

## Department of Criminal Justice

**101S Faculty Office Building  
(716) 395-2665**

*Chairperson:* Richard Lumb; *Professor:* Charles P. Nemeth; *Associate Professors:* Larry R. Bassi, Richard G. Frey, Richard Lumb, Roger B. McNally; *Assistant Professor:* Jeffrey Magers; *Visiting Assistant Professors:* Christine Plumeri, Thomas M. Tremmer; *Professor Emeritus:* Romine (Dick) Deming.

The criminal justice program is for students interested in studying the causes, prevention and control of crime, as well as the theories and policies relative to the structure and operation of various law enforcement, security and correctional and judicial organizations. The department's curricular and programmatic philosophy is primarily professional, though students are exposed to a wide array of intellectual disciplines across the University.

The criminal justice major prepares students for criminal justice careers in professional justice agencies. Careers in criminal justice can be categorized by a variety of organizations: state and local police; correctional organizations for adult and juveniles (i.e. those in probation, after care, related institutions, and public and non-profit residential care); federal law enforcement/ security organizations; private security, legal and judicial organizations.

SUNY Brockport criminal justice graduates have taken positions with agencies such as the New York City Police, New York State Police, State Corrections Department, Division for Youth, Monroe County Public Defender's Office, Victim Assistance Unit, court systems, and a variety of criminal justice agencies outside New York. Many serve in federal agencies, such as the State Department, Secret Service, Drug Enforcement Agency, FBI, U.S. Customs, Immigration and Naturalization, Department of Defense, and Federal Probation and Parole. Others are employed in private security with companies such as Eastman Kodak Company, Xerox and Pinkerton. Many graduates work for human service agencies such as Hillside Children's Center, Lifetime Assistance, Inc. and the Big Brother/Big Sister Program.

Other SUNY Brockport graduates have continued their education in law, criminal justice, counseling, and public administration, with such institutions as SUNY Brockport, University at Buffalo, University at Albany, Adelphi University, John Jay College, Michigan State University, University of Maryland, Rutgers University and Albany Law School.

### Special Affiliations

A chapter of Alpha Phi Sigma (National Criminal Justice Honor Society) and a Criminal Justice (Student) Association are active at SUNY Brockport. The Department also honors its most intellectual students with an invitation to the "Order of Cicero."

Students are encouraged to study criminal justice and comparative jurisprudence at Brunel University in Great Britain, study during summer or spring in Ireland at the Waterford Institute, or study at The University of Szeged in Hungary, or participate in the College's Washington, D.C. and Albany Semester programs, British internships, or other local internship placements. Students can study Spanish in Cuernavaca, Mexico, for five weeks (six credits) in the summer.

### Criminal Justice

Criminal justice is both a professional and a liberal arts program. Specifically, the criminal justice major consists of three components: non-criminal justice courses (corequisites), many in related liberal arts disciplines which can be taken during the first two years of college; criminal justice proficiency courses; and criminal justice electives, which can be grouped into specialty areas or not, at the student's option.

Students must earn a minimum of 36 credits of course work in criminal justice, 18 of which must be taken at SUNY Brockport. The criminal justice core consists of an introductory course in criminal justice; process courses in police, adjudication, corrections, and juvenile justice; criminology; research methods; and criminal law. Specialty areas of elective criminal justice courses may be selected focusing on police, corrections, security administration, international criminal justice, and legal studies.

To prepare for the major, freshman and sophomore students are urged to take Introduction to Sociology, Introduction to Psychology, American Political Systems, an introductory course in computers, and courses which will enhance their writing skills. The more advanced corequisite courses will be taken during the junior and senior years. Note: An introductory course in statistics is a prerequisite to the required criminal justice course, CRJ 471 Research Methods. Many criminal justice majors transfer with associate degrees from the fine community colleges in New York State.

### Admission to the Major

Students seeking acceptance into the criminal justice major must meet the following criteria:

1. Completion of an associate degree, or 54 credits towards a baccalaureate degree at another school, or 24 credits at SUNY Brockport; and
2. A cumulative grade point average of 2.5 or better.

Application by SUNY Brockport students for the major will ordinarily be made during the fall semester of the sophomore year.

### Requirements:

### Credits

The required courses for the degree are:

#### I. General Education Program courses required of all Bachelor of Science students.

#### II. Corequisite Courses (21 credits)

SOC 100	Introduction to Sociology	3
PSH 110	General Psychology <b>OR</b>	
PSH 112	General Psychology with Lab	3
PLS 113	American Political Systems	3
	An approved ethnic minorities course	3
	An approved statistics course	3
	Two upper division (300/400level) courses, one of each in two of the following three disciplines: Sociology, Psychology, or Political Science.	6

#### III. Criminal Justice Core Proficiencies (24 credits)

CRJ 101	Intro to Criminal Justice	3
CRJ 203	The Police Process	3
CRJ 207	The Corrections Process	3
CRJ 305	The Adjudication Process <b>OR</b>	
PLS 320	Law & Legal Process	3
CRJ 311	Criminal Law	3
CRJ 343	Juvenile Justice Process	3
CRJ 471	Research Methods <b>OR</b>	
CRJ 475	Legal and Justice Research Methods	3
CRJ 494	Criminology	3

#### IV. Criminal Justice Electives and/or International Criminal Justice Educational Experience (12 credits).

At least four courses must be completed from a wide variety of electives. These may include courses selected with the advice and approval of the student's advisor in specialty areas of police, corrections, security administration, international criminal justice, or legal studies. The department encourages students to enroll in one of its three international programs in fulfillment of these criteria.

### Criminal Justice Minor

An academic minor in criminal justice requires students to complete at least 18 credits in the field as specified:

CRJ 101	Introduction to Criminal Justice	3
CRJ 203	The Police Process <b>OR</b>	
CRJ 207	The Correction Process	3

## CRJ 305 The Adjudication Process

3

The remaining nine credits are selected from the department's course offerings with the advice and approval of the student's advisor.

## Criminal Justice Courses

**CRJ 101 Introduction to Criminal Justice (A).**

Covers the nature, scope and impact of crime in the U.S.; independent and inter dependent operations and procedures of police, courts and corrections; and introductory theories of crime and delinquency. 3 Cr. Every Semester.

**CRJ 203 The Police Process (A).** Covers the roles of law enforcement agencies at the local, state and federal levels; interrelationships with other criminal justice agencies; and selected law enforcement problems. 3 Cr. Fall.

**CRJ 207 The Corrections Process (A).** Covers the history and evolution of corrections; the social organization of prisons; differences between adult and juvenile correction; and probation and parole practices and alternatives to incarceration. 3 Cr. Spring.

**CRJ 304 Investigations (B).** A comprehensive examination of investigations relative to both public and private modes, including most major felony processes and relevant civil actions. Focus is on the fundamentals of the investigative process and the range of skills necessary for successful performance and management of investigations, including evidence gathering and analysis, witness assessment, field techniques and linkage between investigative and prosecutorial agencies. 3 Cr.

**CRJ 305 The Adjudication Process (A).** *Prerequisite:* CRJ 101. Examines the organization and functions of the courts; pre- and post-trial motions and procedures; and the role of prosecutorial and defensive agencies. 3 Cr. Every Semester.

**CRJ 311 Criminal Law (A).** *Prerequisite:* CRJ 305 or PLS 320 or instructor's permission. Covers the historical development of criminal law in the U.S.; the parties to crime including principals/accessories; and the elements of crimes against persons and property, and moral offenses, and defenses to such crimes. 3 Cr. Every Semester.

**CRJ 313 Constitutional Criminal Procedure (A).** *Prerequisite:* CRJ 305 or PLS 320 instructor's permission. Covers the application of the B ill of Rights; rules governing evidence; and the legal concepts governing arrest, search and seizure, and interrogations and confessions. 3 Cr.

**CRJ 315 Constitutional Law of the Detained (A).** *Prerequisite:* CRJ 305 or PLS 320 or instructor's permission. Covers correctional case law, civil rights, and concepts related to the detained; and

compares today's correctional practices with legal guidelines. 3 Cr.

**CRJ 321 Crime Patterns (A).** *Prerequisite:* Six credits of criminal justice courses or instructor's permission. Covers the extent and nature of crimes against property and person, methods of crime commission, and prevention and repression of crime. 3 Cr.

**CRJ 323 White Collar Crime (A).** An historical and contemporary look at white collar/occupational crime in the United States. Subjects for analysis include the concept of occupational crime, counting and recording occupational crimes and criminals, explanations of occupational criminality, organizational occupational crime, state authority occupational crime, professional occupational crime, individual occupational crime, and sanctioning, social control, and occupational crime. 3 Cr.

**CRJ 331 Community-Based Corrections (A).** *Prerequisite:* CRJ 207 or instructor's permission. Explores the evolution of community-based corrections, the interrelationship between community based correction programs and other criminal justice agencies, and the role and involvement of the public in community-based corrections. 3 Cr.

**CRJ 333 Treatment Modalities (B).** *Prerequisite:* CRJ 101, SOC 100 or 220. Provides an analysis and application of major contemporary treatment models as they apply to the criminal justice system; and explores experiential as well as theoretical considerations. 3 Cr.

**CRJ 343 Juvenile Justice Process (A).** *Prerequisites:* Six credits of criminal justice courses or instructor's permission. Covers the historical development of juvenile justice in the U.S., jurisdiction issues, the adjudication process, role of the police and community agencies, and abuses in the system. 3 Cr. Every Semester.

**CRJ 371 Introduction to Forensic Science (A).** Provides a study of the work of the crime lab and the medical examiner. Examines methods of analysis of items commonly found at crime scenes such as: fingerprints, blood, illegal drugs, hairs, fibers, arson residues, bullets, etc. Covers procedures for processing the crime scene and safeguarding the evidence. 3 Cr. Fall.

**CRJ 399 Forensic Law (B).** An interdisciplinary course covering law, criminal justice, science and technological issues in the evidentiary arena. Coverage in the course provides a broad-based

assessment of expert witnesses, microanalysis, pathological evidence, admissibility and investigatory practice, ballistics, fingerprints, vascular/radar, and photographic techniques as it relates to litigation theory, tactics and evidentiary proof. 3 Cr.

**CRJ 410 Criminal Justice Dilemmas (B).** Course reviews difficult and persistent problems in the American criminal justice system including constitutional dilemmas of police, the use of excessive force, the relationship between race, poverty and crime, the death penalty and other punishment, and the role of the state as it relates to individual freedoms. Exploration of techniques used to recognize genuine controversies, decisions about which arguments can or cannot be settled, and knowledge about which questions to ask and how to evaluate the answers in order to settle justice dilemmas and disputes successfully, are the chief purposes of the course. Lectures, discussions, small group assignments and media presentations will be utilized to achieve these goals. 3 Cr.

**CRJ 431 Crime Prevention (A).** *Prerequisite:* Six credits of criminal justice courses or instructor's permission. Explores crime problems and the role of the criminal justice system in crime prevention—its funding, planning and evaluation. 3 Cr. Every Semester.

**CRJ 434 Security Administration (B).** Provides a comprehensive examination of the nature and problems of private and public security administration. Focuses on the issues of administration and the solutions, especially security technology necessary for successful management. 3 Cr. Every Semester.

**CRJ 436 Information/Computer Security (B).** Examines the nature, problems, and programs to protect organizational information, especially electronically processed data and computer equipment. 3 Cr. Every Semester.

**CRJ 438 Security Law (B).** Provides a comprehensive understanding of fundamental issues in the "legal-intensive" field of security administration. 3 Cr.

**CRJ 451 International Criminal Justice (A).** *Prerequisite:* CRJ 101; *Corequisite:* SOC 100. Compares and contrasts the criminal justice system of the United States with the systems of other countries. 3 Cr.

**CRJ 455 Legal Traditions (B).** A complete examination of the law, its origins, roots and underpinnings, in a jurisprudential context. Special attention is given to the nature of freedom, the concept of liberty, free will, the regularity and moral efficiency of punishment and the overall moral framework upon which the Western legal

system bases itself from the early Greeks and Romans to Contemporary Neo-Classicalists. Coverage includes a focused examination of Cicero, Plato, Aquinas, and contemporary jurists. 3 Cr.

**CRJ 465 Terrorism (A).** Examines current terrorism, its origins and ideological bases, with particular attention to its relation to political institutions and the criminal justice response. 3 Cr.

**CRJ 467 Murder and Its Control (B).** Given that murder has plagued humanity as far back as history can trace, this course analyzes the forms, causes, and context of homicide in the United States. Additionally, the course looks at criminal and non-criminal types of homicide in other cultures. The course provides some answers to reasons why murder rates vary from state to state and from one country to another. Central to the course are various behavioral adaptations to avoid becoming a victim of homicide, the social and economic consequences of homicide, societal mechanisms of preventing murder, and assessment of the risk of committing a criminal homicide in the United States and selected countries. 3 Cr.

