIES

3, 3/0

Prerequisite: EXE 500 or EXE 100 or equivalent. Comprehensive coverage of a variety of models of discipline; building systems and conceptual models of total discipline that match the needs and personalities of students and are compatible with instructors' needs; discipline through activities that promote pupil motivation and classroom management.

Equivalent course: EXE508

EXE 590
INDEPENDENT STUDY

1-4, 1-4/0

EXE 612
MANAGING THE BEHAVIOR OF YOUNG CHILDREN WITH DISABILITIES

3, 3/0

Prerequisite: EXE 502 or EXE362A framework for guiding social-emotional development and responsible behavior in young children: matching the child's current social, emotional, and behavioral status with specific goals and objectives; behavior management strategies; curriculum materials, activities, and evaluation procedures.

EXE 620
ADVANCED METHODS FOR TEACHING INDIVIDUALS WITH MODERATE AND SEVERE DISABILITIES

3, 3/0

Prerequisite: EXE 520 or equivalent. Describes characteristics and needs of individuals with severe disabilities and their families and introduces methods to teach and support those individuals and families.

EXE 627
TRANSITION FROM SCHOOL TO ADULT COMMUNITY LIFE

3, 3/0

Prerequisite: EXE 500 or EXE 100 or equivalent. Strategies for planning and implementing career education curricula in secondary and postsecondary programs; transitioning students with disabilities from school programs to satisfying adult lives in the community, including supported and nonsupported competitive employment.

Equivalent course: EXE507

EXE 628
COLLABORATION AND CONSULTATIVE PRACTICES IN INCLUSIVE SETTINGS

3, 3/0

Prerequisite: EXE 500 or EXE 100 or equivalent or provisional/initial certification in an adolescence (content area grades 7-12), elementary, or special education. Skills needed to collaborate as consultants: role and responsibilities of the consultant teacher; development of strategies for enhancing effectiveness of collaborative efforts on behalf of students with special needs, their families, and their general education teachers.

Equivalent course: EXE609

EXE 631
ADAPTING LANGUAGE ARTS AND READING INSTRUCTION FOR STUDENTS WITH MILD DISABILITIES

3, 3/0

Prerequisites: Provisional/initial certification in special education or EXE 501 AND EXE 503. Designed to help special education teachers teach language arts and reading to students with special needs at the elementary and middle school levels: effective collaboration with elementary teachers, remedial teachers, and parents to promote the establishment of literate environments at home and school for students with special needs; effective use of technology as a tool of literacy learning and instruction.

EXE 632
DIRECT INSTRUCTION INTERVENTION MODELS FOR STUDENTS WITH SPECIAL NEEDS

3, 3/0

Prerequisites: Provisional/initial certification in elementary or special education and EXE 503. Current range of instructional and adaptive technologies; factors relating to curricular integration of technology within the general and special education classroom; hands-on experience with the use of instructional software, Web sites, and adaptive/assertive technology.

Equivalent course: EXE613

EXE 633
ADAPTING CONTENT AREA INSTRUCTION FOR CHILDREN AND ADOLESCENTS WITH DISABILITIES

3, 3/0

Prerequisite: EXE 503 AND Provisional/initial certification in elementary or special education. Content area adaptations for children and adolescents with disabilities; instructional planning, delivery, and assessment.

Equivalent courses: EXE532, EXE533

EXE 634
APPLIED BEHAVIOR ANALYSIS

3, 3/0

Prerequisite: EXE 500 OR EXE 100 AND EXE 502 or Provisional/initial certification in special education. Applied behavior analysis in the education of students with moderate and severe disabilities: principles and procedures for reinforcing existing behaviors, teaching new behaviors; evaluating progress through use of student performance data; contingency management procedures for including individuals with moderate and severe disabilities in regular education settings.

EXE 636
PROMOTING EFFECTIVE SOCIAL INTERACTIONS IN THE SCHOOLS

3, 3/0

Prerequisite: EXE 500 or EXE 100 OR equivalent or certification in elementary or special education. Skills needed to enhance the quantity and quality of interactions enjoyed by students with disabilities: curricular and instructional approaches that may be used to teach social skills, including those related to sexuality issues, so that students with disabilities can exhibit self-enhancing behaviors in response to societal attitudes and actions as represented by educational and community settings. Addresses ways in which participants can increase the effectiveness of their own interactions with members of the educational community.

EXE 644
ADVANCED BEHAVIOR ANALYSIS FOR CHALLENGING BEHAVIORS

3, 3/0

Prerequisites: EXE 634. Specific strategies and techniques for the analysis, treatment, and evaluation of serious behavior problems in individuals with disabilities; facilitation of generalization of student performance; appropriate research designs in applied behavior analysis.

Equivalent course: EXE675

EXE 650
ASSESSMENT OF YOUNG CHILDREN WITH DISABILITIES

3, 3/0

Prerequisite: Provisional/initial certification in early childhood special education or EXE 501 or equivalent infancy course approved by advisor. Research-based, theoretical, and practical applications of educational assessment of infants and preschoolers with disabilities or with conditions that place them at risk for becoming disabled; procedures and utility of norm-referenced, criterion-referenced, and multidimensional behavioral assessment strategies empirically validated with young children with disabilities.

Equivalent course: EXE635

EXE 652
INTERVENTION IN EARLY CHILDHOOD SPECIAL EDUCATION

3, 3/0

Prerequisite: Provisional/initial certification in early childhood special education or instructor permission. Empirically validated and practical educational interventions with infants and preschoolers with disabilities or with conditions that place them at risk for becoming disabled; best-practice intervention methods across relevant curricular domains;

organizational strategies for use in center- and home-based programs for infants/preschoolers with special needs.

Equivalent course: EXE640

**EXE 682
INSTRUCTIONAL FIELD EXPERIENCE IN SPECIAL EDUCATION
3-9, 0/3-9**

Prerequisites: EXE 504 or equivalent, minimum cumulative GPA of 3.0, and program coordinator permission. Application of theories and principles to practice in special education and related settings. Students are assigned to fieldwork settings in which program competencies will be assessed. With the approval of their advisers, students may choose to pursue experiences based on their professional goals, past experiences, and specific courses of study.

Equivalent course: EXE603

**EXE 684
GRADUATE SEMINAR IN EXCEPTIONAL EDUCATION
3, 3/0**

Prerequisites: Completion of most core courses except the research requirement; program coordinator permission. Special education issues and problems: review, analysis, and critique of articles and other materials, findings and opinions, research efforts, and approaches. Each student organizes and leads at least one discussion. Students write a formal review of the literature on a problem or issue of their choice and outline a feasible study of a related research problem.

Equivalent course: EXE605

**EXE 690
MASTER'S PROJECT
3, 0/3**

Study undertaken by one or more individuals on a problem of special interest submitted in acceptable form according to directions given by the Exceptional Education Department.

**EXE 695
MASTER'S THESIS
6, 6/0**

Prerequisites: Completion of all courses except the research requirement; program coordinator permission. Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School.

**EXE 721
THESIS/PROJECT CONTINUATION
0, 0/0**

**EXE 722
THESIS/PROJECT EXTENDED
0, 0/0**

FAR - FINE ARTS

**FAR 590
INDEPENDENT STUDY
1-6, 3/0**

Independent pursuit of the development of a particular project in the discipline of fine arts. Student, adviser, and instructor develop contractual arrangements for project completion.

**FAR 600
GRADUATE STUDIO IN DRAWING
1-3, 0/6**

Individual concentration in drawing for advanced students; emphasizes growing facility of expression, application to painting and graphic arts; tutorial relationship with instructor; related study and gallery visits; extra class assignments, including minimum studio hours equal to class hours. May be taken up to three times.

**FAR 610
GRADUATE STUDIO IN PAINTING
1-6, 0/6**

Individual activities in painting for advanced students; emphasizes personal growth and mastery of chosen media; tutorial relationship with instructor; studio and outdoor problems; use of models; related study and gallery visits; extra class assignments, including minimum studio hours equal to class hours. May be taken up to three times.

**FAR 620
GRADUATE STUDIO IN PHOTOGRAPHY
1-3, 0/6**

Advanced black-and-white and color photography (including digital format) as a form of expression, as illustration, as event recording, as a teaching aid, and as used in publications; tutorial relationship with instructor; extra class assignments, including minimum studio hours equal to class hours. May be taken up to three times.

**FAR 630
GRADUATE STUDIO IN PRINTMAKING
3-9, 0/6**

Advanced work in printmaking: relief, intaglio, planographic, serigraphic processes; related drawing and design considerations; parallel studies of graphic artists; care of equipment; tutorial relationship with instructor; extra class assignments, including minimum studio hours equal to class hours. May be taken up to three times.

**FAR 640
GRADUATE STUDIO IN SCULPTURE
3-9, 0/6**

General studio in advanced sculpture, using additive, subtractive, and constructive methods; continued personal development in such media as clay, plaster, wood, stone, metal; tutorial relationship with instructor; extra class assignments, including minimum studio hours equal to class hours. May be taken up to three times.

**FAR 690
MASTER'S PROJECT
3, 3/0**

A study undertaken by one or more individuals on a problem of special interest, aimed at making a special contribution to fine arts; may be presented, in part, as an exhibition of materials collected or prepared-including a major exhibition of artwork related to study-with theories and findings reported in an acceptable form according to directions given by the Fine Arts Department.

**FAR 695
MASTER'S THESIS
3, 0/0**

**FAR 721
THESIS/PROJECT CONTINUATION
0, 0/0**

**FAR 722
THESIS/PROJECT EXTENDED
0, 0/0**

FIN - FINANCE

**FIN 587
TOPICS IN FINANCE
1-4, 1-4/0**

In-depth examination of rapidly and significantly changing disciplinary issues, topics, or practices; offered occasionally.

**FIN 588
TOPICS COURSE
3, 3/0**

**FIN 619
RISK MANAGEMENT
3, 3/0**

Prerequisite: Graduate Standing. Prepares students to take the Financial Risk Manager (FRM) exam. Risk management: measurement of risk for financial securities, portfolios, managers, and firms; various measurements of risk as mandated by the International Basel Accord on Bank Capital Requirement and the U.S. Securities and Exchange Commission.

Equivalent course: ECO619

**FIN 622
CAPITAL MARKETS
3, 3/0**

Prerequisite: Graduate Standing. Fundamental characteristics of capital market securities: bonds, swaps, futures, options, and their combinations. Emphasizes the understanding, creation, and combination of basic

securities to create new securities (circus swaps, primes, scores), new products (portfolio insurance), and new strategies (money spreads, hedges).

Equivalent course: ECO622

FIN 630
INTERNATIONAL FINANCE
3, 3/0

Prerequisite: Graduate Standing. Applied analysis of international financial institutions, capital markets, exchange rate determination, and techniques for managing foreign exchange rate risk. Evaluate exchange rate risk management from both the institutional investor and the multinational corporate management perspectives.

Equivalent course: ECO630

FIN 645
ESTATE PLANNING AND TAXATION
3, 3/0

Prerequisite: Graduate Standing. Techniques and tax attributes of lifetime financial planning for the use, conservation, and efficient transfer of individual wealth; traditional planning techniques and major advanced methods, including various living trusts, irrevocable trusts, charitable remainder trusts, and family limited partnership.

Equivalent course: ECO645

FLE - FOREIGN LANGUAGE EDUCATION

FLE 500
TEACHING A SECOND LANGUAGE IN MIDDLE AND HIGH SCHOOLS
3, 3/0

Prerequisite: Must be admitted into master of science K-12 foreign language teaching program, or instructor permission. Study of advanced pedagogical approaches, methodologies, and techniques that apply the findings of current research to teaching practices in order to incorporate present standards for second-language learning into the classroom; emphasis on practical application and focus on the learner.

FLE 503
FOUNDATIONS OF FOREIGN AND SECOND LANGUAGE EDUCATION
3, 3/0

Prerequisites: Graduate standing or instructor permission. Survey of the historical, psychological and social foundations of foreign and second language instruction.

Equivalent course: ESL503

FLE 515
EXPLORING ENGLISH AS A SECOND LANGUAGE GRAMMAR
3, 3/0

Prerequisites: Graduate status or instructor permission. Exploration of second language grammar instruction and English grammar points known to challenge non-native speakers of English.

FLE 516
LITERACY FOR TEACHING ENGLISH AS A SECOND LANGUAGE
3, 3/3

Prerequisites: Graduate status or instructor permission. Teaching of English literacy to students with non-English language backgrounds. Students will develop instructional practices and materials that reflect the latest research and standards.

Equivalent course: ESL516

FLE 520
TEACHING A SECOND LANGUAGE AT THE ELEMENTARY LEVEL
3, 3/0

Prerequisite: Bachelor's or master's degree in foreign language education, or state certification in a language other than English grades 7-12, or instructor permission Middle school, high school, or prospective teachers of a second language extend their skills and adapt necessary teaching aids to the K-6 level.

FLE 539
LINGUISTICS FOR TEACHERS
3, 3/0

Prerequisites: Graduate Standing; instructor permission. Introduction to language as a system, with particular focus on how linguistic understanding contributes to teaching effectiveness in foreign language courses.

Equivalent course: ESL539

FLE 540
SECOND-LANGUAGE ACQUISITION
3, 3/0

Prerequisite: Must be admitted into master of science K-12 foreign language Teaching program, or instructor permission. Important trends in second-language acquisition research and their implications for foreign language teaching.

Equivalent course: ESL540

FLE 600
INTEGRATING TECHNOLOGY INTO THE SECOND-LANGUAGE CLASSROOM
3, 3/0

Prerequisite: Must be admitted into master of science K-12 foreign language Teaching program, or instructor permission. Survey of innovations in computer-assisted foreign language learning. Students gain the knowledge and skills of accomplished foreign language teachers to integrate technology into the classroom and to manage educational innovation in general.

FLE 601
ENGLISH AS A SECOND LANGUAGE LINGUISTICS
3, 3/0

Prerequisites: FLE240 or equivalent and graduate status or instructor permission. The knowledge and skills required to analyze the linguistic structures of the English language and the appropriate means to teach these structures to Limited English Proficient (LEP) students. Focus on syntactic, morphological, phonological, semantic, and discourse features of the English language.

FLE 602
ASSESSMENT IN FOREIGN AND SECOND LANGUAGE EDUCATION
3, 3/0

Prerequisites: Graduate status or instructor permission. Exploration of assessment protocols employed in foreign language and ESL education.

Equivalent course: ESL602

FLE 607
MIDDLE SCHOOL PRACTICUM IN FOREIGN LANGUAGES
6, 0/0

Prerequisites: Completion of all program requirements; completion of Oral Proficiency Interview; instructor permission. Supervised foreign language teaching in a middle school five days per week for seven weeks with additional participation in school programming required.

FLE 608
HIGH SCHOOL PRACTICUM IN FOREIGN LANGUAGE TEACHING
6, 0/0

Prerequisites: Completion of all program requirements; completion of Oral Proficiency Interview; instructor permission. Supervised foreign language teaching in a high school five days per week for seven weeks with additional participation in school programming required.

FLE 615
MULTICULTURAL EDUCATION IN THE FOREIGN LANGUAGE CLASSROOM
3, 3/0

Prerequisites: Graduate status or instructor permission. Focus will be placed on the conceptualization multicultural education and the means by which future teachers can ensure that diverse cultures are respected and taught in the foreign language classroom.

FLE 680
SEMINAR: SPECIAL TOPICS IN RESEARCH ON FOREIGN LANGUAGE LEARNING
3, 3/0

Prerequisite: Must be admitted into master of science K-12 foreign language teaching program, or instructor permission. Survey of current

research on foreign language learning. Students gain the knowledge and skills of accomplished foreign language teachers to accommodate language learners.

FLE 689
RESEARCH METHODS IN FOREIGN LANGUAGE EDUCATION
3, 3/0

Prerequisites: Graduate status or instructor permission. This course focuses on interpreting research in the field of foreign language education as well as acquiring the skills needed to engage in practical and ethical research in secondary educational settings.

FLE 690
MASTER'S PROJECT
1-3, 0/0

FLE 721
THESIS/PROJECT CONTINUATION
0, 0/0

FLE 722
THESIS/PROJECT EXTENDED
0, 0/0

FOR - FORENSIC SCIENCE

FOR 588
TOPICS COURSE
3, 3/0

FOR 612
PRINCIPLES OF FORENSIC SCIENCE
3, 3/0

Prerequisite: CHE301. Overview of forensic laboratory procedures and practices. Includes field testing, laboratory screen tests, instrumental analyses, microscopy, molecular identification, blood-alcohol analyses, identification of physical evidence, pattern evidence, crime-scene processing, evidentiary value of chemical analysis, auditing, peer-review procedures, and quality issues. Sampling techniques, data quality, error rates, blind proficiency testing, and their relevance to legal decisions.

FOR 614
FORENSIC APPLICATIONS OF INSTRUMENTAL ANALYSIS
4, 2/6

CHE403 D OR CHE680 D AND FOR612 D OR CHE312. Introduction to forensic chemical analysis using representative instrumental techniques, including spectroscopy and chromatography; emphasis on laboratory-based studies for applications of these instruments to provide extensive experience in solving various analytical issues present in forensic laboratories.

FOR 616
MICROSCOPY IN FORENSIC SCIENCE
2, 1/2

Prerequisites: FOR612 C OR CHE312. Introduction to microscopic investigations for forensic pattern evidence and trace analysis; fundamental theory, principles of operation, varieties, and capabilities of optical microscopy and applications in forensics; fundamentals and applications of transmission and scanning electron microscopy for forensic imaging at atomic-scale resolution and chemical analysis; laboratory sections for pattern analysis and trace analysis.

FOR 618
DRUG CHEMISTRY AND TOXICOLOGY
3, 3/0

CHE202 D AND (CHE612 C OR CHE312 D) AND (CHE680 C OR CHE403 D) Overview of misused and illegal pharmaceuticals, toxicology, poisons, forensic drug analysis, and illicit drug manufacture. Types, classes, and structures of illicit pharmaceuticals and the laws governing these substances; mechanism of biological activity and toxicological issues of each class; immunoassay technologies for drugs-of-abuse testing analysis; methods of forensic analysis of commonly encountered illegal drugs; and methods of surreptitious manufacture and law enforcement concerns with clandestine laboratories.

FOR 690
MASTERS PROJECT
3, 3/0

A study undertaken by one or more individuals on a problem of special interest submitted in acceptable form according to directions given by the Chemistry Department.

FOR 795
RESEARCH THESIS IN FORENSIC SCIENCE
1-12, 0/0

Individual investigation of an original problem in Forensic Science submitted in acceptable form according to directions given by the Chemistry Department and the Graduate School.

FRE - FRENCH

FRE 501
STRUCTURES OF MODERN FRENCH
3, 3/0

Provides in-and pre-service teachers the knowledge and skills required to analyze the linguistics structures of the French language and the appropriate means to teach these structures to foreign language students; focus on syntactic, morphological, phonological, semantic and discourse features of French; taught in French.

FRE 516
LITERACY FOR FRENCH TEACHERS
3, 3/0

Prerequisites: Graduate status or instructor permission. Development of literacy in French and proficiency in literacy-centered language teaching practices. Taught in French.

FRE 590
INDEPENDENT STUDY
1-3, 0/0

FRE 600
HISTORY OF THE FRENCH LANGUAGE
3, 3/0

Prerequisites: Graduate standing or instructor permission. History of the origins of modern French. Specific emphasis given to French's evolution from Vulgar Latin, social and political influences on language change, and standardization movements in the 17th century.

FRE 610
THE AGE OF ENLIGHTENMENT
3, 3/0

Prerequisites: Must be admitted into master of science K-12 foreign language teaching program (French) and have completed an appropriate undergraduate course in French literature, or instructor permission. Detailed text-based study of works by Montesquieu, Voltaire, Diderot, and Rousseau that characterized and shaped the Enlightenment.

FRE 620
GEORGE SAND SEMINAR
3, 3/0

Prerequisites: Must be admitted into master of science K-12 foreign language teaching program (French) and have completed an appropriate undergraduate course in French literature, or instructor permission. Detailed study of a selection of George Sand's romantic, feminist, pastoral, and socialist novels; excerpts from Sand's autobiography and correspondence; major critics of her works.

FRE 630
FRENCH AND FRANCOPHONE POPULAR NOVELS SINCE THE NINETEENTH CENTURY
3, 3/0

Prerequisites: Must be admitted into master of science K-12 foreign language teaching program (French) and have completed an appropriate undergraduate course in French literature, or instructor permission. Extensive reading of selected French and/or Francophone popular novels; in-depth study of how each reflects its society, epoch, and author.