**CRJ 471 Research Methods (A).** *Prerequisites:* Junior or senior status and successful completion of any one of the following courses: SOC 200, PSH 202, POL 300, MTH 243 or ECN 204. Familiarizes criminal justice majors with the development of data-gathering techniques, including scaling, questionnaire construction, sampling procedures, interviewing, secondary data analysis, and techniques of data processing using micro- and minicomputers. Also examines linear casual models as a tool in theory and research, research designs, central tendency, variation, bivariate and multivariate regression models, and statistics for nominal and ordinal measures. 3 Cr. Every Semester.

**CRJ 475 Legal and Justice Research (B).** Explores the specialized methods and sources of legal and justice research in: justice publications and governmental resources, case law collections, computer-assisted research in legal practice, constitutional and legislative history, legal periodicals, administrative practice and procedure materials and social science materials related to law. Application of legal research strategies will be required. 3 Cr.

**CRJ 477 Family Violence (A).** *Prerequisites:* *Introduction to Sociology and Introduction to Psychology.* Focuses on the dynamics of family violence and the legal and social system response to the phenomena. Explores and analyzes in-depth the scope and theoretical explanations of the issues of the various forms of family violence,

e.g. spousal abuse, marital rape, elderly abuse. 3 Cr.

**CRJ 479 Victimology (A).** *Cross-listed as WMS 479. Prerequisite: Junior or senior status.* Develops an understanding of crime victimization, both direct and indirect. Focuses on street crime, social and political oppression, victimization of women, and victims of corporate deviance. Emphasizes theory and policy analysis. 3 Cr.

**CRJ 481 Women and Criminal Justice (A).** *Cross-listed as WMS 481. Prerequisite: Junior or senior status.* Examines women's relationship with crime and the criminal justice system. Specifically provides a study of women and crime, victimization and occupational obstacles and opportunities. Develops students' understanding of how social, political and economic conditions affect these problems. 3 Cr. *Every Semester.*

**CRJ 483 Fair Trial/Free Press Conflicts (A).** *Prerequisite: Junior status or instructor's permission.* Examines instances in which these two highly valued and protected rights in our society have come into conflict, and evaluates legal cases in which rules designed to resolve these conflicts have been offered. 3 Cr.

**CRJ 485 Issues in Juvenile Justice (A).** *Prerequisites: CRJ 343 or instructor's permission.* Provides an in-depth analysis of 10–12 selected topics germane to the juvenile justice system. Includes topics such as child abuse and domestic violence, alternatives for the status offender, ethical issues, children's rights, right to treatment and right to refuse treatment, the politics of juvenile justice, and the court as a socio-legal institution. 3 Cr.

**CRJ 489 Problems in Policing (A).** *Prerequisite: CRJ 203.* Discusses specific problems of law enforcement and policing in contemporary American society. Emphasizes the development, nature and function of law enforcement as it relates to criminal justice. Covers topical issues and problems such as ethics, corruption, deadly force and civil liabilities. 3 Cr.

**CRJ 490 Internship in Criminal Justice (B).** *Prerequisite: Internship coordinator's permission.* Enables students to learn the basic operations of a criminal justice agency and participate in agency activity. Involves group discussion, weekly log, and final report. 3–6 Cr. *Every Semester.*

**CRJ 491 Selected Topics in Criminal Justice (B).** *Prerequisite: Instructor's permission.* Enables students to develop an understanding of one topic concerning criminal justice, and learn to conduct research and analyze research findings on a given topic. May be repeated with chair's permission. 3 Cr. *Every Semester.*

**CRJ 493 Seminar in Criminal Justice (A).** *Prerequisite: Instructor's permission.* Allows students to gain an understanding of a criminal justice issue. Utilizes research skills to prepare and present research projects, and defend findings to an audience of critical judges. May be repeated with chair's permission. 3 Cr.

**CRJ 494 Criminology (A).** *Prerequisite: CRJ 101; corequisite SOC 100.* Provides a review and critical analysis of the major criminological theories beginning with the classical school; biological school; and psychological, sociological, and psychoanalytic orientations, including economic determinism. Considers various forms of criminality, as well as studies dealing with the frequency of crime in different places at different times. 3 Cr. *Every Semester.*

**CRJ 495 Law and Evidence (B).** A comprehensive review of evidentiary principles, both common and statutory law and their impact on both civil and criminal process and how these principles impact the conduct of trial and litigation. Topical coverage includes real and physical evidence, demonstrative substitution, hearsay and first-hand evidence, witness scope and qualification, as well as privilege principles. Both federal and state rules will be interpreted. 3 Cr.

**OAP 408 Criminal Justice in England (A).** *Prerequisites: Junior or senior status and chair's permission.* Occurs at Brunel University, Uxbridge, England. Studies these major areas: the history and sociology of British culture, the English criminal justice system, British criminal law. Includes a program of field visitations to British criminal justice agencies. Taught by full-time SUNY Brockport faculty and the faculty of Brunel University. 15 Cr. *Every Semester.*

**OAP 413 British Internships in Criminal Justice (A).** *Prerequisites: Junior status, minimum GPA of 2.5 and department coordinator's permission.* Occurs in a British criminal justice agency such as: British Parliament, West Yorkshire Metropolitan Police, or Leicester Probation Department during either semester or summer. 15 Cr. *Every Semester; 12 Cr. Summers.*

**OAP 414 Criminal Justice in Ireland (B).** Study at the Waterford Institute of Technology within the division of law and legal studies. Areas of inquiry include Irish criminal law, Irish penology and the jurisprudence of Ireland. Students will tour various justice facilities common to the Irish justice system. Waterford is an extraordinary seaport and ocean community that is located on Ireland's east coast with easy access to England and the rest of Europe. 3 Cr. *Summer, Spring.*

**OAP 415 Language and Cultural Immersion Program for Criminal Justice (A).** Provides intensive conversational Spanish in small groups, a course in international terrorism or other electives, lectures, and cultural excursions in Cuernavaca, Mexico. *6 Cr. Summers.*

**OAP 417 Criminal Justice in Hungary (B).** A semester-based experience in the southern plain of Hungary at the University of Szeged—a comprehensive institution that prepares undergraduates in legal studies and the professional bar. Students will have the opportunity to enroll in numerous classes, including law, philosophy and

literature as well as the study of the Hungarian language. Located in the medieval city of Szeged, and centrally located in Europe, students will have access to numerous cultural experiences in Croatia, Austria, Germany, Romania, the Czech Republic and the Ukraine. *3 Cr.*

**CRJ 499 Independent Study in Criminal Justice (A or B).** *Prerequisite: Instructor's permission.* To be defined in consultation with the instructor-sponsor and in accordance with the procedures of the Office of Academic Advisement prior to registration. May be repeated with chair's permission. *1–6 Cr. Every Semester.*

## Department of Dance

**Hartwell Hall**  
**(716) 395-2153**

*Chairperson:* Jacqueline Davis. *Distinguished University Professor:* Garth Fagan. *Professor:* Sondra H. Fraleigh. *Associate Professors:* Jacqueline Davis, Santo Giglio, Clyde Morgan, Susannah Newman. *Assistant Professors:* Rosalie Jones (Daystar), Khalid Saleem, Juanita Suarez, Wallie Wolfgruber. *Lecturer:* Jacqueline Barlow, Edward Murphy, Marianne Reilly, Patricia Simmons, Leslie Tillotson. *Professional Employees:* J.J. Kaufman, Gregory H. Ketchum, Mark Olivieri, Christian Tucker, Adam West.

SUNY College at Brockport is an accredited institutional member of the National Association of Schools of Dance, and offers the most broadly based dance program in the SUNY system. The Department serves students with varied backgrounds, some entering with considerable experience in dance technique and performance; some with minimal previous experience. Many dance majors are interested in dance performance as a career and select SUNY Brockport because of its high degree of professionalism in a strong liberal arts setting. Others have just discovered dance and are eager to study it in depth with the possibility of continuing to the graduate level. Many students are interested in dance education or one of the other areas of emphasis offered by our diversified faculty. Students have the opportunity to prepare themselves for professional dance careers through participation in the Department of Dance touring companies: DANSCORE, a contemporary dance ensemble, and SANKOFA, an African dance and drum ensemble. Besides being directed by faculty and guest artists, students have numerous occasions to create and perform their own works in formal and informal settings. Opportunities for a semester of foreign study in dance are available and encouraged.

A degree in dance can lead to graduate study or work in: performance, choreography, designing (lights, costumes, sets), notation, movement analysis, dance reconstruction, teaching, technical work, management, dance history, research, criticism, therapy, dance music and accompaniment, kinesiology, dance science/medicine, somatics, administration, or other fields.

### **Programs in Dance:**

- (1) BA or BS degree in dance studies (often coupled with a second major)
- (2) BFA degree in dance
- (3) BA or BS degree with a major in arts for children and specialty in dance
- (4) Minor in dance
- (5) MA degree in dance
- (6) MFA degree in dance
- (7) MA with K–12 dance teacher certification

**Required Auditions**

All students wishing to major or minor in dance must pass an audition and enroll in DNS 204 and DNS 205, prerequisites for other required courses in the dance major. Contact the Department of Dance for audition dates and information.

Three auditions are held each year; DNS 204 and DNS 205 are offered only in the fall. Students may enroll in elective dance courses before they have successfully completed the audition process.

Students may enter the dance major or minor as freshmen, sophomores or juniors. As a rule, BA/BS degrees in dance studies and dance minor requirements can be completed during two academic years. Careful planning of course sequences and consultation with faculty advisors is essential for all programs.

The BFA dance major requires 85 credits in dance (out of 120) and emphasizes preparation for performance-related careers.

The BA/BS dance studies major requires 35 (out of 120) credits; up to 19 additional elective dance credits, however, may be taken to meet degree requirements. Many dance studies majors also complete requirements for a minor or second major in another discipline.

Note to transfer students: Transfer credits in dance are usually accepted as dance electives. A maximum of 18 credits may be transferred into the BA/BS dance major and 42 into the BFA.

Assignment to an appropriate level of Dance Technique (beginning, intermediate, advanced) will be based on a placement examination each semester.

**Major Requirements****BA/BS in Dance Studies**

<b>Dance Technique (12 credits)</b>		<b>Credits</b>
DNS 204	Dance Conditioning Lab	2
DNS 205	Beginning Technique and Survey of Dance and a minimum of seven credits from the following:	3
DNS 245-249	Dance Technique and Theory: Beginning	3
DNS 345-350	Dance Technique and Theory: Intermediate	3
DNS 445-450	Dance Technique and Theory: Advanced	3
DNS 330	African Dance II	3
DNS 433	African Dance III	3
DNS 454*	Dance Styles	1-4

\*A repeatable course number for ballet, musical theater, jazz, tap and special topics.

**Choreography: (5 credits)**

DNS 208	Dance Production Practicum	0
DNS 364	Dance Improvisation	2
DNS 306	Beginning Dance Composition	3

**Theory: (12 credits)**

DNS 206	20th-century Dance: Issues and Styles	3
	<b>OR</b>	
DNS 316	History and Development of Dance	
MUS 300	Music for Dance	3
MUS 420	Music Literature for Dance	3
DNS 305*	Kinesiology	3
	<b>OR</b>	
DNS 375	Introduction to Laban Movement Analysis	

\*BIO 221 is a prerequisite for DNS 305 and can be used as a Breadth Component requirement.

**Electives: (6 credits)**

Upper-division dance electives selected by advisement

6

**Total:****35**

Grades of "C" or better are required in all 35 dance studies credits.

**BFA in Dance****Dance Technique (29 credits)**

Must complete at least two semesters of DNS 445-450 (advanced level modern dance) and two semesters advanced-level study in one or two other forms.

		<b>Credits</b>
DNS 204	Dance Conditioning Lab	2
DNS 205	Beginning Dance Technique and Survey and 24 credits selected from the following:	3
DNS 245–249	Dance Technique and Theory: Beginning	3
DNS 345–350	Dance Technique and Theory: Intermediate	3
DNS 445–450	Dance Technique and Theory: Advanced	3
DNS 330	African Dance II	3
DNS 433	African Dance III	3
DNS 454*	Dance Styles	1–4

\*A repeatable course number for ballet, musical theater, jazz, tap and special topics.

**Choreography and Performance (20 credits)**

DNS 364	Dance Improvisation	2
DNS 306	Beginning Dance Composition	3
DNS 430	Intermediate Dance Composition	3
DNS 424	Dance Repertory and Literature I	3
DNS 425	Dance Repertory and Literature II	3
DNS 427	Dance Performance Techniques	3
DNS 49X	Danscore	3
	<b>OR</b>	
DNS 4XX	Sankofa	

**Music for Dance: (6 credits)**

MUS 300	Music for Dance	3
MUS 420	Music Literature for Dance	3

**History and Movement Theory: (15 credits)**

DNS 206	20th-century Dance: Issues and Styles	3
DNS 316	History and Development of Dance	3
DNS 375	Introduction to Laban Movement Analysis	3
	<b>OR</b>	
DNS 461	Labanotation DNS 305* Kinesiology	3
DNS 315	Dynamic Balance	3
	<b>OR</b>	
DNS 452	Somatics	
	<b>OR</b>	
DNS 480	Dance Science and Injury Prevention	

\*BIO 221 is a prerequisite for DNS 305 and can be used as a Breadth Component requirement.

**Dance Production: (3 credits)**

DNS 207	Dance Production	3
DNS 208	Dance Production Practicum	0

**Seminar: (3 credits)**

DNS 495	Senior Seminar in Dance	3
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<b>Electives: (9 credits)</b>	<b>9</b>
Any upper-division dance courses. THE 221 Acting I and ART 212 3-Dimensional Design may also be used.	
<b>Total:</b>	<b>85</b>

Grades of “C” or better are required in all 85 dance major credits.

The BFA degree in dance requires 35 General Education credits in addition to the 85 credit dance major. A student who meets the General Education requirements with fewer than 35 credits may select any non-dance electives. Except for one Fine Arts Breadth Component course, no DNS courses may be used. This policy is intended to insure breadth of experience within the BFA degree. A student who takes additional dance or other courses will graduate with more than the required minimum 120 credits.

### **Interdisciplinary Arts for Children: Dance Specialty**

Students wishing to major in Arts for Children with a dance specialty should contact the Department of Dance for information about the required entrance audition. A minimum of “C” must be maintained in all required courses.

#### **Core Courses: (6 Credits)**

IAC 280 (A)	Introduction to Related Arts for Children (fall only) <sup>1</sup>	3
IAC 491 (A)	Seminar in Arts for Children (spring only) <sup>2</sup>	3

**Interdisciplinary Core: 6**

#### **Dance Specialty Courses: (21 Credits)**

DNS 204 (B)	Dance Conditioning Lab (fall only)	2
DNS 205 (A)	Beginning Technique and Survey of Dance (fall only)	3
DNS 364 (A)	Dance Improvisation (spring only) <sup>3</sup>	2
DNS 454 (B)	Dance Styles <sup>4</sup>	2
DNS 483 (A)	Children’s Dance I (fall only)	3
DNS 484 (B)	Children’s Dance II (spring only) <sup>5</sup>	3

#### **One of the following:**

DNS 302 (A)	Social Forms of the Dance	
	<b>OR</b>	
DNS 330 (A)	African Dance II <sup>6</sup>	
	<b>OR</b>	
DNS 316 (A,W)	History and Development of Dance	3

#### **One of the following:**

DNS 306 (A)	Beginning Dance Composition <sup>7</sup>	
DNS 375 (A)	Introduction to Laban Movement Analysis (spring only) <sup>8</sup>	3
	<b>Dance Specialty:</b>	<b>21</b>

<sup>1</sup> This course must be taken as soon as possible after entering the program.

<sup>2</sup> This course must be taken by all IARC majors at the conclusion of program of study.

<sup>3</sup> Prerequisite: DNS 205 and MUS 300.

<sup>4</sup> Prerequisite: DNS 205 or instructor’s permission.

<sup>5</sup> Prerequisite: Instructor’s permission.

<sup>6</sup> Prerequisite: DNS 106 or instructor’s permission.

<sup>7</sup> Prerequisite: DNS 205, MUS 300, and DNS 364

<sup>8</sup> Prerequisite: DNS 205 or instructor’s permission.

**Arts Block: (21 Credits)**

## Art

ART 101 (A,P)	Visual Art Experience	3
ART 417 (B)	Methods of Teaching Art on the Elementary Level <sup>9</sup>	3

## Music

MUS 300 (A)	Music for Dance	3
MUS 487 (A)	Music and the Child <sup>10</sup>	3

## Theatre

THE 281 (B)	Creative Drama	3
THE 353 (A)	Children's Theatre	3

**Elective**

THE 365 (A)	Puppet Theatre OR	
ENL 482 (A)	Children's Literature	3

**Arts Block:****21****Total:****48****Minor in Dance**

Students may declare a dance minor on a contractual basis only. The minor is 18 credits in dance selected with departmental advisement. An audition is required for entrance into the dance minor program, and courses must include DNS 205 and one semester of Dance Technique and Theory.

**General Education courses** in dance which fulfill the Fine Arts Breadth Component are:

DNS 102	Traditional Dance Jazz
DNS 103	Traditional Dance Tap
DNS 104	Traditional Dance Ballet
DNS 105	Traditional Dance Afro-Caribbean
DNS 106	Traditional Dance African
DNS 115	Introduction to Dance
DNS 125	Dance in America
DNS 200	Traditional Dance Styles
DNS 225	Movement and Self-Awareness

For BA/BS in dance studies majors, these courses count toward the maximum of 54 credits in dance, as well as for one Breadth Component requirement in fine arts.

## Dance Courses

**DNS 102 Traditional Dance Jazz (A,P).** A study of selected traditional jazz dance forms and development of skills through studio experience. The artistic and educational uses of traditional jazz dances. Reading along with experiencing the recreational value of the traditional jazz dance styles. 3 Cr.

**DNS 103 Traditional Dance Tap (A,P).** A study of selected traditional tap dance forms and development of skills through studio experience. The artistic and educational uses of traditional tap dances. Reading along with experiencing the recreational value of the traditional tap dance styles. 3 Cr.

**DNS 104 Traditional Dance Ballet (A,P).** A study of selected traditional ballet dance forms and development of skills through studio experience. The artistic and educational uses of traditional ballet. Reading along with experiencing the recreational value of the traditional ballet dance styles. 3 Cr.

**DNS 105 Traditional Dance Afro-Caribbean (A,P).** A study of selected traditional Afro Caribbean dance forms and development of skills through studio experience. The artistic and educational uses of traditional Afro-Caribbean dances. Reading along with experiencing the recreational value of the traditional Afro-Caribbean dance styles. 3 Cr.

<sup>9</sup> Prerequisite: An introductory art course or instructor's permission.

<sup>10</sup> Prerequisite: MUS 105 or instructor's permission.

**DNS 106 Traditional Dance African (A,P).** A study of selected traditional African dance forms and development of skills through studio experience. The artistic and educational uses of traditional African dances. Reading, along with experiencing the recreational value of the traditional African dance styles. *3 Cr.*

**DNS 115 Introduction to Dance (A,P).** Provides an introduction to the study of dance as an art form and its relation to other art forms, and considers the role of dance in history and society. Includes studio classes in elementary modern dance technique, fundamentals of movement, elements of rhythm and spatial awareness, simple composition and improvisational dance studies. Provides the non-major with an awareness of the aesthetics and creative processes of dance. *3 Cr. Every Semester.*

**DNS 200 Traditional Dance Styles (A,P).** Provides a study of selected traditional dance forms and development of skills through studio experience. Includes traditional dance styles such as folk and country dance, African, Afro-Caribbean dance, jazz, tap and ballet. Covers the artistic and educational uses of traditional dances, while allowing students to experience the recreational value of traditional dance styles. DNS 200 can be repeated, but only three credits may be used toward the 120 credits required for graduation. *3 Cr.*

**DNS 204 Dance Conditioning Lab (B).** Explores conditioning methods and materials/equipment for dancers including discussions of wellness issues (i.e., stress management, diet, rest, etc.). Students are introduced to the Bodywork Studio and given conditioning programs tailored to their needs. Focus is on providing information and dance-specific materials appropriate for independent use. *2 Cr.*

**DNS 205 Beginning Technique and Survey of Dance (A).** *Prerequisite: Must pass audition prior to enrollment.* Provides an introduction to the Department of Dance and to the many aspects of the dance profession. Covers modern dance technique, improvisation, and dance composition assignments. Discusses pertinent topics in dance. Prerequisite to all other dance major courses. Includes studies in dance science and somatics. *3 Cr. Fall.*

**DNS 206 20th-century Dance: Issues and Styles (A,B,W).** Provides for the study of the origin and evolution of 20th-century dance; important dance artists and their work; contemporary forms, trends and styles; a survey of dance literature through film, and video and written materials. *3 Cr. Fall.*

**DNS 207 Dance Production (B).** Covers all aspects of dance production including light, stage management, costume, scenery and properties, and dance design as an art. Requires extensive evening crew work. While enrolled in DNS 207, students may not enroll in evening classes or perform in major Hartwell productions without instructor's permission. *3 Cr. Fall.*

**DNS 208 Dance Production Practicum (B).** A practicum experience which provides an opportunity to develop an understanding of the dance production process. Students registered for DNS 208 should not take night classes or perform in dance concerts. *0 Cr. Spring.*

**DNS 225 Movement and Self Awareness (A,P).** Enables students to improve movement habits and increase self-awareness through effective and efficient movement. Develops awareness of postural and movement characteristics, and observational skills for everyday movement and dance. Utilizes both movement and touch. *3 Cr. Every Semester.*

**DNS 232 African Music and Drumming for Dance (A,P).** *Cross-listed with AAS 232.* Studies selected traditional musical instruments for dance accompaniment; and develops performance skills and techniques through studio and live performance applications. Explores traditional styles and their social and artistic needs for formal religious and recreational application. Also explores modern educational and cultural usages in African schools and colleges. *3 Cr. Every Semester.*

**DNS 245, 247, 249 Dance Technique and Theory: Beginning (A).** *Prerequisite: Instructor's permission.* Entails a series of beginning-level courses to train the dancer to respond to a broad range of movement demands. Focuses primarily on modern dance and ballet technique. Placement in a particular level is determined by previous training and skill rather than academic standing. Includes studies in dance science and somatics. *3 Cr. Spring.*

**DNS 305 Kinesiology for Dancers (A).** *Prerequisites: BIO 221 and DNS 205.* Explores the mechanical, physiological and anatomical requirements of specific dance techniques; limitation of the body in performing these techniques; and methods of safely extending the body's capacity for performance. *3 Cr. Spring.*

**DNS 306 Beginning Dance Composition (A).** *Prerequisites: DNS 205, MUS 300, and DNS 364.* Allows for beginning work in composition. Requires students to choreograph short studies and short dances as they learn the various elements of composition. *3 Cr.*

**DNS 313 Movement for Theater (A).** Develops dance skills as related to basic dance forms commonly used in theater productions. Allows for execution of basic dance forms such as jazz, tap and modern dance for the theatre; and provides studies in techniques of movement with emphasis on the performance aspect. 3 Cr.

**DNS 315 Dynamic Balance: Movement Theories (A).** Prerequisites or corequisites: DNS 305, and *inter mediate or advanced techniques*. Allows for the performance of skills from the work of Bartienieff, F. Alexander, L. Sweigard and others; relating of kinesiological principles to the improvement of human movement patterns; significance of the mind/body relationship; and application of skills and principles to one's own performance. 3 Cr.

**DNS 316 History and Development of Dance (A,W).** Surveys the history of dance as a cultural medium from prehistoric times to the early years of the 20th century, and the roles of women and men in dance performance, choreography, literature and education. Emphasizes dance in Western cultures, non-Western influences and African-American dance. Has a strong writing component. 3 Cr. *Spring*.

**DNS 330 African Dance II (A).** *Cross-listed as AAS 330. Prerequisite: DNS 106 or instructor's permission.* Provides a more detailed examination of the content of DNS 106. Provides background of the African dance with historical linkages with dance movement forms within the Afro-American, Caribbean and Latin American setting; a general survey of the material of the dance; the structure and design of African dances in relation to ceremonial and recreational forms, e.g. linear circular forms, massed and team dances; and social organization of the dance. 3 Cr.

**DNS 339 Survey of Tap Dance II (A).** Prerequisite: DNS 103 or instructor's permission. Covers complex rhythmic and technical skills; familiarity with periods, personalities and specific contributions involved in the development of tap dance; notation of dance steps in terms of vocabulary and rhythmic components; and the development of technique that focuses on rapidity of movement articulation and complex sequential patterns of movement, for intermediate/advanced dancers. 3 Cr.

**DNS 345-350 Dance Technique and Theory: Intermediate (A).** Prerequisites: DNS 205 and *instructor's permission*. Entails a series of courses on the intermediate level to train the dancer's body to respond to a broad range of movement demands. Focuses primarily on modern dance and ballet technique. Placement in a particular section is determined by previous training and skill rather

than academic standing. Includes studies in dance science and somatics. 3 Cr. *Every Semester*.

**DNS 352 Ballet Technique II (A).** Prerequisite: DNS 104 or *instructor's permission*. Provides exercises performed at the barre; and center, allegro and adagio combinations and their relationship to developing physical skill. Covers phrasing, musicality and performance qualities; and ballet terminology and how to communicate its use. Provides exercises and performance class. 3 Cr.