FRE 640
EXPERIMENTAL LITERATURE OF THE TWENTIETH CENTURY
3, 3/0

Prerequisites: Must be admitted into master of science K-12 foreign language teaching program (French) and have completed an

appropriate undergraduate course in French literature, or instructor permission. Detailed study of experimental literature of the twentieth century, especially surrealism, the theater of the absurd, and the nouveau roman.

FRE 650
MOLIERE AND THE SUN KING
3, 3/0

Prerequisite: must be admitted into master of science K-12 foreign language teaching program, or instructor permission. Taught in French. Analysis of the life and works of Molière, the milieu for which he wrote, the conventions of 17th-century French drama, the influence of his times on his work, his legacy.

FRE 660
HAITIAN LITERATURE IN SOCIO-CULTURAL CONTEXT
3, 3/0

Prerequisites: Graduate standing or instructor permission. Taught in French. The novel as vehicle for social activism and venue for exploring the syncretic nature of Haitian identity. Exploration of the ideology, objectives, rhetoric, and literary symbolism of key Haitian activist authors.

FTT - FASHION TEXTILE TECHNOLOGY

FTT 590
INDEPENDENT STUDY
1-3, 0/0

GEG - GEOGRAPHY

GEG 503
STUDIES IN RESOURCE CONSERVATION
3, 3/0

Offered by contract only. Principles of natural resource conservation; selected problems in resource conservation: soil erosion; water pollution; destruction of forests, grasslands, and wildlife; flood control; depletion of minerals. Emphasizes conservation in the United States and New York State.

GEG 505
THE ERIE CANAL: A GEOGRAPHICAL FIELD STUDY
3, 3/0

Offered by contract only. Historical geography of the building and growth of the Erie Canal and Buffalo: growth and change of the canal system; related urban, commercial, industrial, and recent recreational development. Field trips; fees for trips. Summer only.

GEG 507
MAP READING AND ANALYSIS
3, 3/0

Offered by contract only. Map essentials; types of maps and symbols; techniques of map interpretation; classification and use of map projections; map collections.

GEG 508
STUDIES IN THE GEOGRAPHY OF NEW YORK STATE
3, 3/0

Offered by contract only. Physical landscape; cultural geography and settlement; primary economic activities; urban systems and environments; planning and future development of the state.

GEG 516
WATERSHED POLLUTION
3, 3/0

Prerequisite: CHE 101 or CHE 201 or equivalent. Important pollutants and toxic chemicals generated by anthropogenic activities. Transport, transformation, and fate of these pollutants in watersheds. Impacts of these pollutants on soil, forest, and aquatic ecosystems using specific case studies.

GEG 521
WATERSHED ANALYSIS
3, 3/0

Prerequisite: Instructor permission. Introduction to the systematic analysis of stream dynamics of watersheds and the impact of humans on these

dynamics. Physical, chemical, and biological processes in watershed management. Class discussion and class project focus on a practical watershed assessment problem.

GEG 523
BIOGEOGRAPHY
3, 3/0

Prerequisite: Graduate-level standing. Global patterns of species distributions and the historic, environmental, and biological processes underlying these patterns. Spatial patterns of nature's geographic variation at multiple levels, from individuals to ecosystems to biomes. Impacts of humans and climate change on biogeography.

GEG 525
FUNDAMENTALS OF GIS
3, 3/0

Prerequisite: Instructor permission. Geographic information systems (GIS) and computer cartography. Principles and methods of spatial data automation, models and structures of spatial databases, spatial analysis, and map display in a computerized environment. Computer mapping principles, including scales, map projections, symbolization, coloring strategy, and thematic mapping.

GEG 528
ENVIRONMENTAL ASSESSMENT AND PLANNING APPLICATIONS IN GIS
3, 3/0

Prerequisite: Instructor permission. Advanced concepts of GIS with a focus on spatial analytical applications for environmental assessment and planning. GIS theories and software implementation through hands-on practice to solve real-world environmental and planning problems.

GEG 529
ADVANCED TOICS IN GIS
3, 3/0

Prerequisites: GEG 425 or GEG 525 and GEG 390 or equivalent statistics course. Builds on topics covered in GEG 525, focusing more on digital representation of the human and physical environment, including location referencing from a human perspective, database design, data quality issues (how to identify and document errors), spatial statistical analysis using GIS, the fourth dimension (time) in GIS, and understanding spatial analysis algorithms and models. Introduces programming in a GIS environment.

GEG 565
SOIL SCIENCE AND MANAGEMENT
3, 3/0

Prerequisite: Instructor permission. Introduction to soil properties and their influence on physical, chemical, and biological processes. The role of soils in the transportation and fate of water and chemicals. The importance of soils for watershed management and protection of aquatic ecosystems.

GEG 575
PRINCIPLES OF HYDROLOGY
3, 3/0

Prerequisite: Instructor permission. Principles of hydrology and the relationship to water resources management and watershed processes. Quantifying the processes governing surface, subsurface, and atmospheric movement of water. Methods to collect and analyze hydrologic data.

GEG 585
INTERACTIVE AND WEB-BASED MAPPING
3, 3/0

Prerequisite: GEG 425, GEG 525, or equivalent introductory GIS course. Introduction to interactive and Web-based mapping. Different approaches to communicating with maps on the Internet; how to create Web-based mapping applications.

GEG 588
TOPICS COURSE
3, 3/0

GEG 590
INDEPENDENT STUDY
1-3, 0/0

**GEG 610
SEMINAR
3, 3/0**

Prerequisite: 12 hours of geography coursework or instructor permission. Investigation, examination, and discussion of topics of current interest to geographers. Topics to be announced. May be taken more than once.

**GEG 616
ATMOSPHERIC DEPOSITION MONITORING AND MODELING
3, 3/0**

Offered by contract only. Atmospheric transport and deposition of pollutants. Data interpretation, sampling protocols, monitoring and modeling techniques. Case studies.

**GEG 617
HYDROLOGIC MODELING
3, 3/0**

Prerequisite: GEG 375 or equivalent. Mathematical models that can be used to quantify hydrologic processes. Understanding the mechanistic concepts, assumptions behind the models, and the advantages and limitations associated with using the models. Value of observed data in calibrating the models and the uncertainty associated with model predictions.

**GEG 619
WETLAND HYDROLOGY AND ECOLOGY
3, 3/0**

Instructor Permission; BIO 315 or equivalent; GEG 375/575 or equivalent. Introduction to physical, chemical, and ecological processes in wetlands. Impact of wetlands on watershed hydrology and nutrient cycling. Management approaches for wetlands and key regulations that protect wetlands.

**GEG 690
MASTER'S PROJECT
3, 0/0**

Research or investigation of a particular problem, planned and carried out by the student with consultation and guidance from the instructor, submitted in acceptable form according to the directions given by the Department of Geography and Planning.

**GEG 721
THESIS/PROJECT CONTINUATION
0, 0/0**

**GEG 722
THESIS/PROJECT EXTENDED
0, 0/0**

GES - GEOSCIENCES

**GES 502
THE RESTLESS EARTH
3, 3/0**

Prerequisite: GES 101 or equivalent. Evidence for and history of continental drift, polar wandering, and sea-floor spreading; effect of such movements on ancient climates and on the evolution of certain organisms.

**GES 503
MINERALOGY AND PETROLOGY FOR EARTH SCIENCE
TEACHERS
3, 3/0**

Origin and identification of crystals, minerals, and rocks.

**GES 504
FIELD INVESTIGATIONS FOR EARTH SCIENCE TEACHERS
3, 3/0**

Measuring surface changes: techniques necessary to construct base maps and topographic maps, collect stream gauging data, and measure slopes; applications to secondary earth science classrooms. Field trips.

**GES 506
GEOLOGY OF NEW YORK STATE
3, 3/0**

Prerequisites: GES 101 and GES 102 or GES 502 or equivalent. Physiography, stratigraphy, paleontology, and glacial and economic geology of New York State; geological history of New York region; geology of selected recreational sites. Field trips.

**GES 513
ADVANCED FORENSIC GEOSCIENCE
3, 2/2**

Prerequisites: DES 101, GES 103, GES 303 or equivalents. Application of the principles of earth science to the law. Hands-on approach includes details from actual criminal cases. Forensic application of a variety of geological subjects, such as rock and mineral types, geological and topographical maps, fossils, sand, and soil.

**GES 521
ADVANCED ENVIRONMENTAL GEOCHEMISTRY
3, 3/0**

Prerequisites: GES 101, GES 103, CHE 112, or equivalents. The chemical nature of the earth. Emphasis on how natural systems work and the fundamental geochemical processes that affect the fate and transport of inorganic and organic pollutants in the environment.

**GES 525
ADVANCED HYDROGEOLOGY
3, 2/2**

Prerequisites: GES 101 or GEG 101, at least one 300-level GES course, and college algebra. The interaction of groundwater and geologic material. Occurrence and movement of groundwater, assessment of aquifer properties, and chemical interactions between groundwater and rock. Includes groundwater protection and remediation strategies, as well as mathematical principles of groundwater flow.

**GES 529
ADVANCED ENVIRONMENTAL FIELD METHODS AND
ANALYSIS
3, 2/2**

Prerequisites: GES 101 or GEG 101, at least one 300-level GES course, and college algebra. Environmental detection of contaminants. Applied study of contaminant distribution and movement. Emphasis on environmental law and regulations, hazardous chemicals, and remediation approaches used by environmental professionals.

**GES 535
ASTRONOMY FOR EARTH SCIENCE TEACHERS
3, 3/0**

Prerequisite: Prior experience or assignment to teach secondary science. The dynamic universe: solar system, stars, galaxies, and quasars. Night sky and planetarium observation.

**GES 541
METEOROLOGY FOR EARTH SCIENCE TEACHERS
3, 3/0**

Prerequisite: Prior experience or assignment to teach secondary science. Weather as a response to the unequal distribution of energy from the sun; data-collecting techniques; interpretation and predictions appropriate for secondary science education classes.

**GES 588
TOPICS COURSE
3, 3/0**

**GES 590
INDEPENDENT STUDY
1-6, 0/0**

**GES 605
PALEONTOLOGY
3, 3/0**

Prerequisite: GES 101 or equivalent; prerequisite or corequisite: GES 102 or GES 502. Basic principles of the nature and interpretation of the fossil record, with an overview of the types of organisms commonly preserved as fossils. Emphasizes practical applications of paleontology and the dynamic nature of science.

**GES 606
ADVANCED INVERTEBRATE PALEONTOLOGY
3, 3/0**

Prerequisite: GES 302 or equivalent. Methods and techniques used in the identification and classification of selected fossil invertebrate groups.

GES 607
REGIONAL GEOMORPHOLOGY OF THE UNITED STATES
3, 3/0
Prerequisite: GES 307 or equivalent. Factors and forces that led to the development of the surface features of selected areas of the United States.

GES 639
TOPICS IN MODERN ASTRONOMY
3, 3/0
Prerequisite: GES 131, GES 535, or equivalent. The expanding universe, primeval fireball, quasars, missing mass in the universe, black holes, pulsars, neutron stars, origin of the elements, current research.

GES 690
MASTER'S PROJECT
3, 0/0
Research or investigation of a particular problem, planned and carried out by the student with consultation and guidance from the instructor, submitted in acceptable form according to directions given by the Earth Sciences and Science Education Department.

GES 695
MASTER'S THESIS
3, 0/0

GES 721
THESIS/PROJECT CONTINUATION
0, 0/0

GES 722
THESIS/PROJECT EXTENDED
0, 0/0

GES 795
RESEARCH THESIS IN GEOSCIENCES
1-3, 0/0
Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School.

GLC - GREAT LAKES CENTER

GLC 535
GREAT LAKES ECOSYSTEMS
3, 3/0
Prerequisite: One semester of undergraduate or graduate-level courses in ecology or organismal biology or permission from instructor. North American Great Lakes ecosystems: evolution, physical and chemical features, biological structure, ecological interactions, ecosystem metabolism, and human dimensions.

GLC 590
INDEPENDENT STUDY
1-3, 0/0
Independent investigation into a specific area of Great Lakes environmental science; topic selected by the student in consultation with a faculty member.

GLC 600
GREAT LAKES CENTER SEMINAR
1, 1/0
Prerequisite: enrollment in Great Lakes Environmental Science Master's program. Research seminar on Great Lakes environmental science topics, including physical, biological, chemical, socio-economic, and management issues in the Great Lakes basin. Invited speakers representing various groups within the Great Lakes basin, including government agencies, academia, industry, and public interest groups, will give presentations on Great Lakes environmental science and management topics. Students present thesis proposals and research results.

GLC 688
INTERNSHIP
3, 0/0
Prerequisite: Enrollment in the Great Lakes Ecosystem Science Master's program; PSM 601 or PSM 602; and instructor permission. Guided, supervised field experiences that complement the academic program. Requires approval by the student's advisor and internship coordinator, minimum cumulative GPA of 3.0, and background of courses or experiences within the area of interest.

GLC 695
MASTER'S THESIS
3-6, 3-6/0
Research or investigation of a particular problem, planned and carried out by the student in consultation and guidance from the instructor, submitted in acceptable form according to the directions given by the Graduate School.

HEA - HIGHER EDUCATION AND STUDENT AFFAIRS ADMINISTRATION

HEA 504
COMMUNITY COLLEGE ADMINISTRATION
3, 3/0
Prerequisite: Graduate status. Purposes, functions, and characteristics of the community/two-year college: profile of student populations; historical and philosophical evolution; organization and leadership; finance, governance, and management of academic and support services; and relationship to the surrounding community.

HEA 590
INDEPENDENT STUDY
1-6, 0/0
Prerequisites: Graduate status and SPA program faculty member approval. Involvement in scholarly and special project/program development.

HEA 616
AMERICAN HIGHER EDUCATION
3, 3/0
Prerequisite: Graduate status. Evolution of American higher education: its history and philosophy; faculty and students; curriculum; governance; and the impact of race, gender, class, ability, and sexual orientation.

HEA 617
STUDENT DEVELOPMENT AND LEARNING
3, 3/0
Prerequisite: Graduate status. Assessing and meeting the needs of diverse student populations; theories of college student development and learning; college student characteristics, attributes, values, and learning styles; impact of the college experience on students; designing educational and programming interventions to directly enhance the student learning environment.

HEA 618
STUDENT PERSONNEL ADMINISTRATION
3, 3/0
Prerequisite: Graduate status. Philosophy, organization, management, and emergence of student services; evolution of specialized student affairs programs and their impact on institutional culture and campus ecology; "model" student affairs programs in four-year and two-year, public and private, religious and secular, large and small colleges and universities.

HEA 619
MANAGEMENT SYSTEMS AND LEADERSHIP IN HIGHER EDUCATION
3, 3/0
Prerequisites: Graduate status and HEA 618. Management systems theory and practice in higher education and academic and student affairs; partnerships; organizational culture; motivation and evaluation; authority and leadership. Students apply course concepts to institutional situations and problems faced in the day-to-day administration of services, programs, facilities, and staff.

HEA 620
PLANNING AND FINANCE IN HIGHER EDUCATION
3, 3/0
Prerequisites: Graduate status and HEA 618. Fundamentals of college and university finance and economics; underlying decision support systems; institutional research in the policy-making and planning processes in higher education; strategic budgeting; resource allocation; assessment; research; new trends in grant development; alternative financing; external relations.

HEA 622
TECHNIQUES I: COUNSELING AND INTERVIEWING
3, 3/0

Prerequisite: Graduate status. Intentional interviewing, conflict resolution, and self-assessment for the helping professions: self-development of the student as a counselor; basic counseling skills appropriate for effective listening, assertion, supervising, and interviewing; individual and group facilitation and problem-solving skills.

HEA 623
TECHNIQUES II: THEORIES OF COUNSELING FOR A MULTICULTURAL SOCIETY
3, 3/0

Major and evolving theories of counseling; training in counseling techniques as applied to a diverse student/client population; cultural and life-choice differences; issues of gender, age, and the needs of the learning and physically challenged; counseling interventions necessary to serve students/clients who are addicted or are experiencing loss, stress, indecision, alienation, intercultural conflict, or relationship abuse; counselor self-knowledge.

HEA 624
INTERNSHIP/PRACTICUM I
3, 3/0

Prerequisite: Graduate status. Administrative-based internship or supervised counseling practicum; seminar in contemporary issues/trends in college student personnel administration. All SPA majors are required to complete both internship/practicum courses with a total of 300 internship/practicum hours in their fieldwork.

Equivalent courses: ADE624

HEA 625
INTERNSHIP/PRACTICUM II
3, 3/0

Prerequisite: CSP 624. Administrative-based internship or supervised counseling practicum; seminar in contemporary issues/trends in college student personnel administration; critical issues in society and higher education today, utilizing the case study method of instruction. All SPA majors are required to complete both internship/practicum courses with a total of 300 internship/practicum hours in their fieldwork.

HEA 630
GROUP COUNSELING
3, 3/0

Prerequisite: Graduate status. Group counseling theory, research, and practice; group dynamics; psychological processes operating in groups; leadership styles; therapeutic interventions and techniques as applied in various staff, team, and group settings; applications of theories and methods for effective group functioning and counseling leadership.

HEA 632
VOCATIONAL DEVELOPMENT AND CAREER COUNSELING
3, 3/0

Prerequisite: Graduate status. Theories of career development and occupational decision making through the life span; career patterns and school-to-work transitions; administration of career information resources and specialized client services; computers and career-related assessment instruments for career counseling in educational and community settings.

HEA 650
STUDENT ASSESSMENT: TESTS AND MEASUREMENT
3, 3/0

Prerequisite: Graduate status. Basic appraisal techniques, including qualitative and quantitative methods, ethical principles, rating scales, survey instruments, and educational testing; descriptive statistical principles of student evaluation; uses of computers and tests in outcomes assessment, and research.

HEA 651
THE LAW AND HIGHER EDUCATION
3, 3/0

Prerequisite: Graduate status. College students and the law; academic freedom and First Amendment issues; trends in contemporary litigation; risk management; legislative, regulatory, and compliance issues; affirmative action, equal education and employment opportunity; real and simulated administrative situations; legal potentialities and implications for liability; ethical practice in serving student and institutional interests.

HEA 670
THE COLLEGE STUDENT MOVEMENT 1955-1975
3, 3/0

Overview of the history and linkages among the American college student, civil, and human rights movements of the 1960s and 1970s. This pedagogical perspective can be applied to American history, educational history, rhetorical studies, American higher education, women's studies, African American and Latino studies, and other areas concerned with the social sciences and the humanities.

HEA 689
METHODS AND TECHNIQUES OF EDUCATIONAL RESEARCH
3, 3/0

Prerequisites: SPA program major; CSP 650. Background of educational research; selection and development of research problems; sources of information and data; methods of educational research; tools and techniques of educational research; collection, treatment, application, and interpretation of research data; organizing and writing a research report. Research techniques and methods emphasize higher education and student personnel administration application.

HEA 690
MASTER'S PROJECT
3, 0/0

A study undertaken by one or more individuals on a problem of special interest submitted in acceptable form according to directions given by the Graduate School.

HEA 695
MASTER'S THESIS
3, 0/0

Individual investigation of an original problem, submitted in acceptable form according to directions given by the Graduate School.

HEA 711
SEMINAR IN TECHNIQUES OF COUNSELING AND PSYCHOTHERAPY
3, 3/0

Prerequisites: CSP 622; instructor permission. A continuation of counseling theories, processes, and techniques based on the traditions of therapeutic psychology: schools of psychoanalytic, behaviorist, cognitive, humanistic, and transpersonal psychology; current holistic trends in treatment methods and professional services; established and evolving techniques and theories of counseling and psychotherapy. Detailed focus on six to nine selected therapies.

HEW - HEALTH AND WELLNESS

HEW 520
DRUGS, SOCIETY, AND HEALTH
3, 3/0

Drug addiction: problems related to alcohol, tobacco, and other drugs of abuse affecting the individual, as well as society; drug education curricula within the public schools.

HEW 580
PARENTING/SEXUALITY EDUCATION PRACTICES IN HEALTH
3, 3/0

Prerequisite: Undergraduate coursework in health or human sexuality. Parenting/sexuality curricula and the utilization of technology in teaching health education; theories and practices in sexuality education in American school systems; appropriate course content specific to different grade levels and cultural settings.
Equivalent course: ADE580

HEW 588
TOPICS COURSE
3, 3/0

Topics course.

HEW 590
INDEPENDENT STUDY
1-6, 0/0

Equivalent courses: HPR590

HEW 605
EPIDEMIOLOGY

3, 3/0

Principles and practices in the cause, prevention, and control of diseases in various community settings: epidemiological terminology; measurement of morbidity, mortality, and fertility; descriptive and analytic epidemiology; screening; infectious disease; occupational epidemiology.