**DNS 360 Philosophy and Aesthetics of Dance (A).** Explores dance as art, ritual and play; the aesthetic attitude, and specific aesthetic questions in relation to dance; several philosophical perspectives in relation to dance; the role of perception in dance; dance mythology and world-views; and dance criticism. 3 Cr.

**DNS 364 Dance Improvisation: Technique and Theory (A).** Prerequisites: DNS 205 and MUS 300 or 420. Provides beginning dance and movement improvisation as a compositional and performance technique, covers historical background and relationship to other arts, and develops skill in improvising dance movement and structuring dance improvisations. 2 Cr. *Spring*.

**DNS 371 Modern Dance Technique I (B).** Provides an introduction to contemporary modern dance technique and theoretical background including an appreciation of historical and aesthetic perspectives of modern dance and movement vocabulary. Focuses on acquisition of basic dance skills, conditioning of the body and increased movement body awareness in the studio. Requires concert attendance and discussion of contemporary dance in relation to other dance and art forms. 3 Cr.

**DNS 372 Modern Dance Technique II (B).** Prerequisite: DNS 371 or *equivalent*. Continues DNS 371 for students not majoring in dance. Develops motor skills in modern dance, dance vocabulary, body awareness, study of dynamics and rhythm. Emphasizes modern dance technique, but also employs movement exploration, improvisation, basic composition, concert attendance, dance films and discussion. 3 Cr.

**DNS 375 Introduction to Laban Movement Analysis (A).** Prerequisite: DNS 205 or *instructor's permission*. Introduction to Rudolf Laban's system of movement analysis, with an emphasis on qualitative description of movement. Sometimes called Effort/Shape, Laban Movement Analysis provides a structure for intellectual and physical understanding of the body in motion. Course work includes reading, observations of live and recorded movement, lectures, and movement activities. 3 Cr. *Spring*.

**DNS 399 Independent Study.** To be defined in consultation with the instructor-sponsor and in accordance with the procedures of the Office of Academic Advisement prior to registration. 1–3 Cr.

**DNS 424 Dance Repertory and Literature I (A).** Prerequisite: Instructor's permission. Covers the relationship of specific dance literature to a broad range of dance works and literature. Enables students to perform works with clarity and feeling; relate knowledge to obtain goals; and study selected dance works in depth. 3 Cr.

**DNS 425 Dance Repertory and Literature II (A).** Prerequisite: *Instructor's permission.* Enables students to become familiar with a selected body of choreographed works through an in-depth study of the dances; and perform a learned repertory for public concerts. 3 Cr.

**DNS 427 Dance Performance Techniques (A).** Prerequisites: *Advanced technical work; at least intermediate/advanced technique.* Develops performance skills and awareness of the many components involved in the artistry of the performing dancer, and covers various techniques and aesthetics of performance. 3 Cr.

**DNS 430 Intermediate Dance Composition (A).** Prerequisites: *DNS 205, 306 and MUS 420.* Allows students to further develop skills learned in Beginning Composition, with an emphasis on developing choreographic skills for duet and small groups. 3 Cr. *Spring.*

**DNS 433 African Dance III (A).** Cross-listed as *AAS 433.* Prerequisite: *DNS 330 or instructor's permission.* Covers advanced dance for recreation, and ceremonial dance, including festival, war, court and ritual forms. Enables students to develop a mental, emotional and aesthetic awareness of the performance of an African dance. Examines the role of the African dance in the service of society in campus and off-campus performances. 3 Cr.

**DNS 437 Modern Jazz II (B).** Prerequisite: *DNS 102 or instructor's permission.* Covers basic jazz styles, rhythms, artists and dances; jazz idiom; performing style and definition of movement. Enables students to perceive and coordinate movement quickly in combined steps, and improvise lengthy jazz sequences in the jazz idiom. 3 Cr.

**DNS 440 Summer Dance Workshop (A).** Entails Summer Arts Festival workshops with guest artists. Includes topics such as dance technique, composition, repertory or other special topics. See summer session bulletins for complete descriptions. 2–6 Cr.

**DNS 445–450 Dance Technique and Theory: Advanced (A).** Prerequisite: *DNS 205 and instructor's permission.* Entails a series of courses on the advanced level, designed to train the dancer's body to respond to a broad range of movement demands. Focuses on modern dance and ballet technique. Placement in a particular section is determined by previous training and skill rather than academic standing. Includes studies in dance science and somatics. 3 Cr. *Every Semester.*

**DNS 452 Somatics (A).** Movement re-education for reducing stress and pain, improving posture, balance, mobility and self-image. Processes of somatics derived from Feldenkrais Awareness Through Movement lessons (ATM). Yoga, body/mind centering, dance movement improvisations, and hands-on body work. 3 Cr.

**DNS 454 Dance Styles (B).** Prerequisite: *DNS 205 or instructor's permission.* Provides a concentrated study in a specific dance form (e.g. jazz, tap, ballet I VI, musical theater) or a specific modern dance style (e.g. Martha Graham, Doris Humphrey, Merce Cunningham, Garth Fagan). May be repeated if topics are different. 1–4 Cr. *Every Semester.*

**DNS 460 Foreign Studies in Dance I (A).** Prerequisite: *Junior or senior status and departmental approval.* Explores dance, its uses and forms in another culture. Requires dance performance activities and academic study associated with dance at an institution in another country. The Department of Dance has exchange programs with England, Ghana, and Jamaica. 3–15 Cr. *Every Semester.*

**DNS 462 Lighting for Dance (B).** Prerequisite: *Instructor's permission.* Covers lighting design, techniques, lighting production; relationships among designer, choreographer and other production personnel; and stage lighting as a spatial and temporal art form. Requires students to conceive, design and supervise lighting of a major dance concert. 3 Cr.

**DNS 463 Advanced Production and Design (B).** Prerequisite: *DNS 207.* Concentrates on theatrical elements of dance production and design. Allows students to research, render, and in some cases, execute studio design of scenery, costumes, properties and make-up salient to dance. 3 Cr.

**DNS 480 Dance Science: Injury Prevention (A).** Prerequisites: *BIO 221 and DNS 305.* Examines various dance training techniques, along with current information on injury prevention. Gives both the dancer and the trainer/kinesologist/exercise physiologist an opportunity to understand the special demands of the dance discipline on the body and its health. Includes weight and

resistance training, motor imaging, proprioception, nutrition, skill repetition and the strength/flexibility ratio. *3 Cr. Fall.*

**DNS 481 Dance in Secondary Schools I (A).**

*Prerequisite: Instructor's permission.* Enables students to outline goals for a semester, construct lesson plans, and teach and analyze technique classes. Field practicum. *3 Cr. Fall.*

**DNS 482 Dance in Secondary Schools II (B).**

*Prerequisite: Instructor's permission.* Covers class management/organization. Allows students to develop course outlines and unit and lesson plans, and requires students to teach dance skills and conduct simple lectures and discussion. *3 Cr. Spring.*

**DNS 483 Children's Dance I (A).** Covers basic movement skills applied to creative dance with children, especially in the classroom; pertinent resources for children's dances; and how to work effectively with dancers and dance specialists. Evening class. *3 Cr. Fall.*

**DNS 484 Children's Dance II (B).** *Prerequisite:*

*Instructor's permission.* Provides a basic orientation to teaching creative dance to young children; and covers the use of various approaches, such as problem solving, teacher-directed method, and invention. Allows students to develop curricular materials and evaluate procedures. Conducted with children during an after-school program. *3 Cr. Spring.*

**DNS 485 Dance Education Practicum (B).** *Pre-*

*requisites: Grades of "C" or better in all dance BFA requirements and DNS 481, 482, 483, and 484 and required K-12 school observation.* A one semester student teaching assignment which prepares the dance artist/educator for a specialist teaching position in kindergarten through 12th grade school settings. Under college and master teacher school supervision, full participation as a member of the school's professional team is expected, including teacher/parent communication and extracurricular activities. Focus is on planning, preparing, presenting, and assessing dance in the curriculum. *12 Cr.*

**DNS 489-491 Sankofa (A).** *Prerequisite: Instru-*

*ctor's permission.* African dance and music performance ensemble; provides an opportunity for study, performance and touring for intermediate and advanced students of African dance. *3 Cr. Every Semester.*

**DNS 495 Senior Seminar in Dance (A).** *Prereq-*

*uisite: Junior or senior dance major.* Prepares students for transition from student life to the professional world. Includes self-evaluation,

finishing unrealized goals as a student at SUNY Brockport, exploring career options, writing a resume, building a portfolio and pursuing job interviews. Involves discussions about the artist in society, the business of dance, companies and careers and the funding and promotion of dance. *3 Cr. Fall.*

**DNS 496-498 DANCORE (A).** *Prerequisite:*

*Instructor's permission.* Modern dance performance ensemble; provides an opportunity for study, performance and touring to intermediate and advanced modern dance students. *3 Cr. Every Semester.*

**DNS 499 Independent Study.** To be defined in

consultation with the instructor-sponsor and in accordance with the procedures of the Office of Academic Advisement prior to registration. *1-6 Cr.*

**MUS 100 Fundamentals of Music for Dance**

**(A).** Provides a study of rhythm and elements of music. Explores the significance of "time" in movements and its importance to rhythmic phrasing in music and dance. *2 Cr. Fall.*

**MUS 201 Computers and Music (A,T).** *Prereq-*

*uisite: MUS 300.* Provides an introduction to computer basics and hands-on experience with music software. Explores computers as used by musicians and artists. Emphasizes sound analysis and digital music production. Surveys electronic and computer music. *3 Cr.*

**MUS 300 Music for Dance (A).** Emphasizes the

correlation between rhythm and dynamics in music and movement, and rhythmic notation in relation to dance. Studies musical techniques needed to provide percussion accompaniment for dance movement. Provides some analysis of simple musical forms, and an introduction to music resources for the dance. *3 Cr. Fall.*

**MUS 420 Music Literature for Dance (A).** *Pre-*

*requisites: MUS 300.* Provides a study of musical literature with particular reference to interrelationships between dance and music; a historical survey; selection of music for dance; and Western classical, jazz, and world music resources. *3 Cr. Spring.*

**MUS 455 Music Resources for Dance (B).** *Pre-*

*requisite: MUS 300.* Explores music materials and resources for use in choreography; techniques of taping and creating taped collages for production; and concerns for original scores. Analyzes musical forms and rhythmic structure; and historical styles of music. *3 Cr.*

## Developmental Disabilities— A Certificate Program

The purpose of the Developmental Disabilities Certificate Program is to support the education and career advancement of New York state and voluntary not-for-profit agency workers in the field of mental retardation and developmental disabilities. Through SUNY Brockport baccalaureate courses, current and future personnel who provide care and services to people with developmental disabilities can obtain valuable knowledge and experience in disability related fields of study.

The curriculum consists of nine credits of core courses, a three-credit internship, and six elective credits, totaling 18 credits. To be eligible for the internship, students must have completed a minimum of two core courses and one elective course or receive permission of the instructor. The internship consists of six hours at the internship site and one hour of classroom time per week.

Courses are offered at a variety of sites and times suited to adult learners. Sites include SUNY Brockport, Lifetime Assistance, Inc., Finger Lakes Disabilities Service Office, and Continuing Developmental Services, Inc. Application to the program is made through the School of Professions.

All courses must be completed within five years from the time of initiating the program and with a minimum grade of "C." A maximum of two courses may be transferred into the program with the consent of the advisory committee. All credits earned in this program are applicable to an academic degree. The certificate is awarded at the completion of all course requirements.

### Core Courses

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

**SWO 478 Developmental Disabilities (A).** Provides examination and analysis of developmental disabilities in individual, family, and group practice experiences; policy and planning in the development, coordination, and impact on delivery services. *3 Cr.*

**PRO 400 Developmental Disabilities Internship (B).** Provides students with the opportunity

to apply the knowledge gained in their core and elective courses in various settings. Includes following the progress of individuals with developmental disabilities in a variety of settings. Coordinates scheduling of experiences in various disciplines with students' educational and career goals and objectives. *3 Cr.*

**PRO 450 Developmental Disabilities: A Lifespan Perspective.** Examines the human lifespan on an age continuum with an emphasis on developmental disabilities. Explores theories of development during nine stages of the human lifespan, each stage covering social, psychological, physiological and spiritual development of both normal development and that of people with developmental disabilities. *3 Cr.*

### Electives

Courses may be chosen with approval from the student's advisor from the areas of Education, Nursing, Social Work, Psychology, Health Science, Communication, Recreation and Leisure, Counselor Education, and Case Management.

## Department of the Earth Sciences

222 Lennon Hall

(716) 395-2636, (716) 395-2416 fax

URL: [www.weather.brockport.edu](http://www.weather.brockport.edu), [earthsci@weather.brockport.edu](mailto:earthsci@weather.brockport.edu)

*Chairperson:* Jose A. Maliekal; *Associate Professor:* Judy A. Massare; *Assistant Professors:* Whitney J. Autin, Mark R. Noll, Scott M. Rochette, James A. Zollweg.

The earth sciences encompass all aspects of earth environments and earth resources. Physical, chemical, biological, and mathematical principles are applied to understand the materials of each component of the earth system, how individual components behave, what kinds of natural changes are taking place within and between these components, what causes these changes, and how human activities might influence the future behavior of the earth system.

The Department of the Earth Sciences offers four majors: *geology*, *meteorology*, *water resources*, and *earth science*. Minors are offered in *geology*, *meteorology*, *earth science*, and the interdisciplinary field of *communications meteorology*.

### Major in Geology

Geology majors must earn a minimum of 42 credits in required core courses and complete two semesters each of physics with lab, calculus and chemistry. This major offers sound training in the study of the earth and its resources and equips the student for graduate studies and a professional career in geochemistry, geophysics, mining, petroleum exploration, hydrogeology, ground water, environmental geology, or marine geology. It also provides a strong background in geology for those who seek employment at the bachelor's level, e.g. as a laboratory or environmental technician, in regulatory agencies, and as field geologists.

Required Core:		Credits
GEL 101	Our Earth	4
GEL 302	Historical Geology	4
GEL 306	Introduction to Paleontology	4
GEL 312	Mineral Science	4
GEL 408	Structural Geology	4
GEL 411	Stratigraphy and Sedimentology	4
GEL 431	Petrology	4
ESC 350	Computational Methods in the Field Sciences	3
ESC 391	Writing in the Earth Sciences	1
ESC 493	Seminar on Earth Science Problems	2
	Designated electives by advisement	8
<b>Total:</b>		<b>42</b>

### Designated Electives: Credits

GEL 415–416	Geomorphology and Landform Lab	4
GEL 457	Geochemistry	4
GEL 462	Groundwater	4
GEL 363–364	Environmental Geology and Environmental Geology Lab	4
GEL 399/499	Independent Study	1–3

### Required Corequisite Courses:

Required Corequisite Courses:		Credits
CHM 205–206	College Chemistry I and II with Lab	8
MTH 201–201	Calculus I and II	6
PHS 201–202	College Physics I and II with Lab	8
<b>Total:</b>		<b>22</b>

**Please note:** ESC and GEL courses other than the designated electives may NOT be taken as credit toward the geology major without written departmental approval. To make normal progress toward the degree, GEL 101 Our Earth, GEL 302 Historical Geology, physics, calculus,

and college chemistry should be completed before entering the junior year. ESC 350 and ESC 391 should be taken by the end of the sophomore year. ESC 493 should be taken in the senior year.

A career as a professional geologist requires knowledge of all the natural sciences. Students who intend to pursue graduate studies should minor in chemistry, physics, mathematics, or biology, depending on their specific field of interest within geology. Recommended supporting courses include:

GEL 314	Optical Mineralogy
GEL 456	Topics in Field Geology of the Northeast
ESC 200	Introduction to Oceanography
ESC 351	Programming in the Earth Sciences
ESC 411–412	Hydrology Lab and Hydrology
ESC 427	Geotechniques of Hazardous Waste
ESC 428	Environmental Remediation Techniques
ESC 455	Introduction to Soils Science

### Minor in Geology

Eighteen credits are required and must include: GEL 101 Our Earth (or GEL 100 and GEL 102), and GEL 302 Historical Geology, and other courses as advised.

### Major in Meteorology

Meteorology majors must earn a minimum of 41 credits in required core courses, complete one year of college-level physics with lab, two semesters of calculus, differential equations, and chemistry. Additional supporting work in the sciences and mathematics is strongly recommended.

This major prepares students for careers in weather forecasting, atmospheric research, environmental consulting and air quality management. The strong physical science orientation of the program allows students to compete in related fields, such as environmental and computer science, hydrology, and alternative energy utilization. The major meets the federal guidelines for meteorologists, enabling graduates to begin careers in federal, state, and private employment.

#### Required Core Courses:

	<b>Credits</b>	
ESC 211	Weather	4
ESC 311	Synoptic Meteorology	4
ESC 312	Weather Forecasting	4
ESC 391	Writing in the Earth Sciences	1
ESC 350	Computational Methods in the Field Sciences	3
ESC 351	Laboratory Experience in Scientific Programming	1
ESC 411–412	Hydrology Lab and Hydrology	
	<b>OR</b>	
ESC 313–314	Environmental Climatology and Lab	4
ESC 415	Physical Meteorology	3
ESC 416	Thermodynamics and the Boundary Layer	3
ESC 417	Dynamic Meteorology	3
ESC 420	Atmospheric Sensing Methods	3
ESC 493	Seminar on Earth Science Problems	2
	Designated electives by advisement	6
	<b>Total:</b>	<b>41</b>

#### Designated Electives:

ESC 200	Introduction to Oceanography	3
ESC 412	Air Pollution Meteorology	3
ESC 411	Hydrology Lab	1
ESC 412	Hydrology	3
ESC 313	Environmental Climatology	3

ESC 314	Climatology Lab	1
ESC 432	Tropical Meteorology	3
ESC 442	Advanced Topics in the Earth Sciences	3
ESC 452	Mesoscale Meteorology	3
ESC 460	Meteorology Internship	1–3
ESC 490	Weather Briefing	1
ESC 399/499	Independent Study	1–3

<b>Required Corequisite Courses</b>		<b>Credits</b>
MTH 201–202	Calculus I, II	6
MTH 455	Differential Equations	3
PHS 201–202	College Physics I, II	8
CHM 205	Chemistry I	4
<b>Total:</b>		<b>21</b>

ESC 350 and ESC 391 should be taken by the end of the sophomore year.

ESC 493 should be taken in the senior year.

Additional mathematics, computer science, or science courses are recommended, depending on individual goals. In some cases, these may be applied toward the major with written departmental approval. Recommended supporting courses, outside of meteorology, include:

CHM 206	College Chemistry II
CSC 212	Programming in BASIC
CSC 219	Programming in C
MTH 203	Calculus III
MTH 281	Discrete Mathematics I
MTH 346	Probability and Statistics I
MTH 471	Numerical Analysis
PHS 300	Classical Physics
PHS 302	Classical Mechanics
PHS 303	Classical Physics Laboratory
PHS 452	Applied Analysis

### **Minor in Meteorology**

Eighteen credits are required, to be selected from the ESC courses required for the meteorology major; includes ESC 211 (or its equivalent) and 311.

### **Minor in Communications Meteorology**

The interdisciplinary communications meteorology minor is described elsewhere in this catalog.

### **Major in Water Resources**

Water resources majors must earn a minimum of 43 credits in required core courses. Additional requirements are two semesters each of calculus, college chemistry with lab, and college physics with lab.

This major prepares students for careers in hydrology, resource management, and pollution control; the course of study includes most courses recommended for federal employment as a hydrologist. The major is offered to meet the growing demand for hydrologists and other water resources professionals by federal, state, and local government agencies; private sector environmental and consulting firms; and industrial and educational institutions.

<b>Required Core Courses:</b>		<b>Credits</b>
GEL 101	Our Earth	4
ESC 211	Weather	4
ESC 307	Fluid Mechanics	3
ESC 350	Computational Methods in the Field Sciences	3
ESC 351	Laboratory Experience in Scientific Programming	1
ESC 391	Writing in the Earth Sciences	1
ESC 411	Hydrology Lab	1

ESC 412	Hydrology	3
ESC 418	Watershed Sciences	3
ESC 493	Seminar in Earth Science Problems	2
GEL 415	Geomorphology	3
GEL 416	Landform Analysis Lab	1
GEL 457	Geochemistry	4
GEL 462	Groundwater	4
	Designated electives by advisement	6
	<b>Total:</b>	<b>43</b>
<b>Designated Electives:</b>		<b>Credits</b>
ESC 313	Environmental Climatology	3
ESC 325	Wetlands Systems	3
ESC 430	Geographic Information Systems	3
ESC 455	Introduction to Soils Science	3
ESC 399/499	Independent Study	1–3
GEL 312	Mineral Science	4
GEL 411	Stratigraphy and Sedimentology	4
BIO 419	Limnology	3
BIO 436	Water Quality Analysis	4
<b>Required Corequisite Courses</b>		
MTH 201–202	Calculus I, II	6
CHM 205–206	Chemistry I, II	8
PHS 201–202	College Physics I, II	8
	<b>Total:</b>	<b>22</b>

ESC 350 and ESC 391 should be taken by the end of the sophomore year.

ESC 493 should be taken in the senior year.

The study of hydrology and water resources depends strongly on skills and knowledge from physics, chemistry, geology, meteorology, mathematics, and computer science. A professional career in water resources is supported by additional course work in these disciplines. Recommended supporting courses outside of water resources include:

BIO 422	Pollution Biology
CHM 303	Analytical Chemistry I
CHM 305–306	Organic Chemistry I and II
ESC 200	Introduction to Oceanography
ESC 311	Synoptic Meteorology
ESC 420	Atmospheric Sensing Methods
ESC 427	Geotechniques of Hazardous Wastes Operations
ESC 428	Environmental Remediation Techniques
GEL 363–364	Environmental Geology and Lab
MTH 455	Differential Equations

### Major in Earth Science

Earth Science majors must earn a minimum of 32 credits in the earth sciences and an additional 19 credits in related lab sciences and mathematics. The required core courses are supplemented with electives from each of the disciplines in earth sciences. This interdisciplinary major draws upon the study of geology (the solid earth and its resources), meteorology (the atmosphere and its movement), and water resources (water and its cycling through the environment) to equip graduates for employment in resource management, pollution control, environmental consulting, governmental planning agencies, and elementary or secondary school teaching. They may also pursue graduate study in oceanography, environmental science, resource management and geography.

<b>Required Core (17 Credits):</b>		<b>Credits</b>
GEL 101	Our Earth	4
ESC 200	Introduction to Oceanography	3
ESC 211	Weather	4
ESC 350	Computational Methods in the Field Sciences	3
ESC 391	Writing in the Earth Sciences	1
ESC 493	Seminar in Earth Science Problems	2
<b>Geology Elective (choose one of the following)* (3–4 Credits):</b>		
GEL 302	Historical Geology (4)	
GEL 415	Geomorphology (3)	
GEL 312	Mineral Science (4)	
GEL 363	Environmental Geology (3)	
<b>Meteorology Elective (choose one of the following)* (3–4 credits):</b>		
ESC 313	Environmental Climatology (3)	
ESC 311	Synoptic Meteorology (4)	
ESC 420	Atmospheric Sensing Methods (3)	
ESC 421	Air Pollution (3)	
<b>Water Resources Elective (choose one of the following)* (3–4 Credits):</b>		
ESC 325	Wetland Systems (3)	
ESC 412	Hydrology (3)	
GEL 462	Groundwater (4)	
<b>General Electives (3–6 Credits)</b>		
	Chosen from ESC/GEL courses with advisement	
	<b>ESC/GEL</b>	<b>Minimum Total:</b>
		<b>32</b>
<b>Science Corequisites (8 Credits)</b>		
CHM 205–206	College Chemistry I & II	8
MTH 201	Calculus I	3
PHS 115–116	General Physics I & II	8
	<b>OR</b>	
PHS 201–201	College Physics I & II	
	<b>Total:</b>	<b>19</b>

Please note: ESC 350 and ESC 391 should be taken by the end of the sophomore year. ESC 493 should be taken in the senior year.

\*An upper division course from the major requirements corresponding to that elective area may be substituted with written permission, i.e. another course required for the geology major may be used in place of GEL 302, 415, 363, or 312.

### Minor in Earth Science

Eighteen credits are required, and must include ESC 200, 211, and GEL 101.

### Policy on Majors and Minors in the Earth Sciences

Majors within the Earth Sciences Department are strongly encouraged to have second majors or major/minor combinations with chemistry, physics, biology, mathematics or computer sciences rather than within the department. Courses applied towards fulfilling the major CANNOT also be applied to a minor within the department. Where the same courses are required for both the major and minor, the minor work must be 18 credits beyond those commonly required credits.

## Earth Sciences Courses

**ESC 102 Elements of Geography (A).** Locating, describing, and explaining physical processes and features of the earth; relating them to cultural, economic, and political activities of people. Includes location and characterization of places; human-environment interactions; and unifying features of regions. Goal: to understand how earth processes and features affect and are affected by human activities. NOT ACCEPTABLE CREDIT TOWARD ANY MAJOR OR MINOR OFFERED THROUGH THE EARTH SCIENCES DEPARTMENT. 4 Cr. Fall, Spring.