HEW 615
SEMINAR IN HEALTH EDUCATION

3, 3/0

Theories of health behavior and behavior change as they relate to current health education issues: the Health Belief Model and the Health Behavior Change Model; foundations of health education; strategies to promote lifestyle change in health education settings.

HEW 620
HEALTH EDUCATION/PROMOTION STRATEGIES

3, 3/0

Overview and application of specific health promotion/education techniques; risk assessment; individual educational plans; small-group techniques; mass media, lectures, and community organization campaigns.

HEW 690
MASTER'S PROJECT

3, 0/0

A well-planned project undertaken by one or more students, with consultation and guidance from the health and wellness faculty, concerning a health problem or issues of special interest.
Equivalent courses: HPR690, HSC690

HEW 695
MASTER'S THESIS

3, 0/0

Equivalent course: HPR695

HEW 721
THESIS/PROJECT CONTINUATION

0, 0/0

HEW 722
THESIS/PROJECT EXTENDED

0, 0/0

HIS - HISTORY

HIS 500
STUDIES IN AMERICAN HISTORY

3, 3/0

Aspects of American life: significant trends, policies, and ideas in politics, diplomacy, and national culture. Topics for study dictated by student needs and interests.

HIS 501
STUDIES IN EUROPEAN HISTORY

3, 3/0

Prerequisite: Graduate status. Cultural, political, and economic perspectives on European history.

HIS 536
THE AMERICAN ENTERPRISE SYSTEM

3, 3/0

Problems and issues relating to the free enterprise system functioning within a modern industrial society; analysis of the interrelationships of basic business concepts with the decision-making processes of corporate management; historical trends and their futuristic implications.

Equivalent course: BUS536

HIS 588
TOPICS COURSE

3, 3/0

HIS 590
INDEPENDENT STUDY

1-3, 0/0

Prerequisite: Instructor permission. Independent inquiry into a specific topical area of U.S., European, or third-world history.
Equivalent course: MST590

HIS 602
CONTEMPORARY MIDDLE EAST

3, 3/0

Characteristic cultural features of the Middle Eastern countries, with emphasis on Islam; interaction with the Western world; cultural and social changes under way; fundamentalism; problems typical of the underdeveloped nations of the world today.

Equivalent course: PSC612

HIS 603
SOCIAL AND INTELLECTUAL HISTORY OF THE UNITED STATES

3, 3/0

Social roots of thought; effect of ideas on American society; continuing patterns of thought, such as Puritanism, liberalism, democracy; contributions of intellectual leaders.

HIS 605
STUDIES IN AMERICAN COLONIAL HISTORY

3, 3/0

Comparison of colonial policies pursued by European powers in the new world; modification in a new environment of such transplanted elements as the family, church, schools, economy, and government.

HIS 606
PROBLEMS IN BRITISH HISTORY

3, 3/0

Major constitutional, political, social, and intellectual factors that shaped Britain during one of the following periods: medieval England; Tudor Stuart; the eighteenth century; Victorian; the twentieth century.

HIS 607
THE UNITED STATES IN CONTEMPORARY WORLD AFFAIRS

3, 3/0

U.S. foreign policy; United States and the United Nations; Atlantic and Pacific commitments; internal problems (defense, production, inflation, taxation).

HIS 608
REFORM AND REFORMERS IN AMERICAN CIVILIZATION

3, 3/0

Economic and social milieu creating need for reform; personality characteristics of reform leaders; structure and operations of reform movements; selected reform movements and periods of widely sponsored reform sentiment; changes wrought in American society.

HIS 609
HISTORY OF RUSSIAN DIPLOMACY

3, 3/0

Problems of Russian and Soviet foreign policy, with special emphasis on the post-revolutionary period.

HIS 610
BLACK AMERICAN HISTORY

3, 3/0

Slavery, Northern free blacks, and American racial thought from colonial era to Civil War; Northern blacks and the Civil War; black thought during Reconstruction and post-Reconstruction eras; "Black Reconstruction"; problems of American blacks from 1895 to World War II; leadership; urban migration; twentieth-century black thought; American segregationist thought.

HIS 612
AMERICAN FOREIGN POLICY IN THE FAR EAST

3, 3/0

The concept of the United States as a Pacific power; American reaction to European penetration of China; the "open door" policy and dollar diplomacy; American initiative in opening of Japan; World War I and disarmament; events leading to Pearl Harbor; World War II and American "containment" policy; the Korean War and American security pact system in the Pacific; war and peace in Southeast Asia; examination (evaluation) of the Nixon doctrine in the Pacific.

HIS 613
LATIN AMERICA IN THE TWENTIETH CENTURY
3, 3/0
Social and political conditions in Latin America in the early twentieth century; the Latin American economies and the industrial world; nationalism, reform, and revolution (1900-1945); economic, political, and international problems (from World War II to Castro); major issues in Latin America today; the United States and Latin America.

HIS 614
PROBLEMS IN CLASSICAL AND MEDIEVAL HISTORY
3, 3/0
Particular cultural, intellectual, social, economic, and historiographical problems. Consult with instructor prior to registration for information on specific topics.

HIS 615
MODERN EUROPEAN POLITICAL MOVEMENTS
3, 3/0
Function, structure, behavior, and ideological basis of major European political movements since the turn of the twentieth century.

HIS 616
PROBLEMS IN MODERN EUROPEAN HISTORY
3, 3/0
Prerequisite: Graduate status. Major trends, movements, and ideas that determined the course of European history from 1500 to the present.

HIS 617
MODERN EUROPEAN IMPERIALISM AND COLONIALISM
3, 3/0
Historical theories and social science; theories of imperialism; origins of World War I as a test case of theories; colonialism in Africa, Asia, and Oceania; colonialism in the new world; breakup of the colonial empires.

HIS 618
STRANGERS IN THE LAND: TWENTIETH-CENTURY IMMIGRANTS IN THE UNITED STATES
3, 3/0
The role of the United States in world population movements during the twentieth century; shifts in governmental policy; major groups of twentieth-century immigrants; how and why they came; patterns of settlement; American nativism; assimilation and alienation of immigrants.

HIS 620
EXCEPTIONAL HISPANIC INDIVIDUALS: HISTORICAL AND CULTURAL CONCERNS
3, 3/0
A panorama of Hispanic history and culture as it pertains to the major Hispanic populations of the United States, with a concentration on the Puerto Rican and Mexican American populations. Emphasizes the relationship of language and culture, the ultimate implications for bilingual special education, and the Hispanic exceptional child.

HIS 622
NORTH AND SOUTH AMERICAN FRONTIERS AND BORDERLANDS
3, 3/0
Prerequisites: Graduate status. Examination of frontiers in the Western Hemisphere from the beginning of European encounter and conquest in 1492 to the twentieth century. The conceptualization of the borderlands and frontiers in historical scholarship. Altering notions of gender, race and class on the frontier.

HIS 623
PROBLEMS IN U.S. HISTORY
3, 3/0
Prerequisite: Graduate status. Critical and in-depth examination of specific topics or periods in U.S. history within the context of larger interpretations of American historical development. The student may use the course to explore subjects for an eventual master's project. May be taken more than once but not with the same professor; it must be taken with another professor in a different historical specialization. Check with individual professors for topics covered in any given semester.

HIS 630
TOPICS IN ASIAN HISTORY
3, 3/0
Origins, historical development, cultural achievements, and interrelationships of the major civilizations of East Asia, Southeast Asia, and India.

HIS 640
TOPICS IN THIRD WORLD HISTORY
3, 3/0
Prerequisite: Graduate status. Social, economic, and political conditions of Africa, Asia, and Latin America under Western colonialism; reform and revolution in the non-Western world; challenge of nation-building in the third world; relations between the developed nations and the third world; cold war and the third world; the United States and the third world.

HIS 645
GENDER, SEXUALITY AND IMPERIALISM
3, 3/0
Prerequisites: Graduate status. Comparative examination of the role and impact of western and indigenous women in colonial societies; "Destructive Female" and "Black Peril" myths; miscegenation; constructions of gender and sexuality and their effect on traditional as well as colonial culture and society; women as agents of political, social and cultural reform and reaction; women in anti-colonial resistance movements.

HIS 646
TOPICS IN CANADIAN HISTORY
3, 3/0
Selected themes in Canadian history from the precontact period to the present: settlement; emergence as an independent state; nature of Canadian federalism; role in the modern world.

HIS 660
MUSEUMS AND SOCIETY
3, 3/0
Prerequisite: Graduate status. Museum theory and practice for history and education students and those in such disciplines as anthropology, art, art history, biology, and home economics. Extensive reading; illustrated lectures; exercises in museum and historical agency-related problems.

HIS 688
INTERNSHIP
1-12, 0/0
Prerequisites: Graduate status; minimum cumulative GPA of 3.0; background of courses or experience within the area of interest; permission of adviser and department chair. Guided and supervised field experiences to complement the student's academic program.
Equivalent course: MST688

HIS 690
MASTER'S PROJECT
3, 3/0
Research or investigation of a particular historical topic or issue, planned and carried out by the student in consultation with the instructor.
Equivalent course: MST690

HIS 695
MASTER'S THESIS
1-6, 0/0
Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School.

HIS 700
SEMINAR IN THE BIBLIOGRAPHY OF AMERICAN HISTORY
3, 3/0
Sources, monographs, and general histories in the bibliography of American history; collections of historical materials; historical organizations and services; analysis of selected topics and authors.

HIS 701
SEMINAR IN THE BIBLIOGRAPHY OF EUROPEAN HISTORY
3, 3/0
Sources, monographs, and general histories in the historical bibliography of selected European countries; collections of historical materials; historical organizations; problems of research; analysis of selected topics and authors.

**HIS 702
SEMINAR IN MODERN RUSSIAN AND EASTERN EUROPEAN
HISTORY**

3, 3/0

Research in the problems of the former Soviet Union, from the establishment of Marxism on Russian soil to the present, emphasizing ideological problems and Russian foreign policy, particularly toward Europe.

**HIS 703
READING SEMINAR IN HISTORY**

3, 3/0

Prerequisite: Graduate status. Readings on topics and historical periods in American, European, and third world history. Topics vary each session.

**HIS 704
RESEARCH SEMINAR IN HISTORY**

3, 3/0

Prerequisite: Graduate status. Preparation of individual research papers on some undeveloped aspect of American, European, or third world history; guidance in the location and use of source materials, bibliographical tools, and writing technique. Topics vary each session. May be taken up to three times.

**HIS 709
LOCAL HISTORY: RESEARCH METHODS AND TECHNIQUES**

3, 3/0

Preparation of individual research papers on some undeveloped aspect of local history; guidance in historical research and writing techniques. Topics vary each session. May be taken up to three times.

**HIS 711
SEMINAR IN AMERICAN HISTORY**

3, 3/0

Problems in American social, intellectual, or diplomatic history as determined by student needs and staff; historical methodology; the philosophy of history and historical writing; individual projects and seminar discussion. Topics vary each session. May be taken up to three times.

**HIS 721
THESIS/PROJECT CONTINUATION**

0, 0/0

**HIS 722
THESIS/PROJECT EXTENDED**

0, 0/0

**HIS 795
MASTER'S THESIS**

1-6, 0/0

Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School.
Equivalent course: MST795

HPR - COACHING AND PHYSICAL EDUCATION

**HPR 500
PHILOSOPHIES, PRINCIPLES, AND ORGANIZATION OF
ATHLETICS IN EDUCATION**

3, 3/0

Basic philosophy and principles of coaching interscholastic athletics; state, local, and national policies and regulations related to athletics. Partially fulfills New York State requirements for interscholastic coaching certification.

**HPR 519
SOCIAL IMPACT OF SPORT**

3, 3/0

Diverse sociological perspectives of sport: social organization of sport-related activities; formal and informal organizational networks of social status, norms, goals, and values; the impact of sport on American society.
Equivalent course: HEW519

**HPR 535
ATHLETIC TRAINING: PREVENTION AND CARE OF ATHLETIC
INJURIES**

3, 3/0

Prerequisites: Background in anatomy and physiology from BIO 308, HPR 301, or equivalent. Relationship between conditioning performance and injury prevention: techniques and programs designed to stress the importance of body conditioning needed for specific sports, as well as the possible treatment of athletic injuries. Partially fulfills New York State requirements for interscholastic coaching certification.
Equivalent course: HEW535

**HPR 588
TOPICS COURSE**

3, 3/0

**HPR 590
INDEPENDENT STUDY**

1-3, 0/0

Equivalent course: HEW590

**HPR 690
MASTER'S PROJECT**

3, 0/0

Equivalent course: HEW690

**HPR 721
THESIS/PROJECT CONTINUATION**

0, 0/0

**HPR 722
THESIS/PROJECT EXTENDED**

0, 0/0

INT - INDUSTRIAL TECHNOLOGY

**INT 590
INDEPENDENT STUDY**

1-3, 0/0

**INT 601
ENGINEERING ECONOMY**

3, 3/0

Prerequisite: Graduate status. Alternatives in processing, equipment selection, operation, and output in comparison to the various methods of production available currently or in the future.

**INT 602
OPERATIONS MANAGEMENT (ADVANCED SYSTEMS
ANALYSIS)**

3, 3/0

Prerequisite: Graduate status. Concepts and analytical techniques of comprehensive systems for operations management; quantitative methods in practical situations; modeling, computer interactive analysis, and nonsteady state situations; data streams; sthing; forecasting; cyclic components; feedback.

**INT 610
MANAGERIAL MARKETING**

3, 3/0

Prerequisite: Graduate status. Corporate and marketing strategy in a firm; the effect of product, distribution, pricing, and promotion strategy on corporate success; performance evaluation of a plan, including information gathering, analysis, and action.

**INT 611
NETWORK THEORY**

3, 3/0

Prerequisite: Graduate status. Network-based management systems; management training in network planning; timely and cost-effective supervision of tasks and activities; exposure to a variety of project configurations. Term project required.

**INT 612
QUALITY CONTROL MANAGEMENT**

3, 3/0

Prerequisite: TEC 313 or equivalent. Process control; parametric and nonparametric techniques; sampling program development; establishing

quality policy; selling quality in the organization; design of experiments; developing vendor relations; quality planning.

INT 630
WORK MEASUREMENT
3, 3/0

Prerequisites: Graduate status and TEC 405 or equivalent. Methods of work-measurement systems; development and application of time standards and incentive programs.

INT 659
INTEGRATED INDUSTRIAL SYSTEMS
3, 2/3

Prerequisite: Appropriate business systems and technical-level coursework necessary for acceptance to an industrial technology master's program. Application, justification, and implementation of integrated industrial systems: establishment of database systems; specific computerized industrial systems; integrated industrial systems; flexible manufacturing.

INT 661
MANUFACTURING PROPERTIES OF MATERIALS
3, 3/0

Prerequisites: TEC 201, TEC 311, or equivalent. Selection and classification of materials and methods of manufacturing; choosing an economical fabrication procedure based on the physical properties of the material.

INT 662
MANUFACTURING CASE STUDY
3, 3/0

Prerequisite: Graduate status. Case studies of contemporary industrial manufacturing operations: comprehensive analysis of facilities; production planning; process; production; quality control; human/machine scheduling; managed activities.

INT 670
PRODUCTION AND INVENTORY MANAGEMENT
3, 2/3

Prerequisite: Graduate status. Principles and techniques of production and inventory management; typical problems; applications.

INT 675
JUST-IN-TIME MANUFACTURING
3, 3/0

Prerequisite: Graduate status. Principles and techniques of small lot production; techniques that make small lot production economical.

INT 689
RESEARCH DESIGN AND METHODOLOGY
3, 3/0

Prerequisite: Completion of 9 credit hours of graduate study in industrial technology. Research methodology; technical proposal and project/thesis development; data collection and analysis in an industrial facility; technical presentation; skill enhancement.

INT 690
MASTER'S PROJECT
1-3, 3/0

A study undertaken by one or more individuals on a problem of special interest submitted in acceptable form according to directions given by the Technology Department.

INT 695
MASTER'S THESIS
1-6, 0/0

Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School. Problem and procedure must be approved by the student's graduate adviser, the MSIT advisory committee, and the department chair before the investigation is begun.

INT 721
THESIS/PROJECT CONTINUATION
0, 0/0

INT 722
THESIS/PROJECT EXTENDED
0, 0/0

MAT - MATHEMATICS

MAT 501
MATH FOR TEACHERS: ALGEBRA
3, 3/0

Prerequisite: 24 credit hours of undergraduate mathematics. Operational systems, number systems, groups, rings, fields, ordered fields, functions over fields, algebraic properties of the trigonometric functions.

MAT 521
MATH FOR TEACHERS: GEOMETRY
3, 3/0

Formal and informal geometry, congruence, measurement, constructions, similarity, transformations, coordinate geometry, trigonometric functions.

MAT 552
MATHEMATICS FOR TEACHERS: NUMBER THEORY
3, 3/0

Prerequisites: MAT 121 and MAT 122. Structure of the integers; divisibility; primes; congruence classes; linear congruences; Diophantine equations; Fibonacci numbers; selected topics.

MAT 581
MATHEMATICS FOR TEACHERS: PROBABILITY AND STATISTICS
3, 3/0

Prerequisites: Two semesters of calculus, MAT 325, MAT 311 or equivalent. Probability, probability distributions, sampling, design of experiments, hypothesis testing, regression, analysis of variance, nonparametric statistics.

MAT 587
TOPICS IN MATHEMATICS
3, 3/0

In-depth examination of rapidly and significantly changing disciplinary issues, topics, or practices; offered occasionally.

MAT 588
TOPICS COURSE
3, 3/0

MAT 590
INDEPENDENT STUDY
1-3, 0/0

MAT 593
MATHEMATICS FOR TEACHERS: DISCRETE MATHEMATICS
3, 3/0

Prerequisites: MAT 121 and MAT 122. Partitions; permutations; probability measure; conditional probability; vectors; matrices; operations and properties; linear programming applications.

MAT 601
TOPICS IN MODERN ALGEBRA
3, 3/0

Prerequisite: Acceptance to the mathematics master's degree program. Groups, semigroups, and monoids; homomorphisms; subgroups and cosets; Abelian groups; the symmetric group; actions and the Sylow theorems; rings, subrings, and ideals; ring homomorphisms; integral domains, division rings, and fields; ring and field extensions; Galois theory.

MAT 611
TOPICS IN REAL ANALYSIS
3, 3/0

Prerequisites: Three semesters of an undergraduate calculus sequence. Real numbers; basic topology; continuous functions; differentiation; the Riemann-Stieltjes integral; sequence and series of functions; some special functions; the Lebesgue theory.

MAT 620
MODERN GEOMETRY: SELECTED TOPICS
1-3, 1-3/0

Prerequisite: MAT 322. Foundations; axiomatic projective geometry; real projective geometry; linear projective geometry; finite geometries; non-Euclidean geometries.

MAT 631
FOUNDATIONS OF MATHEMATICS
3, 3/0

Prerequisite: 12 credit hours of mathematics coursework beyond calculus. Axiomatic method; theory of sets and infinite sets; real number system and linear continuum; the complex number system; groups and their significance for the foundations; development of various viewpoints on foundations.

MAT 651
THEORY OF NUMBERS
3, 3/0

Prerequisite: 12 credit hours of mathematics coursework beyond calculus. Counting and recording of numbers; properties of numbers; Euclid's algorithm; prime numbers; the aliquot parts; indeterminate problems and their theory; Diophantine problems; congruences; analysis of congruences; Wilson's theorem; Euler's theorem; theory of decimal expansions; the converse of Fermat's theorem; the classical construction problems.

MAT 670
DISCRETE MATHEMATICS AND FOUNDATIONS OF COMPUTER SCIENCE
3, 3/0

Prerequisite: Acceptance to the mathematics master's degree program. Problems, theorems, and discrete structures commonly used in mathematics and computer science; mathematical analysis of algorithmic/computer solutions to problems in mathematics; mathematical problems that are not solvable by computer.

MAT 681
INTERMEDIATE PROBABILITY
3, 3/0

Prerequisite: MAT 381. Advanced probability theory; combinatorial analysis; the laws of large numbers; theory of stochastic processes.

MAT 683
STATISTICAL THEORY
3, 3/0

Prerequisite: MAT 381. Probability; estimation; confidence sets; tests of hypotheses; decision theory; Bayesian methods; linear models; nonparametric methods.

MAT 690
MASTER'S PROJECT
3, 3/0

Prerequisite: Written approval of the faculty member and the department chair. Research study or investigation of a mathematical problem or topic, conducted under the guidance of a graduate faculty member of the Mathematics Department.