**ESC 200 Introduction to Oceanography (A,N,E).** Covers fundamental knowledge concerning the oceans, techniques and instruments utilized in the study of the oceans, environmental problems relating to oceans and their resources. Lecture only. 3 Cr. Fall.

**ESC 202 Lab Experiences in Oceanography (A).** Provides laboratory activities concerning physical, chemical, biological and geological aspects of oceanography. Also familiarizes students with techniques, equipment and specimens. One three-hour laboratory per week. May be taken with or following ESC 200. 1 Cr.

**ESC 210 Weather (A,N,E).** Studies the composition of the atmosphere, motions and forces, energy flow, clouds, precipitation, weather systems, violent weather and atmospheric electricity, and sound and light phenomena. Covers the bases of scientific inquiry in atmospheric investigations, emphasizing weather study as it demonstrates relationships between directly observed weather and weather systems as depicted on weather maps. Lecture only. (Students taking the course may not take ESC 211.) 3 Cr. Every Semester.

**ESC 211 Weather (A,L,E).** Studies the composition of the atmosphere, motions and forces, energy flow, clouds, precipitation, weather systems, violent weather and atmospheric electricity, and sound and light phenomena. Explores the bases and limitations of scientific inquiry in atmospheric investigations. Includes a laboratory component to construct and analyze weather maps and charts involving surface and upper-level atmospheric soundings. (Students taking this course may not take ESC 210 or 212 for credit.) 4 Cr. Every Semester.

**ESC 212 Laboratory Experiences in General Meteorology (A).** Prerequisite: ESC 210 or equivalent. Provides construction and analysis of weather maps and charts involving surface and upper-level atmospheric soundings, and application of meteorological theory to a study of the local

atmospheric environment. Designed for students who have had ESC 210 or other lecture-only courses in weather. 1 Cr. Every Semester.

**ESC 307 Fluid Mechanics and Hydraulics (A).** Prerequisites: MTH 201, PHS 201. Applies practical laws of fluid mechanics and hydraulics with an emphasis on pipe and open-channel flow. Topics include fluids and their properties; hydroforces; energy transformations; and flow measurements. Extensive use is made of professional quality computer software for hydraulics. 3 Cr. Alternate Spring.

**ESC 311 Synoptic Meteorology (A).** Prerequisite: ESC 211 or equivalent. Explains the synoptic approach to the problem of analysis, understanding and forecasting of the weather. Provides a basic understanding of atmospheric behavior, including knowledge of the mean state, the seasonal variations, and also the possible development of a particular weather situation at any given time. Supplements theory by practical experience in the analysis of weather charts for individual weather occurrences of a variety of types. 4 Cr. Fall.

**ESC 312 Weather Forecasting (A).** Prerequisite: ESC 311. Establishes a physical basis for weather forecasting through practical studies of cases involving radiation, condensation, pressure fields and precipitation formation. Develops objective methods for forecasting weather elements for the Great Lakes area, including severe-weather forecasting. 4 Cr. Spring.

**ESC 313 Environmental Climatology (A).** Prerequisite: ESC 211 or BIO 303. Covers the physical, chemical and biological factors affecting the climates of various earth environments, including meteorological processes affecting forests, soils and cities. Also covers climatic elements, instruments and observations, controls and typical mesoclimates, and physical processes and statistics for describing and analyzing impacts and environmental problems. 3 Cr. Spring.

**ESC 314 Climatology Lab (A).** Prerequisite or corequisite: ESC 313. Covers the measurement of climatic elements, and field and lab description of mesoclimates and local climates. Also covers the equipment, techniques of measurement, and analysis of local climates in team and individual investigations, as well as the observational and analytical skills needed for an understanding of scientific limitations in the climatic study of environmental problems. 1 Cr. Spring.

**ESC 319 Biological Oceanography (A).** Prerequisite: ESC 200 or 201, or instructor's permission. Cross listed as BIO 319. Provides a brief review of the ocean's physical and chemical properties,

followed by an in-depth study of the biology and life history of marine plants and animals. Concludes with discussions on the ecological roles of marine organisms in selected communities, including intertidal, coral reef and deep-sea habitats. 3 Cr. *Alternate Fall.*

**ESC 325 Wetland Systems (A).** *Prerequisites: TWO of the following—BIO 202, GEL 101, ESC 211, Plant Taxonomy, ESC 364.* Covers the soils, plants, and hydrology that are characteristic of wetland systems; the history of attitudes towards and use of these areas; methods of classification of wetlands; legal and regulatory issues; management and preservation strategies; and design and use of constructed wetlands. 3 Cr.

**ESC 350 Computational Methods in the Field Sciences (A).** *Prerequisites: One or more courses in the natural sciences or mathematics.* Covers methods of handling, display and analysis for environmental data. Chooses from a variety of topics, such as: graphical display techniques, use of the computer for input and storage of data, statistical manipulation procedures, numerical analysis routines, and simulation and modeling of processes. Applies techniques for individual projects to each student's field. 3 Cr. *Fall, Spring.*

**ESC 351 Laboratory Experience in Scientific Programming (A).** *Prerequisite or corequisite: ESC 350.* Provides laboratory activities concerning writing scientific computer programs in FORTRAN or C. Covers basic features of FORTRAN or C programming languages including arithmetic computations, control structures, data files, array processing, and modular programming. Also familiarizes students with commonly used numerical methods in earth sciences. 1 Cr. *Spring.*

**ESC 364 Water Resource Issues (A,J,E).** Studies water and hydrologic perspectives on problems of politics, economy and environment. Addresses issues involving the water resource by case studies ranging in scope from local to international. Requires participants to address and debate points of view in selected issues involving water resources. 3 Cr. *Fall, Spring.*

**ESC 391 Writing in the Earth Sciences (A,U).** This course covers style and the conventions of scientific writing including letters, memoranda, proposals, data reports, abstracts, as well as longer technical papers. Emphasizes style requirements of major professional earth science societies and their journals. 1 Cr. *Fall, Spring.*

**ESC 399 Independent Study in Earth Science (A).** *Prerequisite: ESC 200 or ESC 210.* To be defined in consultation with the faculty member sponsor and in accordance with the procedures of the Office of Academic Achievement prior to registration. 1–3 Cr.

**ESC 411 Hydrology Lab (A).** *Prerequisite or corequisite: ESC 412.* Covers measurement of water in streams, stream basins and other parts of the water cycle firsthand in field and laboratory. Provides an understanding of hydrologic equipment, measurement techniques and analytical skills through investigation, including stream discharge, dams and reservoirs, evapotranspiration, snow survey, water quality, and sediment yield. 1 Cr. *Fall.*

**ESC 412 Hydrology (A).** *Prerequisites: MTH 201, ESC 211 or GEL 101, ESC 350 and 391 or instructor permission.* Covers the water cycle, including precipitation, runoff, streams and lakes, ground water, snow and other hydrologic topics. Also covers water storage and processes, analytical skills dealing with hydrologic events, and the utilization and conservation of water resources in terms of its distribution, quality and flow. 3 Cr. *Fall.*

**ESC 415 Physical Meteorology (A).** *Prerequisites: ESC 311, 350 and 391, MTH 201, and PHS 201.* Covers atmospheric thermodynamics; physical processes of condensation and radiation; electrical, optical and acoustical phenomena in the atmosphere; uses of weather radar and meteorological satellites; and methods of probing the atmosphere. 3 Cr. *Alternate Fall.*

**ESC 416 Thermodynamics and the Boundary Layer (A).** *Prerequisites: ESC 311,350 and 391, MTH 201, and PHS 201.* Covers thermodynamic processes and stability in the lower atmospheric layers; transfers of mass, energy; and momentum in the boundary layer, atmospheric dispersion and modeling. 3 Cr. *Alternate Fall.*

**ESC 417 Dynamic Meteorology (A).** *Prerequisites: ESC 312, 350 and 391, PHS 201 and MTH 203 or 455, or PHS 301.* Covers the development of the governing equations of motion, simplifications, introduction to concepts of divergence, circulation, vorticity; mid-latitude synoptic scale motions; and numerical methods and linear perturbation theory. 3 Cr. *Spring.*

**ESC 418 Watershed Sciences (A).** *Prerequisites: ESC 412 or GEL 462, ESC 350 and 391.* The art and science of evaluating water, air and land resources in a watershed to provide scientific information for management policy decisions. Utilizes maps and other physical resource information, sampling, data processing and analysis. 3 Cr. *Spring.*

**ESC 420 Atmospheric Sensing Methods (A).** *Prerequisites: ESC 211 or equivalent, ESC 350 and MTH 122, ESC 391 pre or co-requisite.* Covers the theory of atmospheric sensing equipment: conventional environmental instrumentation,

traditional radar propagation and interpretation, Doppler and profiler implementations, and satellite imagery interpretation. Emphasizes applications to National Weather Service networks and weather forecasting. 3 Cr. *Alternate Spring.*

**ESC 421 Air Pollution Meteorology (A).** *Prerequisite or co-requisites: ESC 350 and 391.* For students, engineers and professional people training to measure air pollution levels or measure and evaluate meteorological parameters which affect the diffusion and concentration of pollutants in the atmosphere. Provides knowledge of the effects of meteorology in air pollution. Covers factors related to site selection, control programs, and interpretation of surveys. 3 Cr. *Alternate Spring.*

**ESC 427 Geotechniques of Hazardous Wastes Operations (A).** *Prerequisite: At least one field course in the earth sciences or equivalent.* Principles and practices of field hydrogeology specializing in hazardous waste site investigations, monitoring and remediation including (1) OSHA 40-hr certified training; (2) emergency spill response; and (3) personal protection equipment; (4) groundwater sampling design, equipment and procedures; (5) quality control and quality assurance programs; (6) remediation techniques and equipment. 3 Cr.

**ESC 430 Geo-Information Systems (A).** *Prerequisites: PC-computer literacy; GEL 101 or ESC 211, 350 and 391 or instructor's permission.* Introduces students to the use of computer-geographic information systems (GIS). Examines the geographic and information data-processing methods associated with earth systems sciences studies. Includes topics such as geographic data selection, analysis and presentation using spatial data-processing hardware and software techniques. Applies use of Earth systems data to develop an individual hands-on study. 3 Cr. *Fall, Spring.*

**ESC 432 Tropical Meteorology (A).** *Prerequisites: ESC 311, 350 and 391, MTH 201, and PHS 201.* Provides a comprehensive understanding of the weather systems and climatic fluctuations of the tropics. Also, covers the atmosphere-ocean interaction at various time scales and discusses the possible influence of the tropical tropospheric events on the weather and climate of the middle latitudes. 3 Cr. *Alternate Spring.*

**ESC 452 Mesoscale Meteorology (A).** *Prerequisites: ESC 312, 350 and 391, MTH 201, and PHS 201.* Examines atmospheric circulations on the mesoscale as defined by observations of meteorological phenomena, the spatial resolution of observational networks, and theory. Atmospheric motion classified in this way will be studied within

the spectrum of the broader atmospheric variability. Perturbations on the mesoscale will be defined on the basis of physical characteristics and temporal evolution. Particular attention will be given to the development and forecasting of severe storms. 3 Cr. *Alternate Spring.*

**ESC 455 Introduction to Soils Science (A).** *Prerequisites: ESC 350 and 391, GEL 101, CHM 205 or instructor's permission.* Covers the formation, properties and characterization of soils, especially those found in New York state; measurement of physical and chemical properties in field and classroom; and management, conservation, and applications of soil survey. 3 Cr. *Fall.*

**ESC 457 Marine Geology—Bahamas (A).** *Prerequisite: Instructor's permission.* Cross-listed as BIO 457. Provides field studies of the geology and ecology of San Salvador Island, The Bahamas. Topic to be investigated by advisement. Two-week off-campus course during winter intersession. 3 Cr. *Winter.*

**ESC 460 Meteorological Internship (A).** *Prerequisite: Instructor's permission.* Provides first-hand knowledge concerning the application of meteorology to industrial and governmental requirements. Requires group work in scientific fields. Allows students to design and conduct applied meteorological research. 1–3 Cr.

**ESC 464 Environmental Internship (A).** *Prerequisites: ESC 411 and 455 or instructor's permission.* Allows for application of skills acquired in course work to selected environmental problems. Directed by professionals in the field; project work must meet their standards. Deals primarily with water, but also may involve air quality, soils and landfill studies. 1–3 Cr.

**ESC 490 Weather Briefing (A).** *Prerequisite: ESC 312.* Familiarizes students with state-of-the-art weather analysis and forecasting systems. Provides for observation and presentation of weather briefings and forecasts using these products. 1 Cr. *Fall.*

**ESC 493 Seminar in Earth Science Problems (A,U).** *Prerequisites: ESC 350 and 391, senior status.* In-depth consideration of an earth sciences topic beyond formal course offerings; synthesis of material from background of courses taken to be applied in technical report. The report will also be presented in a critical, professional setting to faculty and students. 2 Cr. *Fall.*

**ESC 499 Independent Study (A).** *Prerequisites: ESC 200, 210, 350 and 391.* To be defined in consultation with the instructor-sponsor and in accordance with the procedures of the Office of Academic Advisement prior to registration. 1–3 Cr.

## Geology Courses

**GEL 100 Our Earth (A,N,E).** Develops an understanding of our Earth and of the processes that operate within it and upon its surface; and basic scientific principles and Earth phenomena of importance including the observation of rocks, minerals, landforms, structures, volcanoes, earthquakes, water on and beneath the surface, and other natural processes that affect Earth and life. (Students taking this course may not take GEL 101 for credit.) 3 Cr. *Every Semester.*

**GEL 101 Our Earth (A,L,E).** Studies our Earth and the processes operating within and upon it. Covers basic scientific principles and phenomena including mineral and rock formation, volcanoes, earth quakes, landforms, structure, surface and ground water and other natural processes that affect Earth and life. Includes laboratory study of minerals, rocks, maps used by geologists, and aerial photographs. Requires two local field trips. (Students taking this course may not take GEL 100 or 102 for credit.) 4 Cr. *Every Semester.*

**GEL 102 Lab Experiences in Physical Geology (A).** Studies crystals with microscope; identification and genetic interpretation of rocks and minerals; interpretation of topographic and geologic maps and cross-sections; and interpretation of geologic structures from maps and aerial photographs. Requires field study of geological features and materials. 1 Cr. *Every Semester.*

**GEL 302 Historical Geology (A).** *Prerequisite: GEL 101.* Covers the origin and evolution of the Earth and the historical development of life and the North American continent; and the background of the modern concepts of geology, including plate tectonics. Develops observational skills in the laboratory and field. 4 Cr. *Spring.*

**GEL 306 Introduction to Paleontology (A).** *Prerequisites: GEL 101 and 302 or instructor's permission.* Covers the principles of paleontology and the study of fossils including facies and index fossils, environmental control of species morphology, the basis of taxonomy, general biostratigraphic concepts and practices, and the use of fossils in the economic and scientific world. Presents various invertebrate phyla as examples of the concepts. 4 Cr. *Alternate Fall.*

**GEL 312 Mineral Science (A).** *Prerequisite: GEL 101 or instructor's permission; CHM 205.* Introduces the structure and properties of mineral materials with emphasis on principles of bonding, crystal chemistry, crystal symmetry and morphology. Covers composition, atomic arrangement, identification and classification of major mineral groups, their geologic occurrences, and their role in modern technology. Laboratories

focus on crystal symmetry and geometrical crystallography, physical and chemical properties of minerals, and their use in separating and identifying mineral species. Required weekend field trip to Adirondack localities. 4 Cr. *Alternate Fall.*

**GEL 314 Optical Mineralogy (A).** *Prerequisite: GEL 312.* Covers the theory of light transmission through non-opaque solids and their examination using a polarizing microscope, as well as the relation of optical properties to crystal structure and symmetry. Emphasizes the use of microscope techniques in the laboratory for characterizing and identifying crystalline materials as crushed fragments and in thin sections. 4 Cr. *Directed study only.*

**GEL 362 Energy and Mineral Resources Issues (A,J,D,E).** The significance of energy and mineral resources to modern social, economic, and political forces. Current issues involving energy and mineral resources are addressed through local to global case studies. Participants will discuss perspectives on energy and mineral resource development and exploitation, present use and management, and alternatives to current utilization practices. 3 Cr.

**GEL 363 Environmental Geology (A,U,E).** *Prerequisites: GEL 101 and 415, or instructor's permission.* Human interaction with the geologic environment; response of land and water systems; strategies of mitigation and management; emphasis on recognizing natural system behavior; developing solutions to current environmental questions. Weekend field trip required. 3 Cr. *Spring.*

**GEL 364 Environmental Geology Laboratory (A).** *Prerequisite: GEL 101, and credit or enrollment in GEL 463.* Application of geologic principles and techniques to solving modern environmental problems; management of natural resources. Weekend field trip required. 1 Cr. *Spring.*

**GEL 399 Independent Study (A).** *Prerequisite: GEL 302.* To be defined in consultation with the instructor-sponsor and in accordance with the procedures of the Office of Academic Advisement prior to registration. 1-3 Cr.

**GEL 408 Structural Geology (A).** *Prerequisites: ESC, 350 and 391, GEL 302 or instructor's permission.* Covers the principles of mechanical behavior of rocks during deformation; theories of origin of major and minor rock structures (folds, faults, rock cleavage, etc.) and their relationships to each other; and plate tectonics models for some major crustal structures. Emphasizes in the laboratory techniques of analyzing and solving three-dimensional problems, and gathering structural data in the field. Requires a weekend field trip and report. 4 Cr. *Alternate Spring.*

**GEL 411 Stratigraphy and Sedimentology (A).**

*Prerequisites:* ESC 350, and 391, GEL 302. Covers the physical, chemical and biological characteristics of sedimentary materials; sedimentary environments and geologic time; and the application of stratigraphic principles to a variety of problems involving sedimentary rocks in the geologic record. Employs techniques and instruments used in stratigraphy and sedimentology. 4 Cr. Alternate Fall.

**GEL 415 Geomorphology (A,U,E).**

*Prerequisites:* ESC 350 and 391 or GEL 101. Covers the surface features of Earth and their origin. Emphasizes processes, both internal and external, which interact to produce landforms. Stresses an analytical approach to the formulation of valid inferences based on accurate observations. Requires a weekend field trip, and term paper based on library research of approved topic. 3 Cr. Fall.

**GEL 416 Landform Analysis Laboratory (A).**

*Prerequisite or corequisite:* GEL 415. Focuses on the recognition and interpretation of landforms in a variety of geologic and climatic settings. Uses topographic contour maps, airphotos, radar and false color images of Earth's surface obtained from air craft and satellites. Correlates landforms with occurrence of geologic materials. Illustrates applications of geologic principles to human problems. 1 Cr. Fall.

**GEL 431 Petrology (A).**

*Prerequisites:* ESC 350 and ESC 391 or GEL 312. Studies the processes by which igneous, sedimentary, and metamorphic rocks form. Covers the principles of rock examination which reveal operation of those processes, as well as the relationships of rock forming processes to plate tectonics. Entails recognition, description and interpretation of mineralogic and

textural features in hard specimens. 4 Cr. Alternate Spring.

**GEL 456 Topics in Field Geology of the Northeast (A).**

*Prerequisite:* GEL 101 or equivalent and instructor's permission. Aspects of geology of selected regions of the northeastern U.S. from field observations. Techniques of gathering and recording geologic data in the field, interpretation of topographic and geologic maps, and identification/examination of rocks and structures in the field. Two-week field trip with short field projects. Can be repeated for multiple credit with instructor's permission. 3 Cr. Summer.

**GEL 457 Geochemistry (A).**

*Prerequisites:* ESC 350 and 391, GEL 101, CHM 205 and 206. This course will apply basic chemical principles of thermodynamics, kinetics, and equilibrium to the investigation of common geologic problems ranging from the crystallization of silicate melts to surface reactions on soil minerals. The laboratory exercises will focus on application of good laboratory practices to wet chemical and instrumental techniques involving geologic materials. 4 Cr. Alternate Fall.

**GEL 462 Groundwater (A).**

*Prerequisites:* ESC 350, 391 or GEL 101. The study of groundwater; its occurrence, movement and use, and its place in the hydrologic cycle. The origin of aquifers, use and effects of wells, and water quality and groundwater problems are examined. 4 Cr. Spring.

**GEL 499 Independent Study (A).**

*Prerequisites:* ESC 350, 391 or GEL 302. Arranged in consultation with the instructor sponsor and in accordance with the procedures of the Office of Academic Advisement prior to registration. 1-3 Cr.

## Economics—

### See Business Administration and Economics

## Department of Education and Human Development

**282 Faculty Office Building  
(716) 395-2205**

*Chairperson and Professor:* Morris I. Beers; *Distinguished Service Professor:* Betsy C. Balzano; *Professors:* Morris I. Beers. *Associate Professors:* Gerald Lee Begy; Christine E. Murray; Arthur E. Smith. *Assistant Professors:* Mary Corey; Dana Hathcock; Susan Novinger; Scott Robinson; Lynae Sakshaug; Robin Umber; Conrad Van Voorst; Peter Veronesi. *Lecturers:* Karen Slonski-Fowler; William R. Veenis. *Director of Field Experience:* Diane Maurer. *Coordinator of Elementary and Secondary Certification:* Nancy DiPasquale.

The Department of Education and Human Development offers teacher certification programs in elementary and secondary education. Students pursuing a degree program with certification must also complete an appropriate academic major.

**Due to new New York State Standards for Teacher Certification all programs are currently under revision. Please contact the Department of Education and Human Development for current information (716) 395-2205.**

### Admission Requirements

There are specific requirements for acceptance to all teacher education programs and additional requirements for maintaining eligibility. For both elementary and secondary certification students, admission to the program requires a separate application, usually prior to entering the junior year. Applications are available from the Department of Education and Human Development, as well as from the Admissions Office. All programs require a minimum cumulative GPA for entrance and for continued eligibility. All programs are very competitive and not all qualified students may be accepted in periods of high demand.

### Special Note

Many teacher preparation programs require more than 120 credits and may require more than eight semesters of full-time study. In addition, many programs require availability during school hours for completion of field experience requirements.

### Important Notice

**National Council for Accreditation of Teacher Education (NCATE) standards and revised NY State Board of Regents policies will lead to changes in education programs and certification requirements during the term of this catalog. Check with the Department of Education and Human Development for the most current information.**

### Elementary Teacher Certification

Changes by the New York State Education Department of Education will lead to two certification titles: Early Childhood (birth to grade 2) and Childhood (grade 1 to grade 6). Both of these new programs are presently under review. **Check with the Department of Education and Human Development for the most current information.**

Once Brockport's programs are approved they will provide teacher preparation for certification that is eligible for the College's recommendation for a teaching credential. New programs will satisfy New York State academic requirements and, under the terms of the Interstate Agreement, the academic requirements for an initial certificate in many other states. Successful completion of the liberal arts and sciences portion and of the written assessment of teaching skills portion of the New York State Teacher Certification Examinations will continue to be required for initial certification. Candidates should inquire about these test requirements at the time of program admission. Please refer to Teacher Preparation at SUNY Brockport in this catalog for additional information on certification.

Certification in any of the Elementary areas will continue to require an appropriate major in an academic area. Specific advisement is provided for both the academic major and the certification program. Students should contact the Department of Education and Human Development and their academic major department as early as possible when planning their programs.

**The last possible date for admission into the current Elementary (K–6) program listed here is Fall 2001 to begin the program in Spring 2002.**

**Elementary Teacher Certification Program Requirements**

**In order to be eligible for Elementary (PreK–6) certification under present New York State requirements, the Bachelor’s degree, all certification course work, testing and student teaching must be completed prior to February 1, 2004.**

- I. General Education Requirements: Students must meet the general education requirements in effect at the time of acceptance.
- II. Pre-professional Preparation: Academic Major. Students seeking certification in any of the proposed programs must complete an academic major in a discipline generally considered as one of the liberal arts or sciences. Business, other professional programs or majors, and performance majors such as dance do not satisfy this requirement. The department recommends that students, in consultation with an advisor in the Department of Education and Human Development, consider a major related to subjects taught at the elementary level. **A complete list of acceptable majors is available from the Department of Education and Human Development.**
- III. Pre-professional Preparation: Arts and Science Cognates. The following courses are required for teacher certification at the elementary school level, some of which may also satisfy requirements for General Education and/or the academic major.
  - A. Foreign Language—the equivalent of one year of college-level study in a language other than English.
  - B. English—in addition to the basic College Composition course (ENL 112) or equivalent transfer course:
 

ENL 482	Children’s Literature
*Three additional credits in an advanced writing course such as the following:	
ENL 210	Creative Writing
ENL 303	Introduction to Literary Analysis (ENL majors only)
ENL 305	Advanced Composition
  - C. Mathematics—in addition to the basic Quantitative Skills (QNT 111) or equivalent transfer course:
 

MTH 313	Mathematics for Elementary Teachers I
MTH 314	Mathematics for Elementary Teachers II
  - D. Science
 

NAS 273	Investigation in the Physical Sciences
*Six additional credits by advisement; three credits to be selected from courses whose content includes field natural science and three credits to be selected from courses in earth science.	
  - E. Social Studies
 

ESC 102	Elements of Geography
*Six additional credits by advisement; three credits to be selected from courses dealing with a culture other than the student’s own and three credits from courses such as the following:	
HST 102	The Modern World
HST 212	Modern America
SOC 210	Social Problems
PLS 113	American Political System

## IV. Professional Preparation: Education Courses (29 credits)

**Phase I** (may be taken in sequence, over more than one semester, but prior to Phase 2):

	<b>Credits</b>	
PSH 384	Developmental Psychology	3
EDI 320*	Self, School and Society	3
EDI 321*	Elementary Classroom Observation	1
EDI 325	Understanding the Exceptional Learner	3
HLS 370	Drug Education for Teachers	1
	(Cumulative GPA of 2.5 or higher must be maintained in order to enroll in EDI 320 and all courses in Phases 2, 3 and 4.)	