MAT 695
MASTER'S THESIS
3, 0/0

MAT 696
HISTORY OF MATHEMATICS
3, 3/0

Prerequisite: 12 credit hours of mathematics coursework beyond calculus. Chronological study of the development of mathematics; contributions of nations, ages, or periods; selected biographies, appraisals, and critiques; problem studies.

MAT 699
SELECTED ADVANCED TOPICS
3, 3/0

Prerequisite: Instructor permission. Seminar considering an advanced branch of contemporary mathematics such as combinatorics, game theory, automata theory, or intensive study of an advanced topic in mathematical research.

MAT 701
MODERN ALGEBRA I
3, 3/0

Prerequisite: MAT 301. Cyclic groups; transformation groups; factor groups; groups with operators; isomorphism theorems; composition series; direct products of groups; Sylow theorems; residue class rings; operations on ideals; extensions of rings.

MAT 721
THESIS/PROJECT CONTINUATION
0, 0/0

MAT 722
THESIS/PROJECT EXTENDED
0, 0/0

MAT 795
MASTER'S THESIS
3, 3/0

Individual investigation into an area of mathematics, under the guidance of a faculty member.

MCL - MODERN AND CLASSICAL LANGUAGES

MCL 590
INDEPENDENT STUDY
1-3, 0/0

MCL 690
MASTER'S PROJECT
3, 0/0

MCL 695
MASTER'S THESIS
3, 0/0

MCL 721
THESIS/PROJECT CONTINUATION
0, 0/0

MCL 722
THESIS/PROJECT EXTENDED
0, 0/0

MED - MATHEMATICS EDUCATION

MED 500
PRACTICUM I: GRADUATE FIELD EXPERIENCE IN SECONDARY MATHEMATICS EDUCATION
3, 1/4

Current school mathematics practices; related mathematics teaching periodicals and policy documents; affective and societal issues surrounding teaching; reflective observation of teaching and learning and the classroom, school, and community contexts in which they occur.

MED 501
PRACTICUM II: PRACTICE TEACHING MATHEMATICS IN THE MIDDLE SCHOOL
3, 0/6

Prerequisites: Admission to the postbaccalaureate certification program; successful completion of all coursework in the postbaccalaureate certification program; recommendation from a member of the mathematics education graduate faculty committee. Introduction to the practice of classroom teaching for the prospective middle/junior high school mathematics teacher. Field experience with classroom discipline, instructional planning, curricular issues, assessment and testing, field observation and participation, peer presentations, construction and critique of lesson plans, use of media, and research and use of teaching strategies.

MED 502
PRACTICUM III: PRACTICE TEACHING MATHEMATICS IN THE HIGH SCHOOL
3, 0/6

Introduction to the practice of classroom teaching for prospective high school mathematics teachers. Field experience with classroom discipline, instructional planning, curricular issues, assessment and testing, field observation and participation, peer presentations, construction and critique of lesson plans, use of media, and research and use of teaching strategies.

MED 524
MATHEMATICS INSTRUCTION AT THE SECONDARY LEVEL
1, 1/0
Prerequisite: Education major or mathematics education postbaccalaureate certification program major. Content, teaching methods, activities, and evaluation procedures typically used in mathematics instruction at the secondary level.

MED 588
TOPICS COURSE
3, 3/0

MED 590
INDEPENDENT STUDY
1-3, 0/0

MED 595
RESEARCH METHODS AND TECHNIQUES IN MATHEMATICS EDUCATION
3, 3/0
Prerequisite: 9 credit hours of graduate-level coursework in mathematics. Nature of educational research; problem analysis; descriptive and inferential statistics; experimental design; strategy of historical, descriptive, and experimental studies.

MED 600
CONTEMPORARY MATHEMATICS CURRICULUM DEVELOPMENT
3, 3/0
Contemporary mathematics curricular developments in the United States and other countries, and the forces that shape these developments; historical background influencing current curricular developments; mathematics curricula and their relation to school and society.

MED 601
SEMINAR IN THE TEACHING OF MATHEMATICS
3, 3/0
Techniques and topics for teaching mathematics in grades 7 through 12.

MED 602
MATHEMATICS FOR THE SECONDARY SCHOOL TEACHER: SELECTED TOPICS
3, 3/0
Prerequisite: Instructor permission. Selected topics in mathematics related to the secondary mathematics curriculum.

MED 604
TEACHING OF GEOMETRIC CONCEPTS
3, 3/0
Prerequisite: Acceptance to the mathematics master's degree program. Traditional Euclidean approach; transformational, computer-based, and integrated approaches to the teaching and learning of geometric concepts in high school; learning theory, pedagogy, mathematical models, and new developments specific to the teaching of geometric concepts in the high school curriculum.

MED 605
TEACHING OF ALGEBRAIC CONCEPTS
3, 3/0
Prerequisite: Acceptance to the mathematics master's degree program. Structuralist, intuitive, historical, and applied approaches to the teaching of concepts of algebra; learning theory, pedagogy, mathematical models, and new developments specific to the teaching of algebraic concepts in the high school curriculum.

MED 606
LOGO AND MATHEMATICS LEARNING
3, 3/0
History of LOGO language development; use of LOGO in the secondary and elementary schools; turtle graphs and the use of LOGO in problem solving. Appropriate for teachers of math and science, as well as teachers of other subjects.

MED 607
TECHNOLOGY IN MATHEMATICS EDUCATION
3, 3/0
Use and evaluation of equipment and software available for the mathematics classroom: developing classroom lessons using the

equipment and software; preparation for adoption of future developments. Students produce projects for use in their classrooms.

MED 683
PROBLEM SOLVING AND PROBLEM POSING
3, 3/0
Prerequisite: Acceptance to the mathematics master's degree program. Techniques of problem solving and problem posing in mathematics: role of teaching problem solving in the high school setting.

MED 690
MASTER'S PROJECT
1-9, 0/0
Study undertaken by one or more individuals, under the supervision of a member of the graduate mathematics faculty, on a problem of special interest submitted in acceptable form according to directions given by the Mathematics Department.

MED 721
THESIS/PROJECT CONTINUATION
0, 0/0

MED 722
THESIS/PROJECT EXTENDED
0, 0/0

MED 795
MASTER'S THESIS IN MATHEMATICS EDUCATION
3, 3/0
Individual investigation of original problem, conducted under the supervision of a member of the graduate mathematics faculty, submitted in acceptable form according to directions given by the Graduate School.

MET - MECHANICAL ENGINEERING TECHNOLOGY

MET 605
EARLY ENGINEERING INTERNSHIP
3, 1/0
Prerequisite: Instructor permission or MET graduate standing. Mechanical engineering internship; ethical manufacturing and design considerations; development of oral and written communication skills; technical/nontechnical presentation development; multidisciplinary team environment; techniques for developing and analyzing physical and mathematical models of mechanical and electromechanical systems.

MET 611
ADVANCED ENGINEERING MODELING
3, 2/2
Prerequisite: ENT 314 or instructor permission. Three-dimensional (3-D) parts and assembly creation; mathematical modeling of mechanical and electromechanical systems; parametric modeling; 3-D solid modeling; simulation of prototype behavior; introduction to finite element concepts.

MET 615
SUSTAINABILITY IN DESIGN
3, 3/0
Prerequisite: Permission of Instructor and MET Graduate Standing. Sustainable manufacturing and its relationship to larger issues of global warming, energy independence, and social impact; Sustainable manufacturing practices in for-profit enterprises; Continuous improvement using sustainability thinking; Techniques for effective communication about sustainability to internal and external audiences.

MET 620
MANAGING ENGINEERING PROJECTS
3, 3/0
Prerequisite: Permission of Instructor or MET Graduate Standing. Cost and time estimating and controlling techniques for projects. Evaluation of labor, material, equipment, and subcontract resources, scheduling techniques, earned value concepts. Measuring project percent complete. Contractual risk allocation. Project investment analysis techniques.

**MET 675
ADVANCED ENGINEERING SYSTEM DESIGN**

3, 2/2

Prerequisite: MET 605. Application of design concepts in mechanical engineering; conceptual and detailed design process stages; problem definition; design specifications; categorization of designs; modeling and analysis methods; design optimization; economics; reliability; sustainability; intellectual property; manufacturing considerations in design.

**MET 685
PROFESSIONAL EXPERIENCE INTERNSHIP**

3, 1/0

Prerequisite: MET 675. Design problem identification and solution development; critical /creative problem solving methods; written/oral presentation and interpersonal communications development; ethical considerations for product design and manufacturing processes; project management strategies.

**MET 690
MASTER'S PROJECT**

6, 6/0

**MET 695
MASTER'S THESIS**

6, 0/0

**MET 721
THESIS/PROJECT CONTINUATION**

0, 0/0

**MET 722
THESIS/PROJECT EXTENDED**

0, 0/0

MST - MUSEUM STUDIES

**MST 588
TOPICS COURSE**

3, 3/0

**MST 590
INDEPENDENT STUDY**

1-3, 0/0

Prerequisite: Instructor permission. Independent inquiry into a specific topical area of U.S., European, or third-world history.
Equivalent course: HIS590

**MST 601
THEORY AND METHOD IN MUSEUM STUDIES**

3, 3/0

Prerequisites: Museum Studies graduate student status or instructor permission. Origin of museums and the discipline of museum studies; theoretical, practical and legal aspects of museum collections. Collections care, responsibilities of museums as public institutions, object meaning, and case studies in collections repatriation. Required for Museum Studies.
Equivalent course: HIS665

**MST 621
MUSEUM REGISTRATION METHODS**

3, 3/0

Prerequisites: Museum Studies graduate student status or instructor permission. Daily challenges and excitement of working with priceless art, history, and natural history collections. Wide scope of museum registration practices, including policy development, legal aspects, technologies, and how registrars must accommodate the sometimes conflicting museum mandates of collection access and accountability.

**MST 622
RESEARCHING AND PRESENTING MUSEUM COLLECTIONS**

3, 3/0

Prerequisites: Museum Studies graduate student status or instructor permission. Methodologies utilized in museum acquisitions, collections management, multi-disciplinary interpretation, exhibition design, and textual production. Theoretical and practical methods of exhibiting objects and publishing information about museum collections. Research methodologies, digital database models, conservation and collections care, alternative

**MST 623
DIGITAL MUSEUM COLLECTIONS**

3, 3/0

Prerequisite: Museum studies graduate student status or instructor permission. Survey and practice of how museums utilize new technologies to transform internal practices and communication with varied audiences through access to collections, exhibitions, and public programs. Benefits, risks, and case studies of presenting museum collections; what the future holds for the digital museum.

**MST 624
MUSEUM ARCHIVES**

3, 3/0

Prerequisite: Museum studies graduate student status or instructor permission. Study and evaluation of record-keeping systems employed by museums and the reasoning behind them. Analysis of the intellectual and physical environments that lead to optimum records management; documentation of individual objects and collections; acquisition, preservation, interpretation, and history of the museums artifacts, records, collections, and the institution overall.

**MST 630
VISTOR EXPERIENCE IN MUSEUMS**

3, 3/0

Prerequisites: Museum Studies graduate student status or instructor permission. Current trends in visitor experience for museums. Making informed decisions on improving every aspect of visitor contact; fostering customer service; creating memorable exhibits that highlight authenticity, i.e., real environments and artifacts. Theoretical perspectives on free-choice learning and creating third-place environments.

**MST 632
TEACHING WITH HISTORIC PLACES**

3, 3/0

Prerequisites: Graduate status. Provides a foundation for those seeking to develop and implement educational materials related to historic places. Service-learning at the sites that famous people lived in, where historical events took place, and their teaching potential. Using one historic site as a case study; touring and meeting representatives to find out more about the historic place; determining the educational needs of the facility; creating curricular materials appropriate for the site.
Equivalent course: SSE698

**MST 640
MUSEUM ADMINISTRATION**

3, 3/0

Prerequisite: Museum studies graduate student status or instructor permission. Organizational behavior and leadership skills needed for effective management of a not-for-profit institution. Overview for emerging museum professionals; definition of the responsibilities, characteristics, ethical and legal guidelines for the museum administrator, from board and executive director to administrative roles at various levels within the organization.

**MST 641
REVENUE GENERATION FOR MUSEUMS**

3, 3/0

Prerequisites: Museum Studies graduate student status or instructor permission. Basics of fundraising for a not-for-profit institution; overview of fundraising strategies, board responsibilities, development staff, and volunteers in garnering financial support. Fundraising strategies including prospect development, grant writing, annual fund drives, corporate campaigns, capital campaigns. Diverse methods of fundraising examined through role-playing and other activities.

**MST 642
MUSEUM PLANNING**

3, 3/0

Prerequisite: Museum studies graduate student status or instructor permission. Core procedures and principles of strategic planning for museums. Forming a planning committee, information gathering, writing documents, and fulfilling action plans. Role of museum trustees, staff, and community stakeholders. Methods for generating creative ideas for implementation; benchmarking success and rethinking mission. Application of principles to create effective institutional plans.

MST 643
MUSEUM MARKETING AND PUBLIC RELATIONS
3, 3/0

Prerequisite: Museum studies graduate student status or instructor permission. Core components and principles of museum marketing and communication techniques including positioning, branding, and e-marketing. Methods for reaching old and new audiences through new media and creative partnerships. Resourcefulness in changing economies and aligning marketing goals to museums mission; application of principles to create effective marketing plans.

MST 660
MUSEUMS AND SOCIETY
3, 3/0

Prerequisite: Graduate status. Museum theory and practice for history and education students and those in such disciplines as anthropology, art, art history, biology, and home economics. Extensive reading; illustrated lectures; exercises in museum and historical agency-related problems.

MST 688
INTERNSHIP
1-12, 0/0

Prerequisites: Graduate status; minimum cumulative GPA of 3.0; background of courses or experience within the area of interest; permission of adviser and department chair. Guided and supervised field experiences to complement the student's academic program.
Equivalent course: HIS688

MST 690
MASTER'S PROJECT
3, 3/0

Research or investigation of a particular historical topic or issue, planned and carried out by the student in consultation with the instructor.
Equivalent course: HIS690

MST 704
RESEARCH SEMINAR IN HISTORY
3, 3/0

Prerequisite: Graduate status. Preparation of individual research papers on some undeveloped aspect of American, European, or third world history; guidance in the location and use of source materials, bibliographical tools, and writing technique. Topics vary each session. May be taken up to three times.

MST 721
THESIS/PROJECT CONTINUATION
0, 0/0

MST 722
THESIS/PROJECT EXTENDED
0, 0/0

MST 795
MASTER'S THESIS
1-6, 0/0

Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School.
Equivalent course: HIS795

MUS - MUSIC

MUS 588
TOPICS COURSE
3, 3/0

MUS 601
FOUNDATIONS OF MUSIC EDUCATION
3, 3/0

Prerequisites: Matriculation in Masters of Music Education Degree Program. An overview of the historical, cultural and philosophical foundations that have shaped and directed music education in the United States. An examination of aesthetic, sociological and psychological foundations of music education.

MUS 602
ADVANCED TOPICS IN MUSIC HISTORY
3, 3/0

Prerequisites: Matriculation in mater's of Music Education Degree Program. Central themes of historical style and compositional structure in Western art music from the Medieval to Modern eras. Investigate essential artistic values through aspects of historical context, musical analysis, and scholarly commentary, and apply those methodologies in a comprehensive research paper.

MUS 614
SOCIAL COMMENTARY IN MUSICAL THEATRE
3, 3/0

Prerequisites: Matriculation in Masters of Music Education Degree Program. Overview of the history, evolution, and impact of musical stage entertainment as it relates to specific social and political issues and causes; development of prominent stage forms in relation to their intended or unintended social contributions, moral lessons, political purposes, and artistic symbolism.

MUS 620
ADVANCED TOPICS IN MUSIC THEORY
3, 3/0

Prerequisites: Matriculation in Masters of Music Education Degree Program. Explores theoretical, aesthetic and creative aspects of a selected group of musical works that span the 14th-century up to the present day. Develop analytical tools and use critical thinking skills analyze those works through the lens of a historically, sociologically and technologically informed perspective.

MUS 625
CURRICULUM AND ASSESSMENT
3, 3/0

Prerequisite: Matriculation in Masters of Music Education Degree Program. Current trends in curriculum and assessment and the effect on music instruction. Introduces a standards- and repertoire-based curriculum model as a framework to facilitate development of pre-K-12 curriculum for ensembles and general music classes.

MUS 630
CONTEMPORARY ISSUES IN MUSIC EDUCATION
3, 3/0

Prerequisites: Matriculation in Masters of Music Education Degree Program. Students will gain an overview of the historical and intellectual foundations of contemporary music education in the United States. Additionally, students will examine curricular trends and areas of concern for music education in the United States.

MUS 640
RESEARCH METHODS IN MUSIC EDUCATION
3, 3/0

Prerequisite: Matriculation in Masters of Music Degree Program. Study of historical, descriptive, qualitative, and experimental research in music education. Students study various research methodologies and analyze example studies in order to facilitate understanding of music education research.

MUS 641
REPERTOIRE AND ENSEMBLE LEADERSHIP
3, 3/0

Prerequisites: Matriculation in Masters Of Music Education Degree Program. An in-depth overview of the leadership, conducting, and programming skills required for music educators, with added emphasis on ensemble psychology, rehearsal management, score preparation and concert planning.

MUS 721
THESIS/PROJECT CONTINUATION
0, 0/0

MUS 722
THESIS/PROJECT EXTENDED
0, 0/0

NFS – NUTRITION AND FOOD SCIENCE

NFS 500 MACRONUTRIENTS 3, 2/0

Prerequisites: Undergraduate coursework in nutrition, biochemistry, and physiology or instructor permission. Proteins, carbohydrates, and lipids, with an emphasis on metabolism and interrelationships with other nutrients.

NFS 501 MICRONUTRIENTS 3, 0/0

Prerequisites: Undergraduate coursework in nutrition, biochemistry, and physiology or instructor permission. Vitamins and minerals with emphasis on functional roles in metabolism, interrelations, and nutritional significance.

NFS 503 NUTRITIONAL INTERVENTION IN DISEASE STATES 3, 0/0

Multisystemic view of the physiologic and biochemical alterations in disease states requiring dietary modifications; current theories of dietary treatment in light of epidemiologic data, current scientific research, and factors affecting an individual's ability to carry out the necessary modifications; altered regulatory mechanisms, including interrelations of medications and other treatments with nutritional status and dietary intake.

NFS 510 NUTRITION EDUCATION 2, 2/0

Prerequisite: Instructor permission. History, important issues, and basic principles of nutrition education: instructional and evaluation methods; current research literature.

NFS 590 INDEPENDENT STUDY 1-3, 0/0

NFS 604 ADVANCES IN FOOD RESEARCH 2, 2/0

Prerequisite: Undergraduate coursework in food, food preparation, or food science or instructor permission. Current methods of foods preservation, processing, packaging, and storage; new food products; processing trends in the food industry.

NFS 605 RECENT ADVANCES IN NUTRITION 3, 3/0

Principles of nutrition: current trends and research in nutrition; application of nutrition information to specific problems of individuals and society.

NFS 615 NUTRITION EDUCATION PRACTICUM 1, 0/3

Prerequisites: NFS 510 and instructor permission. Application of the principles of nutrition education learned in NFS 510 by designing, presenting, and evaluating a nutrition education project.

NFS 620 SEMINAR IN NUTRITION 1, 1/0

Prerequisites: 6 credit hours of graduate-level coursework. In-depth exploration of topics of interest to students. Each student presents one seminar on a topic agreed upon by the instructor and the student.

NFS 634 NUTRITION AND GERONTOLOGY 2, 2/0

Nutritional aspects of aging and individuals in later maturity.

NFS 689 METHODS OF NUTRITIONAL INQUIRY 0, 1/0

Integration and application of research methods to complete projects. Students develop and present to the advisory committee proposals for their individual research projects.

NFS 690 MASTER'S PROJECT 3, 0/0

Prerequisite: Instructor permission. A project undertaken by one or more individuals on a problem of special interest, planned and carried out with consultation and guidance from the instructor.

NFS 695 MASTER'S THESIS 1-3, 0/0

Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School.

NFS 721 THESIS/PROJECT CONTINUATION 0, 0/0

NFS 722 THESIS/PROJECT EXTENDED 0, 0/0

OEC - OCCUPATIONAL EDUCATION

OEC 721 THESIS/PROJECT CONTINUATION 0, 0/0

OEC 722 THESIS/PROJECT EXTENDED 0, 0/0

PAD - PUBLIC ADMINISTRATION

PAD 500 PUBLIC ADMINISTRATION AND POLICY 3, 3/0

Public administration and related areas of public policy: personnel; comparative and historical aspects; public budgeting; organizational structure; agency management; decision making, evaluation, and policy analysis; ethical issues and administrative law.
Equivalent course: PSC500

PAD 501 COMPARATIVE PUBLIC ADMINISTRATION 3, 3/0

Prerequisite: Graduate standing or instructor permission. Cross-cultural, cross-national, and cross-institutional survey of public administration organizations and practices around the world. Administrative systems of northern nation-states and the processes of administrative change in post-Communist and southern nation-states. Evolution of administration; structure of administrative systems; personnel; budgeting; ethics and legal frameworks; role of administration in economic development; transfer of administrative skills; regional and international administrative organizations; theoretical approaches and methodological issues in understanding similarities and differences in administrative behavior.

PAD 502 ADMINISTRATIVE LAW 3, 3/0

Prerequisite: 6 credits of PAD graduate courses or instructor permission. Selected topics in administrative law examined and analyzed in depth.

PAD 560 THE AGING NETWORK 3, 3/0

Prerequisite: Graduate standing. Comprehensive overview of national and state policies, programs, and services for older adults delivered through the aging network, a collection of non-profit and public sector agencies.

PAD 587
TOPICS COURSE
1-4, 1-4/0

In-depth examination of rapidly and significantly changing disciplinary issues, topics, or practices; offered occasionally.

PAD 590
INDEPENDENT STUDY
1-3, 0/0
Equivalent course: PSC590

PAD 601
PUBLIC BUDGETING
3, 3/0

Prerequisites: Graduate status. Introduction to the principles and practices used by federal, state, and local governments in budgeting. Examination of revenue sources, borrowing, debt management, regulations, reporting, and strategic budgetary planning.

PAD 643
SUPERVISION IN THE HUMAN SERVICES
3, 3/0

Prerequisite: Graduate status. Roles and functions of supervisors in a variety of work settings; supervisory role in coordinating agency functions and meeting clients' needs; worker role and responsibilities; leadership, organizational, and systems theory; application of theory to practice situations.

Equivalent course: SWK643

PAD 645
PROGRAM PLANNING IN THE HUMAN SERVICES
3, 3/0

Use of data for program planning in human service organizations. Students design a study pertinent to human services management.

Equivalent course: SWK645

PAD 689
RESEARCH METHODS IN PUBLIC ADMINISTRATION
3, 3/0

Prerequisite: Graduate status. Design, execution, and interpretation of research for public and nonprofit managers. Quantitative and qualitative research methods, constructing and testing hypotheses, data collection and analysis, use of SPSS, ethical consequences of social science research, preparing a research report.

PAD 690
MASTER'S PROJECT
3, 0/0

Research or investigation of a particular problem, planned and carried out by student with consultation and guidance from instructor.

Equivalent course: PSC690

PAD 699
DATA ANALYSIS AND PRESENTATION
3, 3/0

Prerequisite: PAD 689 or instructor permission. Preparation for advanced research and data analysis in public administration and nonprofit management.

PAD 712
MANAGING PROGRAM EVALUATION
3, 3/0

Management and technical skills required for program evaluation in the public and private sectors; establishing evaluation standards and criteria; developing evaluation instruments and designs; statistical analysis of evaluation data; computer-based statistical analyses; report preparation and follow-up studies.

Equivalent courses: BUS712, EDF712, SPF712, SWK712

PAD 721
THESIS/PROJECT CONTINUATION
0, 0/0

PAD 722
THESIS/PROJECT EXTENDED
0, 0/0

PAD 735
ADMINISTRATIVE PRACTICES IN PUBLIC AND NONPROFIT SECTORS
3, 3/0

Prerequisite: Graduate status. Public and nonprofit management and organizational theories, policies, and practices. History of public and nonprofit management systems; public and nonprofit organizational structures; distinctions and similarities in mission, values, and cultures. Effective management and leadership in public and nonprofit organizations; the political environment, power, and policy affecting public and nonprofit management; organizational goals and effectiveness; planning, strategy, and decision making in the public and nonprofit sectors.

PAR - PERFORMING ARTS

PAR 721
THESIS/PROJECT CONTINUATION
0, 0/0

PAR 722
THESIS/PROJECT EXTENDED
0, 0/0

PHI - PHILOSOPHY

PHI 601
ETHICS IN PROFESSIONAL APPLIED SCIENCES
3, 3/0

Ethical theories and professional ethics in the applied sciences. Ethical reasoning and its application to practical problems. Ethical issues in fields such as computer science, engineering, genetics, and ecology.

PHY - PHYSICS

PHY 500
PHYSICS EDUCATION RESEARCH SEMINAR
3, 3/0

Designed for practicing or future high school physics teachers. Includes reading and discussion of current research in physics education, evaluation and discussion of the application of this research to the New York State physics core curriculum, and the exploration and practice of assessment techniques in high school physics.

PHY 502
INITIAL PHYSICS TEACHING EXPERIENCE FOR ALTERNATIVE CERTIFICATION
3-6, 3/0

Prerequisite: Acceptance to the alternative certification in physics program. Full-time physics teaching with college supervision and school supervision: lesson and unit design, classroom management, designing and implementing student assessment, participation in school community.

PHY 507
ENERGY AND FORCE INTERACTIONS FOR K-8 TEACHERS
3, 1/4

Designed for elementary teachers to better understand physics and the nature of science. Focus on interactions and energy: energy, force, friction, gravity, magnetic fields, light, and electricity. Not appropriate for students with extensive physics background.

PHY 510
PHYSICS FOR HIGH SCHOOL TEACHERS: CONTENT & PEDAGOGY
6, 3/3

Use of inquiry-based teaching techniques to develop concepts central to the New York State physics core curriculum. Use of mathematical analysis, scientific inquiry, and engineering design to pose questions, seek answers, and develop strategies to achieve these goals in the physics classroom with adolescent learners.

**PHY 511
COMPUTATIONAL PHYSICS FOR TEACHERS**

3, 3/0

Prerequisites: PHY111, PHY112 and PHY 213 or instructor permission. Study of problems from various physics content areas using a variety of computational tools (e.g. spreadsheets, computer programming) and techniques (Newton's method, Runge-Kutta). Physical systems including harmonic oscillator with damping, gravitational force (orbits, central force problem), electric and magnetic field and potential calculations, thermal and statistical physics, motion with air friction, wave motion, quantum mechanical tunneling and scattering. Pedagogical issues associated with using computation in the high school classroom.

**PHY 518
WAVE PHENOMENA AND OPTICS**

3, 3/0

Wave phenomena, including types, motion, interaction, and propagation; diffraction and interference; geometrical optics. Emphasizes research-based profiles of student conceptual difficulties and instructional strategies to remedy them.

**PHY 520
MODERN PHYSICS**

3, 3/0

Major developments in twentieth-century physics and how they changed our understanding of the nature of space and time and the structure of matter. Application of physics education research to teaching relativity and quantum physics in a high school physics course.

**PHY 521
EXPERIMENTS IN MODERN PHYSICS**

3, 0/6

Prerequisites: PHY520 or equivalent. Hands-on activities and advanced experiments chosen from the areas of optics, modern physics, nuclear physics, and solid state physics with the goals of learning modern laboratory techniques, data analysis, and lab report writing.

**PHY 522
PHYSICS OF ENERGY SOURCES FOR TEACHERS**

3, 2/2

Prerequisites: PHY 107 and PHY 108. Different energy sources, their global supply, and physical laws governing their present use in the world. Topical energy sources and physical laws for the hydrogen fuel cell, solar cell and wind turbine; using them in applications and devices.

**PHY 525
NUCLEAR AND PARTICLE PHYSICS**

3, 3/0

Major developments in nuclear and particle physics in the twentieth century, culminating in the standard model. Discussion of how these developments changed our understanding of the structure of matter.

**PHY 588
TOPICS COURSE**

3, 3/0

**PHY 590
INDEPENDENT STUDY**

1-3, 0/0

**PHY 620
POWERFUL IDEAS AND QUANTITATIVE MODELING: FORCE,
MOTION, AND ENERGY**

6, 3/3

Designed for practicing or future high school physics teachers. Activities and laboratory experiences develop ideas in force, motion, and energy. Exemplary pedagogical techniques are modeled and examined.

**PHY 622
POWERFUL IDEAS AND QUANTITATIVE MODELING:
ELECTRICITY AND MAGNETISM**

6, 3/3

Designed for high school physics teachers. Activities and laboratory experiences develop ideas in electricity and magnetism. Exemplary pedagogical techniques are modeled and examined.

**PHY 690
MASTER'S PROJECT**

1-3, 0/0

Study of a problem of special interest, preapproved by the physics graduate committee and submitted in acceptable form according to directions given by the Physics Department.

**PHY 721
THESIS/PROJECT CONTINUATION**

0, 0/0

**PHY 722
THESIS/PROJECT EXTENDED**

0, 0/0

PLN - PLANNING

**PLN 560
ENVIRONMENTAL IMPACT ASSESSMENT**

3, 3/0

Prerequisite: Instructor permission. Legislation and technical procedures involved with the development of environmental impact statements (EIS) and environmental assessments (EA). Practical experience in conducting an EA and writing an EIS. Includes one field trip.

**PLN 588
TOPICS COURSE**

3, 3/0

**PLN 590
INDEPENDENT STUDY**

1-3, 0/0

**PLN 610
SEMINAR**

3, 3/0

Prerequisite: 12 credit hours of geography or planning coursework or instructor permission. Investigation, examination, and discussion of topics of current interest to geographers and planners. Topics to be announced.

**PLN 690
MASTER'S PROJECT**

3, 0/0

Research or investigation of a particular problem, planned and carried out by the student in consultation and guidance from the instructor, submitted in acceptable form according to the directions given by the Department of Geography and Planning.

**PLN 721
THESIS/PROJECT CONTINUATION**

0, 0/0

**PLN 722
THESIS/PROJECT EXTENDED**

0, 0/0

PSC - POLITICAL SCIENCE

**PSC 500
PUBLIC ADMINISTRATION AND POLICY**

3, 3/0

Public administration and related areas of public policy: personnel comparative and historical aspects; public budgeting; organizational structure; agency management; decision making, evaluation, and policy analysis; ethical issues and administrative law. Equivalent course: PAD500

**PSC 588
TOPICS COURSE**

3, 3/0

**PSC 590
INDEPENDENT STUDY**

1-3, 0/0

Equivalent course: PAD590

PSC 605
POLITICS OF THE THIRD WORLD
3, 3/0

Leading issues and challenges found in the developing world. Examination of development in terms of democratization; religion and politics; cultural pluralism, ethnic and national identity, and nationalism; women and development; agrarian reform; urbanization; revolution; the military; political economy; and globalization. Special focus on development aid, trade, and the UN Millennium Goals.

PSC 606
INTERNATIONAL RELATIONS
3, 3/0

Theories of international relations; statecraft and diplomacy; international organizations and international law; peace and security.

PSC 607
AMERICAN GOVERNMENT AND POLITICS
3, 3/0

Foundations of the American constitutional system; federalism, separation of powers, and role of the states; political parties, pressure groups, and electoral processes; the president, bureaucracy, Congress, and courts.

PSC 612
CONTEMPORARY MIDDLE EAST
3, 3/0

Characteristic cultural features of the Middle Eastern countries, with emphasis on Islam; interaction with the Western world; cultural and social changes under way; fundamentalism; problems typical of the developing countries.

Equivalent course: HIS602

PSC 690
MASTER'S PROJECT
3, 0/0

Research or investigation of a particular problem, planned and carried out by student with consultation and guidance from instructor.

Equivalent course: PAD690

PSC 721
THESIS/PROJECT CONTINUATION
0, 0/0

PSC 722
THESIS/PROJECT EXTENDED
0, 0/0

PSM - PROFESSIONAL SCIENCE AND MATHEMATICS

PSM 587
TOPICS IN APPLIED AND PROFESSIONAL MATHEMATICS AND SCIENCE
1-3, 1-3/0

In-depth examination of topics related to the managerial applications of math and science in the real world; offered occasionally.

PSM 601
PROJECT MANAGEMENT FOR MATH AND SCIENCE PROFESSIONALS
3, 3/0

Prerequisites: Graduate standing. Current practices in project management as applied to math and science projects. Hands-on experience with the skills, tools, and techniques required in different phases of a project's life cycle, including project selection, project planning, project staffing and organization, task scheduling, project scope management, budgeting and progress reporting, risk management, quality management, project communications, and use of appropriate project management software tools. Techniques for communicating and motivating teams throughout the project life cycle. Emphasis on team building and practicing project management techniques through the use of science-based cases.

PSM 602
COMMUNICATION STRATEGIES FOR MATH AND SCIENCE PROFESSIONALS
3, 3/0

Prerequisites: Graduate-level standing. Intend to develop strategic thinking about communication of quantitative information and improve writing, presentation, and interpersonal communication skills for mathematicians and scientists in a variety of settings (i.e. industrial, managerial, academic, research). Includes a review of "best practices" or guidelines that have been derived from both research and experience. Students will put those guidelines into practice, using a workshop format that will rely heavily on discussion and in-class exercises.

PSY - PSYCHOLOGY

PSY 590
INDEPENDENT STUDY
1-3, 0/0

PSY 690
MASTER'S PROJECT
3, 3/0

Research or investigation of a specific psychological topic, planned and carried out by the student with the approval, consultation, and guidance of a graduate faculty member of the Psychology Department.

PSY 715
MANAGEMENT PRACTICES AND TECHNIQUES
3, 3/0

Prerequisites: PSY 101 and instructor permission. Major management theories and factors affecting organizational systems; managing conflict and negotiating agreements; effective interpersonal skills for managers; defining problems and generating creative alternatives; types and sources of information needed by managers; relation of leadership style to staff productivity and development; relating effectively to upper-level management.

PSY 721
THESIS/PROJECT CONTINUATION
0, 0/0

PSY 722
THESIS/PROJECT EXTENDED
0, 0/0

REL - RELIGIOUS STUDIES

REL 590
O.T. AND EVOLUTION
3, 3/0

SAF - SAFETY STUDIES

SAF 560
DRIVER AND TRAFFIC SAFETY EDUCATION
6, 6/30

Prerequisites: Acceptable driving record; valid New York State driver's license; minimum of two years' driving experience. Classroom and behind-the-wheel instruction; instructional methods/techniques; setting up approved programs; three-hour pre-licensing course content; theory and maintenance of the automobile; devices and aids for teaching in the classroom and automobile. Successful completion satisfies State Education Department requirements for provisional approval to teach driver and traffic safety education in all secondary schools, colleges, and universities; also qualifies an individual to teach in a commercial driving school.

SAF 565
TRENDS AND PROBLEMS IN DRIVER AND TRAFFIC SAFETY EDUCATION
3, 3/0

Prerequisites: SAF 417 and SAF 425. Teaching, administration, and supervision of driver education and traffic safety; programs, methods, and materials; resource people and agencies; critical analysis of existing

procedures; discussion of problems. Lectures and/or field trips for expert information from the field. Required for permanent approval of driver education instructors.

SCI - SCIENCE

SCI 501 HISTORY OF SCIENCE FOR SCIENCE TEACHERS 3, 3/0

Historic development of major scientific discoveries and achievements within a narrow range that directly impacts the teaching of science. Contextual forces that affect science discovery. Contributions from other disciplines such as mathematics, technology, navigation, military actions and engineering.

SCI 502 SECONDARY SCIENCE EDUCATION TEACHING: THEORY, CONTENT AND PEDAGOGY 3, 2/0

Prerequisites: EXE 500, EDF 503, EDU 609, SCI 664 or equivalent; may be taken concurrently. Acceptance into the graduate program. Use of inquiry-based teaching techniques in middle and high school science classrooms to develop candidates' science teaching skills. Current directions of research in science education. Teaching, curriculum design and lesson planning strategies and techniques, classroom management, lab safety, science resources, the nature of science, assessment, unit and lesson planning, classroom management, and professional dispositions for teachers. Should be taken the semester before student teaching.

SCI 503 INITIAL SCIENCE TEACHING EXPERIENCE 6, 3/3

Prerequisite: SCI 501. Full-time science teaching at the middle and high school level with college supervision and school supervision: lesson and unit design, assessment, classroom management, designing and implementing student assessment, and participation in school community.

SCI 505 INQUIRY AND URBAN SCIENCE TEACHING 6, 4/6

Prerequisite: Acceptance to the graduate science education program. Instructional strategies for early adolescents including inquiry as content and a teaching approach; classroom management; interdisciplinary team approaches; cultures of urban, suburban, and rural middle schools. Includes field experience at the middle school level.

SCI 521 LABORATORY TECHNIQUES FOR ELEMENTARY SCHOOL TEACHERS 3, 3/0

Appropriate laboratory exercises designed to acquaint the elementary teacher with the subject matter, laboratory equipment, and techniques necessary to effectively teach elementary science.

SCI 524 SECONDARY SCIENCE INSTRUCTION 1, 1/0

Content, teaching methods, activities, and evaluation procedures typically included in secondary science classes. Designed to aid exceptional education resource and consulting teachers at the secondary level in their work with science content teachers.

SCI 527 CURRENT TOPICS IN SCIENCE 3, 3/0

Prerequisites: 6 credit hours each in two science areas. Implications of science research for present and future living; implications of research in science for the secondary school science curriculum.

SCI 537 ENERGY EDUCATION IN THE PRECOLLEGE CLASSROOM 3, 3/0

Current domestic energy issues: energy laws, energy conservation, fossil fuels, nuclear power, and the renewable energy options (solar, wind, biomass, etc.); existing energy curricula (units, films, games); appropriate classroom and field energy activities for children. Designed for in-service, precollege teachers.

SCI 540 LOCAL ENVIRONMENTAL PROBLEMS SEMINAR 3, 3/0

In-depth discussions of environmental problems on the Niagara Frontier by local experts, designed to supply in-service science teachers and others concerned with the local environment with current local environmental information.

SCI 545 LITERACY FOR TEACHING SCIENCE 3, 2/2

Prerequisites: Acceptance into a graduate science teacher degree program. Study of literacy related to secondary science. Promotion of literacy; action research project on identifying literacy levels of students; planning literacy activities based on data collection.

SCI 550 PROFESSIONAL DEVELOPMENT IN SCIENCE EDUCATION 1, 1/0

Designed to mentor new and practicing teachers as they work to increase their science content and pedagogy skills. In-depth discussions around new and developing teacher issues. Topics include goal setting, best-practices, standards, testing, mentoring. May be taken multiple semesters.

SCI 587 TOPICS IN SCIENCE EDUCATION 1-6, 1-6/0

In-depth examination of important disciplinary issues, topics, or practices in science education; offered occasionally.

SCI 588 TOPICS COURSE 3, 3/0

SCI 590 INDEPENDENT STUDY 1-3, 0/0

SCI 598 TOPICS COURSE 1, 1/0

SCI 628 SEMINAR IN SECONDARY SCIENCE EDUCATION 3, 3/0

Recent research in educational psychology and its application for science teaching; contemporary trends in science education; sociological and philosophical implications of science; recent research in science education; issues identified by students enrolled in class. Required in all graduate science secondary education programs.

SCI 631 CURRICULAR TRENDS IN SCIENCE TEACHING IN THE ELEMENTARY SCHOOL 3, 3/0

Recent curriculum developments in elementary school science. Students work with elementary science curricular material in a workshop atmosphere to understand the philosophies, objectives, and historical events leading to their development. Students develop and share practical classroom adaptations of these materials.

SCI 632 CURRICULAR TRENDS IN SCIENCE TEACHING IN THE SECONDARY SCHOOL 3, 3/0

Prerequisite: One year of teaching science as a subject, assignment to an administrative position with responsibility for science curriculum, or instructor permission. Recent curriculum developments, philosophies, objectives, and materials; current understandings of the psychology of inquiry; historical events leading to changes in curriculum. Required in all graduate secondary education programs.

SCI 635 NATURE OF SCIENCE 3, 3/0

Prerequisite: 9 hours of graduate study including SCI 628. Nature of science involving basic values and beliefs that make up the scientific worldview; how scientists go about their work; general culture of the

scientific enterprise. Embedding scientific knowledge into lessons and activities as a necessary part of science teaching at all levels.

SCI 650
CURRICULAR RESEARCH TOPICS IN SCIENCE
3, 3/0

Prerequisites: Acceptance into M.S.ED: Science Education graduate program. Nature of science educational research: problem analysis; descriptive and inferential statistics; experimental design; strategy of historical, descriptive, and experimental studies. Analysis of contemporary educational research.

SCI 664
TEACHING SCIENCE WITH TECHNOLOGY
3, 2/3

Prerequisite: Acceptance to the graduate science education program. Development and integration of a variety of visual and audio technologies for the creative enhancement of visual and auditory communication in the science classroom. Specialized technology needs of science teachers.

SCI 677
INITIAL MIDDLE SCHOOL SCIENCE TEACHING EXPERIENCE
6, 0/0

Prerequisites: SCI 502. Assignment to a supervised middle school science teaching placement for five full days a week for 8 consecutive weeks. Candidates effectively demonstrate content knowledge; pedagogical preparation, instructional delivery; classroom management; knowledge of student development. They collaborate with school professionals and implement reflective practice.

SCI 678
INITIAL HIGH SCHOOL SCIENCE TEACHING EXPERIENCE
6, 0/0

Prerequisites: SCI 502. Assignment to a supervised high school science teaching placement for five full days a week for 8 consecutive weeks. Candidates effectively demonstrate content knowledge; pedagogical preparation, instructional delivery; classroom management; knowledge of student development. They collaborate with school professionals and implement reflective practice.

SCI 679
SEMINAR IN SCIENCE EDUCATION
1, 1/0

Prerequisites: Acceptance into M.S. Ed. In Science Education. SCI 677 and SCI 678 taken as co-requisites. Taken simultaneously with student teaching. Supplements student teaching courses in areas connecting pedagogical theory with in-class experiences and practice.

SCI 685
EVALUATION IN SCIENCE EDUCATION
3, 3/0

Prerequisite: 6 credit hours of graduate-level coursework. Philosophy of evaluation as applied to science education; models of evaluation; techniques used in the practical application of the models; examples and procedures directly related to science teaching. Required in all science secondary education programs.

SCI 690
MASTER'S PROJECT
3, 3/0

A study undertaken by one or more individuals on a problem of special interest submitted in acceptable form according to directions given by the Earth Sciences and Science Education Department.

SCI 694
RESEARCH METHODS AND TECHNIQUES IN SCIENCE EDUCATION
3, 3/0

Prerequisite: 9 credit hours of graduate-level coursework in science or science education. Nature of educational research: problem analysis; descriptive and inferential statistics; experimental design; strategy of historical, descriptive, and experimental studies. Recommended for students planning educational research projects or theses.

SCI 695
MASTER'S THESIS
3, 0/0

SCI 721
THESIS/PROJECT CONTINUATION
0, 0/0

SCI 722
THESIS/PROJECT EXTENDED
0, 0/0

SCI 795
MASTER'S THESIS
3, 0/0

Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School.

SLP - SPEECH LANGUAGE PATHOLOGY

SLP 501
CLINICAL METHODS
2, 2/0

Prerequisite: Graduate status in speech-language pathology program; corequisite: SLP 515. Techniques used in the clinical management of speech, language, and swallowing disorders across cultures and throughout the life span; professional issues in speech-language pathology.

SLP 505
GRADUATE PRACTICUM IN AN EDUCATIONAL SETTING
6, 0/30

Prerequisites: Graduate status in speech-language pathology program; minimum grade of B in previous clinical practica; minimum of 48 hours of professional coursework; instructor permission; prerequisite or corequisite: SLP 424 or equivalent. Supervised clinical experience in an educational setting providing diagnosis and therapy for a variety of communication disorders. Meets the student teaching requirement for the New York State Education Certification of Teachers of the Speech and Hearing Handicapped.

SLP 511
NEURAL PROCESSES OF COMMUNICATION
3, 3/0

Pre-requisite: graduate status in the Speech-Language Pathology program. Basic concepts of neuroanatomy and neurophysiology as the foundation for diagnosis and treatment of communication and swallowing disorders of neurologic origin.
Equivalent course: SLA511

SLP 515
CLINICAL PRACTICUM
1-8, 0/0

Prerequisites: Graduate status in speech-language pathology program, SLP 501, and completion of 25 hours of supervised observation. Supervised on-campus clinical practicum for graduate students in speech-language pathology as necessary to meet state licensure and national certification requirements; policies and procedures of Buffalo State College Speech-Language-Hearing Clinic. Required for all graduate students prior to enrollment in SLP 505 or SLP 611.

SLP 516
DIAGNOSTIC PRINCIPLES AND PROCEDURES
2, 2/0

Prerequisite: Graduate status in speech-language pathology program. Exploration and implementation of diagnostic procedures in speech-language pathology. Emphasis is on the problem-solving principles and the importance of evidence-based and culturally appropriate practice in the clinical evaluation of individuals with communication and swallowing disorders.
Equivalent course: SLA516

SLP 518
EXTENDED APPLICATIONS IN COMMUNICATION SCIENCES AND DISORDERS
1, 0/2

Pre-requisite: graduate status in Speech-Language Pathology program. This lab will provide students with hands-on experience using various formal and informal assessment procedures, and with the diagnostic and therapeutic application of instrumentation commonly used in Communication Sciences and Disorders (CSD).

SLP 541
LANGUAGE DISORDERS: BIRTH TO AGE 5
3, 3/0

Prerequisites: Graduate status in speech-language pathology and a course in language development/disorders. Communicative and social interactions of children from birth to age 5; team approaches to the assessment of the communication patterns of infants, toddlers, and preschoolers from a range of culturally and linguistically diverse backgrounds; the development of appropriate intervention programs; theoretical, evidence-based, and practical applications.

SLP 580
RESEARCH METHODS IN SPEECH-LANGUAGE PATHOLOGY
2, 2/0

Prerequisite: Graduate status in speech-language pathology program. Research questions and methodologies used in communication disorders and sciences that include cultural and ethical considerations: quantitative and qualitative research models; literature review techniques; research-question formation; methods of data collection; critical analysis. Students formulate a research question in consultation with program faculty and review pertinent literature.
Equivalent course: SLA580

SLP 590
INDEPENDENT STUDY
1-3, 0/0

Independent study arranged between a graduate faculty member and a student. See the Independent Study section of this catalog for the independent study policy.
Equivalent course: SLA590

SLP 605
**CONTEMPORARY ISSUES IN CLINICAL INTERACTIONS:
FAMILIES AND CULTURE**
2, 2/0

Prerequisite: Graduate status in speech-language pathology program. Multicultural considerations within the framework of family systems theory; working effectively with families from a variety of multicultural backgrounds; developing strategies for enhancing communication with families across diverse cultures; assessment and intervention techniques for various communication and swallowing disorders in multicultural populations; understanding relevant policies for multicultural speech-language pathology.

SLP 606
FLUENCY DISORDERS AND CLEFT PALATE
3, 3/0

Prerequisite: Graduate status in speech-language pathology program. Etiologic, psychologic, sociologic, clinical, and multicultural information relative to the assessment and treatment of individuals with dysfluent speech or disordered speech caused by cleft lip and/or palate; theoretical, evidence-based, and practical applications.

SLP 607
DYSPHAGIA ACROSS THE LIFE SPAN
2, 2/0

Prerequisites: Graduate status in speech-language pathology program, SLP 511 or equivalent. Congenital and acquired swallowing disorders, their neurological and physical bases, differential diagnoses, prevention, treatments, and associated cultural and ethical issues across the life span; theoretical, evidence-based, and practical applications.

SLP 608
**NEUROMOTOR SPEECH DISORDERS AND DYSPHAGIA
ACROSS THE LIFE SPAN**
2, 2/0

Prerequisites: Graduate status in speech-language pathology program, SLP 511 or equivalent. Child and adult neuromotor speech disorders, including neurological bases, differential diagnoses, prevention, and treatments across the life span and with culturally and linguistically diverse populations; theoretical, evidence-based, and practical applications.

SLP 609
DISORDERS OF VOICE
2, 2/0

Prerequisite: Graduate status in speech-language pathology program. Nature, etiology, diagnosis, and intervention of voice disorders across the

life span and in multicultural populations: theoretical, evidence-based, and practical applications.
Equivalent course: SLA609

SLP 610
**EVALUATION AND TREATMENT OF PHONOLOGICAL
DISORDERS**
3, 3/0

Pre-requisite: graduate status in Speech-Language Pathology program. Various approaches to the evaluation and treatment of phonological disorders, including theoretical issues, evidence based assessment and treatment approaches, and cultural and linguistic issues.
Equivalent course: SLA610

SLP 611
EXTERNSHIP IN COMMUNICATION DISORDERS
3-12, 0/15

Prerequisites: Graduate status in speech-language pathology program; minimum grade of B in previous clinical practica; minimum of 48 hours professional coursework; instructor permission. Supervised clinical practicum in community speech-language-hearing clinics and/or hospitals providing diagnosis and therapy for a variety of communication disorders across the life span. Required for ASHA certification and NYS license in speech-language pathology. Required for all speech-language pathology majors.
Equivalent course: BXE628

SLP 615
AURAL REHABILITATION
3, 3/0

Prerequisites: Graduate status in speech-language pathology program, SLP 314 or equivalent. Effects of hearing loss on speech and language development, speech perception, and educational achievement; rehabilitative strategies, amplification devices, and communication options for the hearing impaired; characteristics and management of children with central auditory processing disorders; cultural and ethical considerations; theoretical, evidence-based, and practical applications.

SLP 621
AUGMENTATIVE AND ALTERNATIVE COMMUNICATION
2, 3/0

Prerequisite: Graduate status in speech-language pathology or exceptional education program. Needs of nonspeaking individuals across the life span and in multicultural populations; alternative and augmentative communication systems, techniques, and strategies; assessment and intervention strategies for alternative and augmentative communication; theoretical, evidence-based, and practical applications.
Equivalent course: SLA621

SLP 622
LANGUAGE DISORDERS OF SCHOOL-AGED INDIVIDUALS
3, 3/0

Prerequisite: Graduate status in speech-language pathology program. Culture-based approaches and procedures applied to assessment and intervention of language disorders of school-aged children; theoretical, evidence-based, and practical applications.

SLP 623
ACQUIRED LANGUAGE DISORDERS
3, 3/0

Prerequisites: Graduate status in speech-language pathology program, SLP 511 or equivalent. Acquired neurogenic language disorders in adults; differential diagnosis and treatment of the varieties of cognitive/communicative disorders associated with acquired brain damage, with consideration for cultural and linguistic background; theoretical, evidence-based, and practical applications.

SLP 625
**ADVANCED TOPICS AND ISSUES IN COMMUNICATION
SCIENCES AND DISORDERS**
3, 3/0

Prerequisite: Graduate status in speech-language pathology program. In-depth examination of contemporary professional and clinical topics, and new and emerging issues in the field of communication sciences and disorders. Relevant, timely course content will vary to keep pace with current issues that have an impact on the discipline.

SLP 690
MASTER'S PROJECT
3, 3/0

Prerequisite: SLP 580 or equivalent. Study undertaken by one or more individuals on a problem of special interest submitted in acceptable written form according to guidelines provided by the Speech-Language Pathology Department.
Equivalent course: SLA690

SLP 695
MASTER'S THESIS
1-3, 0/0

Individual investigation of an original problem submitted in acceptable form according to guidelines provided by the Graduate School.
Equivalent course: SLA695

SLP 721
THESIS/PROJECT CONTINUATION
0, 0/0

SLP 722
THESIS/PROJECT EXTENDED
0, 0/0

SOC - SOCIOLOGY

SOC 501
CONTEMPORARY SOCIAL PROBLEMS
3, 3/0

Prerequisite: SOC 100. Problem areas of American society; sources of information; techniques for discovering and analyzing social problems; analysis of several major problems, selected in accordance with student needs and interests.

SOC 505
TECHNOLOGY, SOCIETY, AND SELF
3, 3/0

Prerequisite: SOC 100. Interplay between society, technology, and science; social organization of research; social factors fostering research and development; consequences of science and technology for society, various institutions, subgroups within society, and individuals in society.

SOC 506
MINORITY GROUPS IN AMERICAN CULTURE
3, 3/0

Prerequisite: SOC 100. Current and historical sociocultural characteristics, experiences, and development of major religious, racial, and ethnic minorities; social conflict, current trends, and recent issues in minority-majority social relationships.

SOC 590
INDEPENDENT STUDY
1-3, 0/0

SOC 690
MASTER'S PROJECT
3, 0/0

SOC 695
MASTER'S THESIS
3, 0/0

SOC 721
THESIS/PROJECT CONTINUATION
0, 0/0

SOC 722
THESIS/PROJECT EXTENDED
0, 0/0

SPA - SPANISH

SPA 500
SPANISH LINGUISTICS AND PEDAGOGY
3, 3/0

Prerequisites: Graduate status. Exploration of the Spanish professional literature on applied linguistics and its implications for Spanish teaching and learning.

SPA 502
SEMINAR IN LATIN AMERICAN LITERATURE: SELECTED TOPICS
3, 3/0

Prerequisites: Graduate status or undergraduate senior with an average of B or better in upper-level Spanish courses and permission of instructor, department chair, and dean of Graduate School. In-depth treatment of a selected topic; analysis of selected works, with readings in history and literary criticism; research into specific problems.

SPA 516
LITERACY FOR SPANISH TEACHERS
3, 3/0

Prerequisites: Graduate status or instructor permission. Development of literacy in Spanish and proficiency in literacy-centered language teaching practices. Taught in Spanish.

SPA 602
SPANISH SOCIOLINGUISTICS AND PRAGMATICS
3, 3/0

Prerequisites: Graduate standing or instructor permission. Exploration of research and methodology in the study of Spanish sociolinguistics and pragmatics.

SPA 606
CONTEMPORARY CIVILIZATION AND CULTURES OF SPAIN
3, 3/0

Prerequisite: Must be admitted into Master of Science K-12 Foreign Language Teaching program, or instructor permission. Development of cultures in Spain since the country's emergence as a modern nation state; their implications for Spain's future within the European community.

SPA 609
CIVILIZATIONS AND CULTURES OF LATIN AMERICA
3, 3/0

Prerequisite: Must be admitted into Master of Science K-12 Foreign Language Teaching program, or instructor permission. Challenges faced by the emerging nations of Latin America from the nineteenth century to the present; emphasis on the relationships between these diverse cultures and the rest of the world.

SPA 617
DON QUIXOTE
3, 3/0

Prerequisite: Must be admitted into Master of Science K-12 Foreign Language Teaching program, or instructor permission. Cervantes' Don Quixote in its historical context; multiple levels of interpretive reading; questions of genre relationships.

SPA 631
CINEMA OF SPAIN
3, 3/0

Aspects of the cinema of Spain as a reflection of Spanish cultures; individual directors, periods of film production; influence of politics and culture on the cinema.

SPF - SOCIAL PSYCHOLOGICAL FOUNDATIONS

SPF 500
MULTICULTURAL EDUCATION
3, 3/0

Cultural foundations of education; application of relevant findings of the social sciences to problems and issues of education in culturally plural (multiethnic) settings.

**SPF 503
EDUCATION PSYCHOLOGY**

3, 3/0

Theories of learning; history of educational psychology; measurements of learning; variables and their interpretation; application of learning theory to the teaching situation.

**SPF 520
EDUCATIONAL STATISTICS I (DESCRIPTIVE AND
INFERENTIAL)**

3, 3/0

Basic statistical concepts and their application to inferential statistics. Students develop a statistical frame of reference in dealing with educational and psychological problems.

**SPF 525
PHILOSOPHY OF EDUCATION**

3, 3/0

Prerequisite: EDU 410 or equivalent. Principles underlying educational practices; changing concepts of education; education in a democratic society; teaching procedures as determined by a democratic concept of education.

**SPF 528
HUMAN RELATIONS**

3, 3/0

Intergroup problems relating to race, sex, religion, national origin, etc.; dividing and integrating factors affecting communications and understanding between individuals and within/between groups.

**SPF 529
ADOLESCENT PSYCHOLOGY**

3, 3/0

Characteristics and problems of adolescents; relationship of adolescent behavior to earlier development; special provisions of the early secondary school for this age group.

**SPF 546
CHILD ABUSE AND NEGLECT: SCHOOL AND COMMUNITY
COOPERATION**

3, 0/0

Role of the teacher in relation to child abuse and neglect: nature and causation of abuse and neglect; workings of the current child protection system and the specific role of the teacher in that system; broader role of the school in remedying child maltreatment.

**SPF 556
GROUP DYNAMICS IN EDUCATION**

3, 3/0

Prerequisite: Instructor consultation recommended. Theory and practice of group procedures in the school; development of understandings, skills, and attitudes conducive to successful group leadership and participation; group study and evaluation; experiential groups; the school group in its sociological, psychological, and philosophical setting.

**SPF 590
INDEPENDENT STUDY**

1-6, 0/0

**SPF 602
MANAGEMENT: ADMINISTRATIVE BEHAVIOR**

3, 3/0

Prerequisite: Graduate status. Basic administrative theories; managerial behavior as expressed through conceptual, human, and technical skills. Observation of field managers.
Equivalent courses: ADE602

**SPF 603
HUMAN RESOURCE MANAGEMENT**

3, 3/0

Personnel-related functions and the utilization of resources to support these functions within organizations: design of in-service training programs; supervisory skills for enhancing motivation and productivity; employee benefit packages; grievance and labor relations plans; proposals to obtain funding and training.
Equivalent courses: ADE603, BUS603, SWK603

**SPF 611
EVALUATION IN EDUCATION**

3, 3/0

Background and current status of evaluation; principles, purposes, and procedures of evaluation; effective interpretation and use of evaluative data; methods of recording and reporting pupil progress.
Equivalent courses: BME603

**SPF 619
PARENT EDUCATION AND COUNSELING**

3, 3/0

Parent education counseling approaches for schools and other settings: effective parent relations; fundamentals of effective parenting; parenting skills; program development and counseling procedures for various settings and populations; ways to involve parents in school/agency activities.

**SPF 641
SOCIAL FOUNDATIONS OF EDUCATION**

3, 3/0

Relationships of school to society; contemporary social problems affecting education, social groups, and institutions; school and community relations; national, state, and community organizations affecting educational programs and the development of social understandings in pupils.

**SPF 646
SEX EDUCATION AND COUNSELING**

3, 3/0

Fundamentals of human sexuality throughout the life cycle; sex education methods and materials for various age groups and special populations; sex counseling strategies; parent-community involvement. Designed for teachers and other helping professionals.

**SPF 665
INSTRUCTIONAL DESIGN AND ASSESSMENT**

3, 3/0

Prerequisite: Graduate Status Designing instruction to achieve specific learning outcomes; systematic models that facilitate planning, developing, revising, and evaluating instruction; planning instruction that incorporates educational technology.

**SPF 686
SEMINAR IN INNER-CITY EDUCATION**

3, 3/0

Nature and scope of education in the inner city: social research informing public policy on education of minorities; culture of minority children and the inner-city school; role of the teacher and the administrator; curriculum development and the needs of inner-city students; quest for educational equity; community/parent involvement.

**SPF 688
LEADERSHIP IN ORGANIZATIONS**

3, 3/0

Prerequisite: BUS/EDF/PSY 715. Theories of leadership; organizational contexts and culture for leadership; the role of the leader in organizations; leadership competencies for organizational effectiveness; the leader's role in mentoring and coaching for effective performance; the leader's role in achievement of organizational mission and goals.
Equivalent courses: ADE688, BUS688

**SPF 689
METHODS AND TECHNIQUES OF EDUCATIONAL RESEARCH**

3, 3/0

Background of educational research; selection and development of research problems; sources of information and data; methods, tools, and techniques; collection, treatment, application, and interpretation of research data; organizing and writing a research report.
Equivalent courses: ADE689, BME601, BUS601

**SPF 690
MASTER'S PROJECT**

1-3, 3/0

A study undertaken by one or more individuals on a problem of special interest submitted in acceptable form according to directions from the Educational Foundations Department.

**SPF 695
MASTER'S THESIS**

3, 0/0

An individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School.

**SPF 712
MANAGING PROGRAM EVALUATION**

3, 3/0

Management and technical skills required for program evaluation in the public and private sectors; establishing evaluation standards and criteria; developing evaluation instruments and designs; statistical analysis of evaluation data; computer-based statistical analyses; report preparation and follow-up studies.

Equivalent courses: BUS712, PAD712, SWK712

**SPF 715
MANAGEMENT PRACTICES AND TECHNIQUES**

3, 3/0

Prerequisites: PSY 101 and instructor permission. Major management theories and factors affecting organizational systems; managing conflict and negotiating agreements; effective interpersonal skills for managers; defining problems and generating creative alternatives; types and sources of information needed by managers; relation of leadership style to staff productivity and development; relating effectively to upper-level management.

Equivalent courses: ADE715

**SPF 721
THESIS/PROJECT CONTINUATION**

0, 0/0

**SPF 722
THESIS/PROJECT EXTENDED**

0, 0/0

SSE - SOCIAL STUDIES EDUCATION

**SSE 502
TEACHING SOCIAL STUDIES**

3, 3/0

This course must be taken concurrently with a History content course designated by the department. Social studies content and methodology; trends in curriculum; evaluation; instructional resources.

**SSE 513
SEMINAR IN SECONDARY SOCIAL STUDIES**

3, 3/0

Review of the literature and curriculum of the social studies; philosophical, historical, and sociological aspects of the social studies. Introductory course for secondary social studies graduate students.

Required for all social studies students.

**SSE 524
SECONDARY SOCIAL STUDIES INSTRUCTION**

1, 1/0

Prerequisite: Exceptional education or secondary education major. Teaching methods and materials used in secondary social studies education; laboratory sessions with social studies materials; construction of tests and evaluative instruments.

**SSE 540
BEGINNING TEACHER MENTORING SEMINAR IN THE SOCIAL STUDIES**

3, 3/0

Application of the theory learned in teacher preparation experiences to the practice of classroom teaching: application of educational theory in the first-year classrooms; reflective activities to improve classroom practices in light of a pedagogical theory; utilization of teacher teams to improve classroom practices and develop problem-solving strategies. Review of theory learned in certification programs. Designed to support first-year social studies teachers.

**SSE 588
TOPICS COURSE**

3, 3/0

**SSE 590
INDEPENDENT STUDY**

1-3, 0/0

Prerequisite: Instructor permission. Independent inquiry into a specific topic area of social studies education.

**SSE 595
RESEARCH METHODS IN SECONDARY SOCIAL STUDIES**

3, 3/0

Development of research problems: resources and tools of educational research; research methods and preparation of a research paper; assessment of national social studies curriculum projects.

**SSE 605
TOPICS FOR IN-SERVICE EDUCATION**

1-6, 0/0

Prerequisite: Provisional/initial certification. Topical seminar to meet in-service needs. Topics may be selected from any area of instructional and curricular concerns appropriate for the secondary school. Lectures, discussions, microteaching, and projects according to the topics selected. 1-6 credit hours, commensurate with the nature of the topic and the extent of the study. Graduate credit for any secondary education program.

**SSE 610
THE STUDY OF PEACE AND WAR IN THE SECONDARY SCHOOL**

3, 3/0

Possible approaches for achieving peace, strategies for teaching them, and criteria for judging them. Requires the teaching of a unit on peace at a site chosen by the student and instructor.

**SSE 632
TEACHING WITH HISTORIC PLACES**

3, 3/0

Prerequisites: Graduate status. Provides a foundation for those seeking to develop and implement educational materials related to historic places. Service-learning at the sites that famous people lived in, where historical events took place, and their teaching potential. Using one historic site as a case study; touring and meeting representatives to find out more about the historic place; determining the educational needs of the facility; creating curricular materials appropriate for the site.

Equivalent course: MST632

**SSE 640
SOCIOHISTORICAL CONTEXT AND ISSUES OF DIVERSITY IN U.S. SCHOOLING**

3, 3/0

Issues of diversity, multiculturalism, equity, justice, and participatory democracy in society, schools, and classrooms; historical development of multicultural education; response of society, schools, and teachers to calls for multicultural education; in-depth study and analysis of a multicultural program.

**SSE 655
SOCIAL STUDIES LABORATORY**

3, 3/0

Prerequisite: Graduate status; SSE 513 recommended. This course must be taken concurrently with a history content course designated by the department. Interaction with fellow professionals and development of skills to design, implement, and evaluate curriculum materials as required by newer approaches to the social studies.

**SSE 670
EXPERIENCES IN SIMULATION AND ROLE PLAYING FOR THE SOCIAL STUDIES TEACHER**

1-3, 1-3/0

Prerequisite or corequisite: SSE 513. Techniques of simulation and role playing: creating models of social situations and translating them into dynamic simulation and role-playing episodes.

**SSE 688
INTERNSHIP**

1-3, 0/0

Prerequisites: Graduate status; 6 credit hours of graduate coursework in major courses of history and social studies education; minimum cumulative GPA of 3.0; minimum 3.0 GPA in major and background of courses and experience within area of interest. Guided and supervised field experiences to complement the student's academic program. Approval of the placement from student's adviser and department chair.

**SSE 689
RESEARCH METHODS AND TECHNIQUES IN SECONDARY
SOCIAL STUDIES**

3, 3/0

Prerequisites: One social studies elective. Quantitative and qualitative research in the social studies; development of research problems; data collection in the social studies; format of a research paper.

**SSE 690
MASTER'S PROJECT**

3, 3/0

Prerequisite: Written approval of faculty adviser and department chair. Research or investigation of a particular problem, planned and carried out under the guidance of a qualified member of the graduate faculty, submitted in acceptable form according to directions given by the History and Social Studies Education Department.

**SSE 695
MASTER'S THESIS**

3, 0/0

**SSE 721
THESIS/PROJECT CONTINUATION**

0, 0/0

**SSE 722
THESIS/PROJECT EXTENDED**

0, 0/0

**SSE 730
PRACTICUM: INNOVATIONS IN THE SOCIAL STUDIES**

3, 3/0

Practical experiences in identifying, selecting, and field testing curricular and instructional innovations in secondary social studies. Required for all degree students.

**SSE 795
MASTER'S THESIS**

1-6, 0/0

Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School.

SWK - SOCIAL WORK

**SWK 546
CHILD ABUSE AND NEGLECT: SCHOOL AND COMMUNITY
COOPERATION**

3, 3/0

Prerequisites: Graduate status and experience in school/school-related setting or instructor permission. Role of the teacher in cases of child abuse and neglect; nature and causation of abuse and neglect; workings of the current child protection system; specific role of the teacher in that system; broader role of the school in remedying and preventing child maltreatment.

**SWK 590
INDEPENDENT STUDY**

1-3, 0/0

**SWK 603
HUMAN RESOURCE MANAGEMENT**

3, 3/0

Personnel-related functions and the utilization of resources to support these functions within organizations: design of in-service training programs; supervisory skills for enhancing motivation and productivity; employee benefit packages; grievance and labor relations plans; proposals to obtain funding and training.

Equivalent courses: BUS603, EDF603

**SWK 643
SUPERVISION IN THE HUMAN SERVICES**

3, 3/0

Prerequisite: Graduate status. Roles and functions of supervisors in a variety of work settings; supervisory role in coordinating agency functions and meeting clients' needs; worker role and responsibilities; leadership, organizational, and systems theory; application of theory to practice situations.

Equivalent course: PAD643

**SWK 645
PROGRAM PLANNING IN THE HUMAN SERVICES**

3, 3/0

Use of data for program planning in human service organizations. Students design a study pertinent to human services management. Equivalent course: PAD645

**SWK 690
MASTER'S PROJECT**

3, 3/0

Study undertaken by one or more individuals on a problem of special interest submitted in acceptable form according to directions given by the Social Work Department.

**SWK 695
MASTER'S THESIS**

3, 0/0

**SWK 721
THESIS/PROJECT CONTINUATION**

0, 0/0

**SWK 722
THESIS/PROJECT EXTENDED**

0, 0/0

TEC - TECHNOLOGY

**TEC 590
INDEPENDENT STUDY**

1-3, 0/0

**TEC 690
MASTER'S PROJECT**

3, 0/0

**TEC 695
MASTER'S THESIS**

3, 0/0

**TEC 721
THESIS/PROJECT CONTINUATION**

0, 0/0

**TEC 722
THESIS/PROJECT EXTENDED**

0, 0/0

TED - TECHNOLOGY EDUCATION

**TED 501
TECHNOLOGY EDUCATION IN THE ELEMENTARY SCHOOL**

3, 3/0

Planning, organizing, and constructing activities for the elementary school; use of a variety of materials; technology education in the elementary school; changing technological processes and their effect on society. For technology education and non-technology education majors.

**TED 507
TECHNOLOGY EDUCATION FACILITY PLANNING AND
MANAGEMENT**

3, 3/0

Problems involved in planning new technology education facilities or remodeling of existing laboratories; concepts in relationship of objectives to facilities; space allocation, area development, and organization; service requirement; criteria for selection and placement of equipment; analyzing available equipment and writing specifications; critique of an existing technology education laboratory.

Equivalent course: IAE507

**TED 531
ELEMENTS OF MANUFACTURING TECHNOLOGY**

3, 0/3

Manufacturing technology systems; management; personnel; and production.

Equivalent course: IAE531

TED 540
CAREER AWARENESS IN TECHNOLOGY FOR THE ELEMENTARY SCHOOL
3, 3/0
Current developments in career education; role of the elementary school in career education; curriculum development and correlation techniques.

TED 590
INDEPENDENT STUDY
1-3, 3/0

TED 600
FOUNDATIONS IN TECHNOLOGY EDUCATION
3, 0/3
European and American antecedents of technology education; social and technological factors that make the technology education a major condition of culture; psychological and philosophical basis for teaching technology education. Required for technology education majors.
Equivalent course: IAE600

TED 690
MASTER'S PROJECT
1-3, 3/0
Prerequisites: TED 600, BUS 601, BUS 602, and BUS 604. A study undertaken by one or more individuals on a problem of special interest submitted in acceptable form according to directions given by the Technology Department.
Equivalent course: IAE690

TED 695
MASTER'S THESIS
1-6, 0/0
Prerequisites: TED 600, BUS 601, BUS 602, and BUS 604. Individual investigation of an original problem submitted in acceptable form according to directions given by the Graduate School. Problem and procedure must be approved by the student's graduate adviser, the graduate advisory committee, and the department chair before the investigation is begun.
Equivalent course: IAE690

TED 701
SEMINAR IN TECHNOLOGY EDUCATION: WRITING AND PUBLISHING
3, 3/0
Mechanics of writing and publishing, for those with a genuine desire and ability to express ideas in written form.

TED 702
SEMINAR IN THE PHILOSOPHY OF TECHNOLOGY EDUCATION
3, 3/0
Critical examination of technology from a historical perspective: study of prevalent views and issues relative to technology; its meaning, characteristics, and interdisciplinary scope; its relation to science and its place in education.
Equivalent course: IAE702

TED 703
SEMINAR IN THE DEVELOPMENT OF INSTRUCTIONAL MATERIALS
3, 3/0
An opportunity to maximize the effectiveness of the instructional program and its resultant benefits, for those with a genuine desire to develop and organize teaching materials.
Equivalent course: IAE703

TED 705
CAREER EXPLORATION IN TECHNOLOGY FOR THE MIDDLE SCHOOL
3, 0/0
Student-teacher planning in career education for the middle school: curriculum development articulation methodology; developing instructional units of study for computer-based resource units.
Equivalent course: IAE705

TED 706
CAREER EXPLORATION IN TECHNOLOGY FOR THE SECONDARY SCHOOL
3, 3/0
The evolution and potentiality of career education for adolescents; opportunities for participants to develop occupational cluster information banks, including instructional objectives, content, media, learning activities, and evaluation devices.
Equivalent course: IAE706

TED 721
THESIS/PROJECT CONTINUATION
0, 0/0

TED 722
THESIS/PROJECT EXTENDED
0, 0/0

THA - THEATER ARTS

THA 721
THESIS/PROJECT CONTINUATION
0, 0/0

THA 722
THESIS/PROJECT EXTENDED
0, 0/0

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SUNY Distinguished Teaching Professors

Andrea Guiati, Ph.D., *Rutgers University*, Modern and Classical Languages Department (1985)

George T. Hole, Ph.D., *University of Rochester*, Philosophy and Humanities Department (1965)

Dan A. Kushel, M.A., *Columbia University*; M.A., C.A.S., SUNY College at Oneonta, Art Conservation Department (1978)

Susan M. Leist, Ed.D., *University of Virginia*, English Department (1991)

SUNY Distinguished Service Professors

Betty J. Cappella, Ph.D., *University at Buffalo*, Higher Education Administration Department (1985)

David A. Carson, Ph.D., *Texas Christian University*, History and Social Studies Education Department (1983)

Janet E. Ramsey, Ph.D., *University at Buffalo*, Communication Department; Dean, University College (1985)

Edward O. Smith Jr., Ph.D., *Lehigh University*, History and Social Studies Education Department (1963)

Anthropology Department

Lisa M. Anselmi, Ph.D., *University of Toronto*, Chair and Associate Professor (2004)

Lydia M. Fish, Ph.D., *Indiana University*, Professor (1967)

Dennis L. Gaffin, Ph.D., *University at Buffalo*, Professor (1989)

Kimberly L. Hart, Ph.D., *Indiana University*, Assistant Professor (2007)

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Art Conservation Department

Patrick C. Ravines, M.L.S., *Columbia University*, Director and Associate Professor (2010)

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James F. Hamm, M.A., C.A.S., *SUNY College at Oneonta*, Professor (1986)

Dan A. Kushel, M.A., *Columbia University*; M.A., C.A.S., SUNY College at Oneonta, SUNY Distinguished Teaching Professor (1983)

Corina E. Rogge, Ph.D., *Yale University*, Andrew W. Mellow Professorship (2010)

Aaron N. Shugar, Ph.D., *University College London*, Associate Professor (2006)

Jonathan L. Thornton, M.A., C.A.S., *SUNY College at Oneonta*, Professor (1983)

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Art Education Department

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Lucy Andrus, M.S.Ed., *Buffalo State College*, Professor (1982)

Michelle S. Bae, Ph.D., *University of Illinois*, Assistant Professor (2010)

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Katherine B. Hartman, M.A., *University at Buffalo*, Associate Professor, SUNY Chancellor's Award for Excellence in Teaching (1980)

Shirley Hayes, Ph.D., *Pennsylvania State University*, Associate Professor (2005)

Candace P. Masters, M.F.A., *Catholic University of America*, Assistant Professor (2008)

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Joseph R. Piccillo, M.S., *Buffalo State College*, Professor (1967)

John F. Siskar, Ph.D., *University at Buffalo*, Associate Professor;

Director, Center for Excellence in Urban and Rural Education (1992)

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Gregory J. Wadsworth, Ph.D., *North Carolina State University*, Chair and Associate Professor (1992)

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Derek L. Beahm, Ph.D., *University of California, Irvine*, Lecturer (2012)

Lyubov E. Burlakova, Ph.D., *Belarusian Academy of Science*, Adjunct Associate Professor (2007)

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Kofi Fynn-Aikins, Ph.D., *University of California, Davis*, Adjunct Assistant Professor (1999)

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Coaching and Physical Education Program

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Creative Studies Department

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Roger L. Firestien, Ph.D., *University at Buffalo*, Lecturer (1984)
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Susan M. Keller-Mathers, Ed.D., *Argosy University-Sarasota*, Associate Professor (1997)
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James J. Sobol, Ph.D., *University at Albany*, Associate Professor (2008)
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JawJeong Wu, Ph.D., *University of Nebraska*, Assistant Professor (2009)

Design Department

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Stephen F. Saracino, M.F.A., *Kent State University*, Professor (1981)
Carol A. Townsend, M.F.A., *Ohio University*, Associate Professor (1994)

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Suk Y. Oh, Ph.D., *Colorado State University*, Chair and Professor (1995)
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Tejaswini Rao, Ph.D., *Pennsylvania State University*, Associate Professor; Director, Didactic Program (1976)

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Richard J. Batt, Ph.D., *University of Colorado*, Associate Professor (1989)
Marilyou Bebak, M.S.Ed. *St. Bonaventure University*, Lecturer (2013)

Elisa T. Bergslien, Ph.D., *University at Buffalo*, Associate Professor (2002)
 Kathaleen Burkner, M.S.Ed. *University at Buffalo*, Lecturer (2013)
 Dara Dorsey Cote, M.Ed., *University at Buffalo*, Lecturer (2000)
 Robin Lee Harris, Ph.D., *University of Iowa*, Associate Professor (1997)
 Thomas Hoolihan, M.S. *SUNY Buffalo State*, Lecturer (2001)
 Catherine Lange, Ph.D., *University at Buffalo*, Assistant Professor; Program Coordinator, Science Education (2007)
 Brian Meyer, M.A. *University at Buffalo*, Lecturer (2013)
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 Jill K. Singer, Ph.D., *Rice University*, Professor; SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities; Director, Undergraduate Research (1986)
 Kevin K. Williams, Ph.D., *Arizona State University*, Associate Professor (2006)
 Joseph L. Zawicki, Ph.D., *University at Buffalo*, Associate Professor (2001)

Economics and Finance Department

Theodore F. Byrley, Ph.D., *University of Cincinnati*, Chair and Associate Professor; SUNY Chancellor's Award for Excellence in Teaching (1984)
 Susan M. Davis, Ph.D., *New School for Social Research*, Associate Professor (1985)
 Bruce L. Fisher, J.D., *University at Buffalo*, Visiting Professor; Director, Center for Economic and Policy Studies (2008)
 William T. Ganley, Ph.D., *University of California-Berkeley*, Professor (1972)
 Curtis Hayes Jr., *University of Massachusetts*, Associate Professor (1993)
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 Xingwang Qian, Ph.D., *University of California-Santa Cruz*, Assistant Professor (2008)
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Educational Foundations Department

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Elementary Education and Reading Department

Nancy A. Chicola, Ph.D., *University of Colorado at Denver*, Chair and Associate Professor; Coordinator, Educational Leadership Program (2000)
 Maria A. Ceprano, Ph.D., *University at Buffalo*, Professor (1997)
 Pixita del Prado Hill, Ed.D., *Harvard University*, Associate Professor (1999)
 Ellen S. Friedland, Ph.D., *University at Buffalo*, Associate Professor; Assistant Chair, Graduate Programs (1999)
 Keli Garas-York, Ph.D., *University at Buffalo*, Assistant Professor (2006)
 Mary T. Graff, Ph.D., *University at Buffalo*, Assistant Professor (2001)
 David R. Henry, P.D., *University at Buffalo*, Associate Professor (1999)
 Jevon D. Hunter, Ph.D., *University of California*, Los Angeles, Assistant Professor (2010)
 Timothy J. Hyland, M.P.A., *Harvard University*, Lecturer (2005)
 Laura J. Klenk, Ph.D., *University of Michigan*, Assistant Professor (2009)
 Peter W. Loehr, Ph.D., *Kent State University*, Associate Professor (1996)
 Karen A. MacGamwell, M.S.Ed., *Canisius College*, Lecturer (2008)
 Dianne S. McCarthy, Ed.D., *University at Buffalo*, Associate Professor (2005)
 Caroline E. Munella, M.S. *Buffalo State College*, Lecturer (2012)
 Wendy A. Paterson, Ph.D., *University at Buffalo*, Associate Professor, Dean, School of Education (1997)

Thomas J. Sadowski, M.S.Ed. *Buffalo State College*, Lecturer (1998)
 Adena F. Sexton, Ed.D., *University at Buffalo*, Lecturer (2006)
 Hibajene Shandomo, Ph.D., *Andrews University*, Associate Professor (2000)
 Christopher T. Shively, C.A.S., *Buffalo State College*, Lecturer (2007)
 Coralee S. Smith, Ph.D., *University of Missouri-Columbia*, Associate Professor (1999)
 Kimberly S. Truesdell, Ed.D., *University at Buffalo*, Associate Professor (2002)
 Sherri M. Weber, Ph.D., *Capella University*, Lecturer (2009)
 Jing Zhang, Ph.D., *University of Toronto*, Assistant Professor (2010)

Engineering Technology Department

James Mayrose, Ph.D., *University at Buffalo*, Chair and Associate Professor (1999)
 Lynn M. Boorady, Ph.D., *University of Missouri*, Associate Professor, 2010
 Mohan S. Devgun, Ph.D., *Birmingham University*, Professor (1990)
 John J. Earshen, Ph.D., *University at Buffalo*, Associate Professor (1980)
 Slade Gellin, Ph.D., *Harvard University*, Professor (1999)
 Stephanie R. Goldberg, Ph.D., *University at Buffalo*, Professor (1990)
 Clark W. Greene, M.S.Ed., *Buffalo State College*, Lecturer (2000)
 Ilya Y. Grinberg, Ph.D., *Moscow State University of Civil Engineering*, Professor (1995)
 Anthony J. Hotchkiss, Ph.D., *Southampton University at England*, Professor (1994)
 David J. Kukulka, Ph.D., *University at Buffalo*, Professor (1982)
 Steve M. Macho, Ed.D., *West Virginia University*, Associate Professor (2006)
 Richard A. Stempniak, Ph.D., *University at Buffalo*, Associate Professor (1974)

English Department

Lisa Berglund, Ph.D., *University of Virginia*, Chair and Professor (2001)
 Barish Ali, Ph.D., *University at Buffalo*, Assistant Professor (2006)
 Charles R. Bachman, Ph.D., *Indiana University*, Professor (1965)
 Geraldine E. Bard, Ph.D., *University at Buffalo*, Professor (1973)
 David N. Ben-Merme, Ph.D., *Brown University*, Assistant Professor (2008)
 Barbara T. Bontempo, Ed.D., *Indiana University*, Professor; SUNY Chancellor's Award for Excellence in Teaching (1988)
 Timothy Bryant, Ph.D., *University at Buffalo*, Assistant Professor (2012)
 James Cercone, Ph.D., *University at Buffalo*, Assistant Professor (2012)
 Kim Chinquee, M.F.A., *University of Illinois at Urbana*, Associate Professor (2008)
 Ann C. Colley, Ph.D., *University of Chicago*, Professor; SUNY Distinguished Teaching Professor (1985)
 Adrienne M. Costello, Ph.D., *University at Buffalo*, Associate Professor (2006)
 Heidi E. Dietz-Faletti, Ph.D., *University of California-Berkeley*, Associate Professor (1984)
 Mark K. Fulk, Ph.D., *Miami University of Ohio*, Associate Professor (2001)
 Theresa A. Harris-Tigg, Ph.D., *University at Buffalo*, Assistant Professor; Coordinator, English Education (2006)
 Susan M. Leist, Ed.D., *University of Virginia*, Professor (1991)
 Michele Ninacs, Ph.D., *Indiana University of Pennsylvania*, Assistant Professor; Director, College Writing Program (2009)
 Lorna L. Perez, M.A., *University at Buffalo*, Assistant Professor (2008)
 Kevin Railey, Ph.D., *Stony Brook University*, Professor; Associate Provost and Dean, The Graduate School (1991)
 Peter J. Ramos, Ph.D., *University at Buffalo*, Associate Professor (2005)
 Jennifer D. Ryan, Ph.D., *University of Iowa*, Associate Professor (2005)
 Karen Sands-O'Connor, Ph.D., *University of Wales-Cardiff*, Professor (1997)
 Laurence Shine, M.A., *University of Georgia*, Lecturer
 Aimable Twagilimana, Ph.D., *University at Buffalo*, Professor (1995)
 Ralph L. Wahlstrom, Ph.D., *Michigan Technological University*, Professor (1997)
 Craig G. Werner, Ph.D., *Harvard University*, Associate Professor (1984)

Exceptional Education Department

Kevin J. Miller, Ed.D., *West Virginia University*, Chair and Professor (2006)
 R. Bruce Baum, Ed.D., *Indiana University*, Professor (1972)

Catherine M. Boehm, M.S., *Buffalo State College*, Lecturer (1974)
 Judith A. Bondurant-Utz, Ed.D., *University of Cincinnati*, Lecturer (1977)
 Shannon E. Budin, Ph.D., *The Pennsylvania State University*, Associate Professor (2005)
 Jeanne M. Burns, M.S.Ed., *Buffalo State College*, Lecturer (2005)
 Lisa Dearlove, M.S., *Buffalo State College*, Lecturer (2003)
 Kathy R. Doody, Ed.D., *Buffalo State College*, Assistant Professor (2004)
 Teresa A. Fancher, M.S., *Canisius College*, Lecturer (2000)
 Warren L. Gleckel, Ph.D., *Syracuse University*, Associate Professor (1975)
 Theresa M. Janczak, Ph.D., *University at Buffalo*, Associate Professor (2005)
 Paul E. Lepo, M.S.Ed., *Buffalo State College*, Lecturer (2004)
 Susan Locke-Scott, C.A.S., *Buffalo State College*, Lecturer (1997)
 Michaelene M. Meger, Ph.D., *University at Buffalo*, Associate Professor (1993)
 Susan Mary Paige, Ph.D., *University at Buffalo*, Lecturer (2003)
 Kathleen K. Palumbo, M.S.Ed., *Buffalo State College*, Lecturer (1972)
 Angela L. Patti, Ph.D., *University at Buffalo*, Assistant Professor (2010)
 Debra A. Piotrowski, Ed.D., *University at Buffalo*, Lecturer (2007)
 David J. Pomerantz, Ph.D., *University of Illinois at Urbana-Champaign*, Associate Professor (1977)
 Mark P. Posluszny, Ed.D., *University of Kentucky*, Associate Professor (1988)
 Lisa A. Rafferty, Ph.D., *University at Buffalo*, Assistant Professor (2007)
 Sharon L. Raimondi, Ph.D., *American University*, Professor (1990)
 Awilda Ramos Zagarrigo, Ph.D., *University at Buffalo*, Assistant Professor (2008)
 Raquel J. Schmidt, Ph.D., *University at Buffalo*, Associate Professor (2001)
 Devorah R. Shapiro, M.S.Ed., *Buffalo State College*, Lecturer (1980)
 Lynne C. Sommerstein, M.S.Ed., *University at Buffalo*, Lecturer (1999)
 Krista Vince Garland, Ph.D., *University of Central Florida*, Assistant Professor (2012)
 Jennifer M. Westover, Ph.D., *University of Oregon*, Assistant Professor (2010)
 Ida Jean Windell, Ed.D., *Indiana University*, Associate Professor (1975)
 Timothy G. Zgliczynski, M.S.Ed., *Buffalo State College*, Lecturer (2005)

Fine Arts Department

Philip B. Ogle, M.F.A., *Maryland Institute College of Art*, Chair and Professor (2010)
 Anthony P. Gorny, M.F.A., *Yale University*, Associate Professor (2001)
 Sarah Beth Hinderliter, Ph.D., *Columbia University*, Assistant Professor (2008)
 Lin Xia Jiang, M.F.A., *University of Utah*, Professor (1995)
 Leslie R. Krims, M.F.A., *Pratt Institute*, Professor (1969)
 Elena M. Lourenco, M.F.A., *Arizona State University*, Assistant Professor (2008)
 Joseph A. Miller, M.F.A., *Southern Illinois University*, Associate Professor (1997)
 Kenneth P. Payne, M.F.A., *University of Wisconsin*, Professor (1990)

Geography and Planning Department

Kelly M. Frothingham, Ph.D., *University of Illinois at Urbana-Champaign*, Chair and Associate Professor (2000)
 Amy Bartlett, M.S., *Buffalo State College*, Lecturer (2009)
 Ian G. Droppo, Ph.D., *University of Exeter*, Adjunct Associate Professor (1996)
 Camille A. Holmgren, Ph.D., *University of Arizona*, Associate Professor (2007)
 Kimberley N. Irvine, Ph.D., *McMaster University*, Professor (1988)
 Wende A. Mix, Ph.D., *University at Buffalo*, Associate Professor (2004)
 Thomas Murphy, Ph.D., *University of British Columbia*, Adjunct Assistant Professor (1987)
 Scott Pickard, M.S., *Buffalo State College*, Lecturer (1996)
 Charlotte L. Roehm, Ph.D., *McGill University*, Adjunct Assistant Professor (2008)
 Tao Tang, Ph.D., *University of Wisconsin-Milwaukee*, Associate Professor (1998)
 Vida Vanchan, Ph.D., *University at Buffalo*, Assistant Professor (2006)
 Stephen J. Vermette, Ph.D., *McMaster University*, Professor (1993)
 William E. Wieczorek, Ph.D., *University at Buffalo*, Professor; Director, Center for Health and Social Research (1997)

Health and Wellness Department

Scott W. Roberts, Ed.D. *Brigham Young University*, Chair and Professor (1986)

Higher Education Administration

Wanda M. Davis, D.Ed., *Pennsylvania State University*, Chair and Professor (1995)
 Betty J. Cappella, Ph.D., *University at Buffalo*, SUNY Distinguished Service Professor (1983)
 Bonita R. Durand, Ph.D., *University at Buffalo*, Lecturer; Executive Assistant to the President, President's Office (1996)
 Latonia Gaston-Marsh, J.D., *City University of New York Law School*, Director, Judicial Affairs (1989)
 James A. Gold, D.Ed., *Pennsylvania State University*, Lecturer (1977)
 Molly A. Gold, M.S., *Buffalo State College*, Lecturer (1998)
 Richard J. Herdlein III, Ph.D., *University of Pittsburgh*, Associate Professor (1997)
 Kimberly J. Jackson, Ed.D., *University of Rochester*, Lecturer (2005)
 Marsha Jackson, Ph.D., *University at Buffalo*, Lecturer (2004)
 Kimberly A. Kline, Ph.D., *Indiana University*, Associate Professor (2007)
 Shelia Martin, M.A., *University of North Carolina, Chapel Hill*, Lecturer (2013)
 Daniel Ryan, Ph.D., *University at Buffalo*, Lecturer (1997)
 Amy B. Wilson, Ph.D., *University at Buffalo*, Assistant Professor (2012)

History and Social Studies Education Department

Andrew D. Nicholls, Ph.D., *University of Guelph*, Chair and Professor (1996)
 John D. Abromeit, Ph.D., *University of California-Berkeley*, Assistant Professor (2009)
 Felix L. Armfield, Ph.D., *Michigan State University*, Professor (2000)
 David A. Carson, Ph.D., *Texas Christian University*, Professor; SUNY Chancellor's Award for Excellence in Teaching (1983)
 Bridget M. Chesterton, Ph.D., *University at Stony Brook*, Assistant Professor (2007)
 Cynthia A. Conides, Ph.D., *Columbia University*, Associate Professor; Program Coordinator, Museum Studies Program (2000)
 Daniel DiLandro, M.L.S., *University at Buffalo*, College Archivist and Special Collections Librarian (2006)
 Martin F. Ederer, Ph.D., *University at Buffalo*, Associate Professor (1998)
 Jill M. Gradwell, Ph.D., *University at Buffalo*, Associate Professor (2004)
 Donald R. Hetzner, Ed.D., *University at Buffalo*, Professor (1970)
 Michael C. Lazich, Ph.D., *University at Buffalo*, Associate Professor (1997)
 Kathryn H. Leacock, M.L.S., *University at Buffalo*, Lecturer (2006)
 Ann K. Lupo, M.S.Ed., *SUNY Buffalo State*, Lecturer (1997)
 Gary Marotta, Ph.D., *New York University*, Professor (2000)
 Brian M. McAlonie, M.A., *University of Leicester*, Lecturer (2012)
 Kenneth S. Mernitz, Ph.D., *University of Missouri*, Associate Professor (1985)
 Albert L. Michaels, Ph.D., *University of Pennsylvania*, Professor (2009)
 William I. Mitchell, Ph.D., *University of Missouri*, Associate Professor (1991)
 York A. Norman, Ph.D., *Georgetown University*, Assistant Professor (2007)
 Kenneth J. Orosz, Ph.D., *University at Binghamton*, Associate Professor (2008)
 Jean E. Richardson, Ph.D., *University at Buffalo*, Associate Professor (1995)
 Misty D. Rodeheaver, Ed.D., *West Virginia University*, Assistant Professor (2010)
 Edward O. Smith Jr., Ph.D., *Lehigh University*, SUNY Distinguished Service Professor (1963)

Hospitality and Tourism

Kevin F. Mulcahy, Ed.D., *University of California, Los Angeles*, Associate Professor; (1992)

Mathematics Department

George T. Hole, Ph.D., *University of Rochester*, Interim Chair and SUNY Distinguished Teaching Professor (1965)
Saziye Bayram, Ph.D., *University at Buffalo*, Associate Professor (2006)
Valentin E. Brimkov, Ph.D., *University of Sofia, Bulgaria*, Professor (2005)
Joaquin O. Carbonara, Ph.D., *University of California, San Diego*, Professor (1992)
Daniel W. Cunningham, Ph.D., *University of California, Los Angeles*, Professor (1991)
Jane R. Cushman, Ph.D., *University of Texas at Austin*, Associate Professor (2006)
Kelly A. Delp, Ph.D., *University of California, Santa Barbara*, Assistant Professor (2007)
Chaitali Ghosh, Ph.D., *University at Buffalo*, Associate Professor (2000)
Thomas M. Giambone, Ed.D., *University at Buffalo*, Professor (1990)
Lorena D. Mathien, Ph.D., *University at Buffalo*, Assistant Professor (1996)
Susan E. McMillen, Ph.D., *University at Buffalo*, Associate Professor; Director, Faculty Development (2000)
Peter R. Mercer, Ph.D., *University of Toronto*, Professor (1997)
Robin S. O'Dell, Ph.D., *University at Buffalo*, Assistant Professor (2007)
Bruce Sun, Ph.D., *University of Pittsburgh*, Assistant Professor (2012)
Janine Viglietti, Ph.D., *University at Buffalo*, Assistant Professor (2012)
David C. Wilson, Ph.D., *University at Buffalo*, Associate Professor (2002)
Jodelle S. Wuertzer-Magner, Ph.D., *University of Maryland*, Associate Professor (2000)
Hongliang Xu, Ph.D., *University at Buffalo*, Associate Professor (2009)

Modern and Classical Languages Department

William L. White, Ed.D., *West Virginia University*, Chair and Associate Professor (2007)
Lee Ann Grace, Ph.D., *University at Buffalo*, Associate Professor (1973)
Andrea Guiati, Ph.D., *Rutgers University*, SUNY Distinguished Teaching Professor (1985)
Deborah L. Hovland, Ph.D., *University of Minnesota-Twin Cities*, Associate Professor (1992)
Carol B. Kirby, Ph.D., *University of Kentucky*, Professor (1985)
Eliane McKee, Ph.D., *Ohio State University*, Professor Emeritus (1980)
Barbara D. Miller, Ph.D., *University at Buffalo*, Associate Professor (2001)
Raul F. Neira, Ph.D., *University of Texas at Austin*, Associate Professor (1991)
A. Michael Vermey, Ph.D., *University of California, Los Angeles*, Assistant Professor (2009)
Mark K. Warford, Ph.D., *University of Tennessee*, Associate Professor (2000)

Music

Bradley J. Fuster, D.M.A., *University of Southern California*, Chair and Associate Professor (2004)
Benjamin C. Christy, A.Mus.D., *University of Michigan*, Professor; Dean, School of Arts and Humanities (2007)
Victoria J. Furby, Ph.D., *Ohio State University*, Assistant Professor (2008)
Carolyn Guzski, Ph.D., *City University of New York*, Assistant Professor (2009)
J. Tomas Henriques, Ph.D., *University at Buffalo*, Assistant Professor (2009)
Lisa R. Hunter, Ph.D., *University of Arizona*, Associate Professor (2003)
Charles Mancuso, M.A., *Buffalo State College*, Professor (1976)

Philosophy and Humanities Department

Kimberly A. Blessing, Ph.D., *University at Buffalo*, Chair and Professor (2004)
George T. Hole, Ph.D., *University of Rochester*, SUNY Distinguished Teaching Professor (1965)
Allen H. Podet, Ph.D., *University of Washington*, Professor (1974)

Physics Department

Michael J. DeMarco, Ph.D., *University of Cincinnati*, Chair and Professor (1981)

David S. Abbott, Ph.D., *North Carolina State*, Assistant Professor (2006)
David J. Etestad, Ph.D., *Cornell University*, Associate Professor (1986)
Luanna S. Gomez, Ph.D., *University of Washington*, Assistant Professor (2007)
David R. Henry, Ph.D., *University at Buffalo*, Associate Professor (1999)
Dan L. MacIsaac, Ph.D., *Purdue University*, Associate Professor (2002)
Ram C. Rai, Ph.D., *University of Kentucky*, Assistant Professor (2007)

Political Science Department

Michael S. Pendleton, D.A., *Idaho State University*, Chair and Associate Professor (1979)
Kyeonghi Baek, Ph.D., *University of Mississippi*, Assistant Professor (2008)
Jeffrey T. Bochiechio, J.D., *University at Buffalo*, Lecturer (2012)
Laurie A. Buonanno, Ph.D., *John Hopkins University*, Professor, SUNY Chancellor's Award of Excellence in Teaching (2006)
Frank Ciaccia, M.S., *SUNY Brockport*, Lecturer (2012)
Angelo A. Conorozzo, M.S.W., *University at Buffalo*, Lecturer; Program Coordinator, Public Administration Program (1995)
Lawrence G. Flood, Ph.D., *University of North Carolina*, Professor (1977)
Keith M. Henderson, D.P.A., *University of Southern California*, Professor (1969)
James R. Leuthe, Ph.D., *University at Buffalo*, Lecturer (1990)
Bryce E. Link, M.P.A., *Syracuse University*, Lecturer (2012)
Patrick J. McGovern, Ph.D., *University of Arizona*, Associate Professor (2006)
Anthony T. Neal, Ph.D., *Clark Atlanta University*, Associate Professor (1988)
Diane Oyler, Ph.D., *University at Buffalo*, Lecturer (2006)
William A. Pauly, Ed.M., *University at Buffalo*, Lecturer (2012)
Janet Penska, Ph.D., *University at Buffalo*, Lecturer (2012)
Raymond Rushboldt, M.A., *University at Buffalo*, Lecturer (2013)
Kenneth H. Stone, M.P.A., *California State University*, Lecturer (2012)
Therese Warden, Ph.D., *University at Buffalo*, Lecturer (2003)
Peter Yacobucci, Ph.D., *University of Arizona*, Assistant Professor (2010)

Psychology Department

Jill M. Norvilitis, Ph.D., *Wayne State University*, Chair and Professor; SUNY Chancellor's Award for Excellence in Teaching (1997)
Robert P. Delprino, Ph.D., *Old Dominion University*, Associate Professor (1992)
Jean M. DiPirro, Ph.D., *University at Buffalo*, Associate Professor (1999)
Stephani Foraker, Ph.D., *New York University*, Assistant Professor (2008)
Dwight A. Hennessy, Ph.D., *York University*, Associate Professor (2000)
Jennifer S. Hunt, Ph.D., *University of Minnesota-Minneapolis*, Associate Professor (2007)
Jurgis Karuza Jr., Ph.D., *Wayne State University*, Professor (1978)
Michael G. MacLean, Ph.D., *Arizona State University*, Associate Professor (1997)
R. Karen O'Quin, Ph.D., *Michigan State University*, Professor; Associate Dean, School of Natural and Social Sciences (1982)
Howard M. Reid, Ph.D., *University of Maine at Orono*, Professor; SUNY Chancellor's Award for Excellence in Teaching (1977)
Pamela Schuetze-Pizzarro, Ph.D., *Virginia Polytechnic Institute and State University*, Professor (1996)
Michael J. Zborowski, Ph.D., *Ohio University*, Associate Professor (1991)

Social Work Department

Carolyn M. Hilarski, Ph.D., *University at Buffalo*, Chair and Professor (2006)
Carol Gettings, M.S.Ed., *Buffalo State College*, Lecturer

Sociology Department

Eric J. Krieg, Ph.D., *Simmons College*, Chair and Associate Professor (1997)
Gerhard J. Falk, Ed.D., *University at Buffalo*, Professor; SUNY Chancellor's Award for Excellence in Teaching (1957)
Virginia E. Grabiner, Ph.D., *University of California-Berkeley*, Associate Professor; SUNY Chancellor's Award for Excellence in Teaching (1975)
Staci Newmahr, Ph.D., *SUNY Stony Brook*, Assistant Professor (2008)

Allen C. Shelton, Ph.D., *University of Georgia*, Associate Professor (1998)
Amitra A. Wall, Ph.D., *Texas Women's University*, Associate Professor (2000)
Gary S. Welborn, Ph.D., *University at Buffalo*, Chair and Associate Professor (1993)
Jie Zhang, Ph.D., *Brigham Young University*, Professor; Director, Center for China Studies (1997)

Speech-Language Pathology Department

Constance Dean Qualls, Ph.D., *University of Memphis*, Chair and Professor (2005)
Sally A. Arnold, Ph.D., *Northwestern University*, Associate Professor (1995)
Karen Bailey-Jones, M.A., *University at Buffalo*, Director, Speech-Language-Hearing Clinic (1992)
Dolores E. Battle, Ph.D., *University at Buffalo*, Professor (1970)
Angela DeLarco, M.S.E.D., *Buffalo State College*, Lecturer (2003)
Christopher Heximer, M.A., *University at Buffalo*, Clinic Supervisor(1993)

Deborah M. Insalaco, Ph.D., *University of Arizona*, Associate Professor (2000)
Camilo Maldonado III, Ph.D., *University at Buffalo*, Assistant Professor (2012)
Sara Mann Kahris, M.S.Ed., *Buffalo State College*, Clinical Supervisor(1989)
Laura Roberts, M.S., *SUNY at Fredonia*, Clinic Supervisor(2001)
Tamara Roberts, M.S.Ed., *Buffalo State College*, Lecturer (1992)
Kathryn Scarborough, M.S.Ed., *Buffalo State College*, Lecturer (2005)
Barbara Weitzner-Lin, Ph.D., *University at Buffalo*, Associate Professor (1985)

Theater Department

Donn M. Youngstrom, M.F.A., *Brooklyn College*, Chair and Associate Professor (1994)
Carol Y. Beckley, M.F.A., *Southern Methodist University*, Associate Professor