**Phase 2** (must be taken concurrently):

EDI 405	Literacy I	3
EDI 406**	Dimensions of Teaching with Lab	6

**Phase 3** (must be taken concurrently):

EDI 415	Literacy II	3
EDI 416**	Applications of Teaching with Lab	6

<b>Total:</b>	<b>29</b>
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## V. Professional Preparation: Student Teaching and Seminar (14 credits)

**Phase 4** (must be taken concurrently):

EDI 455	Practicum in Elementary Education	12
EDI 456**	Professional Development Seminar	2

<b>Total:</b>	<b>14</b>
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**NOTE:** A complete list of possible courses to meet these requirements may be obtained from the department.

\* School-based observations and participation beyond class time are required for this course.

\*\* Students are responsible for their own transportation for all off-campus field experiences.

### Bilingual-Multicultural Education Certification

This program allows a student who is pursuing elementary education certification to extend that certificate to bilingual certification. A teacher thus prepared is able to teach in either a monolingual or a bilingual Spanish-English elementary school classroom.

To meet the requirements for both the elementary and the bilingual extension certification, a student must complete:

- (1) the B option of the Spanish major with a concentration in Bilingual-Multicultural Studies;
- (2) the pre-professional preparation requirements: arts and sciences cognates as described in Item III, under Elementary Pre K–6;
- (3) the Elementary Education Certification program;
- (4) all other College graduation requirements; and
- (5) the language proficiency examinations in both English and Spanish with passing grades.

During the student-teaching portion of the elementary certification program, at least one-half of the experience will be in a bilingual classroom.

#### Prerequisites

1. Completion of 12 credits in Spanish or equivalent through testing.
2. Completion of composition requirement with a grade of “C” or better.

### Secondary Teacher Certification

The Department of Education and Human Development has proposed programs that lead to provisional certification in nine Adolescent (7–12) areas: social studies, English, mathematics, biology, chemistry, earth science, physics, French, and Spanish. The four science areas also include general science.

**The last possible date for admission into the Secondary programs listed here is Spring 2002 to begin the program in Fall 2002.**

**In order to be eligible for Secondary certification under present New York State requirements, the Bachelor's degree, all certification course work, testing and student teaching must be completed prior to February 1, 2004.**

### **Secondary Teacher Certification**

The Department of Education and Human Development offers programs that lead to provisional certification in nine secondary (7–12) areas: social studies, English, mathematics, biology, chemistry, earth science, physics, French and Spanish. The four science areas also include general science.

Students who complete a degree from SUNY Brockport that includes an approved program of teacher preparation for certification are eligible for the College's recommendation for a teaching credential. Approved programs satisfy New York state academic requirements and, under the terms of the Interstate Agreement, the academic requirements for an initial certificate in many other states. Initial certification in New York state requires satisfactory performance on the New York State Liberal Arts and Sciences Test and the written Assessment of Teaching Skills. Please refer to Teacher Preparation at SUNY Brockport in this catalog for additional information on certification.

Each secondary certification area requires an academic major in the subject area of certification. Specific advisement is provided for both the academic major and the certification area. Students interested in teacher certification should contact the Department of Education and Human Development and their academic major department as early as possible when planning their programs. Students are responsible for their own transportation for all off-campus field experiences.

**Admission to current Secondary programs requires a separate application and completion of at least 12 S.H. in the major.**

### **French 7–12**

#### *Program Requirements*

- I. General Education Requirements Students must meet the General Education requirements in effect at the time of acceptance.
- II. Pre-professional Preparation: Academic Major Students must formally declare themselves as French majors in the Department of Foreign Languages and Literatures, and successfully complete all requirements for the major, described under the listing for the Department of Foreign Languages and Literatures in this catalog.

#### III. Additional Requirement (3 credits)

FCE 420      Multiculturalism in the USA

**OR**

CMC 418      Crosscultural Communication

#### IV. Professional Preparation: Education Courses (13 credits)

		<b>Credits</b>
EDI 320*	Self, Schools and Society	3
HLS 370	Drug Education for Teachers	1
PSH 484	Adolescence	3
EDI 449*	Introduction to Teaching Secondary Foreign Language	3
EDI 469*	Methods of Teaching Secondary Foreign Language	3
	<b>Total:</b>	<b>13</b>

V. Professional Preparation: Student Teaching and Senior Seminar  
(must be taken concurrently) (15 credits)

EDI 475	Practicum in Secondary Education	12
EDI 476	Seminar	3
<b>Total:</b>		<b>15</b>

\* School-based observation and participation beyond class time are required for this course.

Prior to admission to EDI 469 Methods in Secondary Foreign Languages, students seeking certification in French or Spanish or Combined French and Spanish must complete six credits of 400-level French and/or Spanish on the SUNY Brockport campus or in a Brockport program abroad. In addition, certification candidates must pass a qualifying examination which covers listening comprehension, speaking, reading and writing of French and/or Spanish. The examination also includes highlights of French and/or Spanish civilization, culture and literature. See catalog descriptions for French and Spanish major requirements under the listing for the Department of Foreign Languages and Literatures.

### Spanish 7–12

#### *Program Requirements*

- I. General Education Requirements: Students must meet the General Education requirements in effect at the time of acceptance.
- II. Pre-professional Preparation: Academic major: Students must formally declare themselves as Spanish majors in the Department of Foreign Languages and Literatures, and successfully complete all requirements for the major, described under the listing for the Department of Foreign Languages and Literatures in this catalog.

III. Additional Requirement (3 credits)

FCE 420	Multiculturalism in the U.S.A.
	or
CMC 418	Crosscultural Communication

IV. Professional Preparation: Education Courses (13 credits)

		<b>Credits</b>
EDI 320*	Self, Schools and Society	3
HLS 370	Drug Education for Teachers	1
PSH 484	Adolescence	3
EDI 449*	Introduction to Teaching Secondary Foreign Language	3
EDI 469*	Methods of Teaching Secondary Foreign Language	3
<b>Total:</b>		<b>3</b>

V. Professional Preparation: Student Teaching and Senior Seminar (must be taken concurrently) (15 credits)

EDI 475	Practicum	12
EDI 476	Seminar	3
<b>Total:</b>		<b>15</b>

\* School-based observation and participation beyond class time is required for this course.

Prior to admission to EDI 469 Methods in Secondary Foreign Languages, students seeking certification in French or Spanish or combined French and Spanish must complete six credits of 400-level French and/or Spanish on the SUNY Brockport campus or in a Brockport program abroad. In addition, certification candidates must pass a qualifying examination which covers listening comprehension, speaking, reading and writing of French and/or Spanish. The examination also includes highlights of French and/or Spanish civilization, culture and literature. See catalog descriptions for French and Spanish major requirements under the listing for the Department of Foreign Languages and Literatures.

**Mathematics 7–12***Program Requirements*

- I. General Education Requirements: Students must meet the General Education requirements in effect at the time of acceptance.
- II. Pre-professional Preparation: Academic Major: Students must formally declare themselves as mathematics majors and successfully complete all requirements for the major described in the listing for the Department of Mathematics in this catalog.
- III. Pre-professional Preparation: Foreign Language: The equivalent of one year of college-level study in a language other than English is required for teacher certification in New York state.

IV. Professional Preparation: Education Courses (13 credits)	<b>Credits</b>
EDI 320* Self, School and Society	3
HLS 370 Drug Education for Teachers	1
PSH 484 Adolescence	3
EDI 446* Introduction to Teaching Secondary Mathematics	3
EDI 466* Methods of Teaching Secondary Mathematics	3
<b>Total:</b>	<b>13</b>
V. Professional Preparation: Student Teaching and Senior Seminar (must be taken concurrently) (15 credits)	
EDI 475 Practicum in Secondary Education	12
EDI 476 Seminar	3
<b>Total:</b>	<b>15</b>

\* School-based observation and participation beyond class time are required for this class.

**Biology and General Science 7–12**

This program is designed to prepare students to teach biology in New York state schools in grades 7–12. In addition to certification in biology, students will meet the New York state requirements for certification in the area of a minor and in general science.

*Program Requirements*

- I. General Education Requirements: Students must meet the General Education requirements in effect at the time of acceptance.
- II. Pre-professional Preparation: Biology Major and Required Minor: Students must formally declare themselves as biology majors and successfully complete all requirements for the major described under the listing for the Department of Biological Sciences in this catalog. Students must also formally declare a minor in one of the following sciences: chemistry, earth science or physics.
- III. Additional Requirement: In addition to the major and minor, students must complete two laboratory science courses in each of the above science areas (total of 16 additional hours) not selected for a major or a minor.
- IV. Pre-professional Preparation: Foreign Language: The equivalent of one year of college-level study in a language other than English is required for teacher certification in New York state.

V. Professional Preparation: Education Courses (13 credits)	<b>Credits</b>
EDI 320* Self, School and Society	3
HLS 370 Drug Education for Teachers	1
PSH 484 Adolescence	3
EDI 447* Introduction to Teaching Secondary Science	3
EDI 467* Methods of Teaching Secondary Science	
<b>OR</b>	
A course in biology lab methods and materials (BIO)	3
<b>Total:</b>	<b>13</b>

VI. Professional Preparation: Student Teaching and Senior Seminar (must be taken concurrently) (15 credits)

EDI 475	Practicum in Secondary Education	12
EDI 476	Seminar	3
<b>Total:</b>		<b>15</b>

\* School-based observation and participation beyond class time are required for this course.

**Chemistry and General Science 7–12**

This program is designed to prepare students to teach chemistry in New York state schools in grades 7–12. In addition to certification in chemistry, students will meet the New York state requirements for certification in the area of a minor and in general science.

*Program Requirements*

I. General Education Requirements: Students must meet the General Education requirements in effect at the time of matriculation.

II. Pre-professional Preparation:

A. Academic major

Students must formally declare themselves as chemistry majors, and successfully complete all requirements for the major, described under the listing for the Department of Chemistry in this catalog. Note that CHM 480 is required for the three credit elective for candidates for teaching certification. Students are encouraged to include additional chemistry electives as their interests and programs allow.

B. Course work in the other sciences (biology, earth sciences, and physics) and mathematics: Students must complete two courses (both with laboratory) in each of these three sciences, and two semesters of calculus. Note that the chemistry major requires calculus-based physics (PHS 201–202) and three semesters of calculus.

C. Academic Minor: Students must formally declare themselves as minors in biology, earth sciences, or physics, and successfully complete all requirements for this minor, described under the listing for the Department of Biological Sciences, Earth Sciences, or Physics in this catalog.

III. Pre-professional Preparation: Foreign Language: The equivalent of one year of college-level study in a language other than English is required for teacher certification in New York state.

IV. Professional Preparation: Education Courses (13 credits)		<b>Credits</b>
EDI 320*	Self, School and Society	3
HLS 370	Drug Education for Teachers	1
PSH 484	Adolescence	3
EDI 447*	Introduction to Teaching Secondary Science	3
EDI 467*	Methods of Teaching Secondary Science	3
<b>Total:</b>		<b>13</b>

V. Professional Preparation: Student Teaching and Senior Seminar (must be taken concurrently) (15 credits)

EDI 475	Practicum in Secondary Education	12
EDI 476	Seminar	3
<b>Total:</b>		<b>15</b>

\* School-based observation and participation beyond class time are required for this course.

**Earth Science and General Science 7–12**

This program is designed to prepare students to teach earth science in New York state schools in grades 7–12. In addition to certification in earth science, students will meet the New York state requirements for certification in general science.

*Program Requirements*

- I. General Education Requirements: Students must meet the General Education requirements in effect at the time of matriculation.
- II. Pre-professional Preparation: Earth Science Major and Required Minor: Students must formally declare themselves as earth science majors, and successfully complete all requirements for the major, described under this listing for the Department of Earth Sciences in this catalog. Students must also formally declare a minor in one of the following sciences: biology, chemistry or physics.
- III. Additional Requirements: In addition to the major and minor, students must complete two laboratory science courses in each of the above science areas (total of 16 additional hours) not selected for a major or a minor.

- IV. Pre-professional Preparation: Foreign Language: The equivalent of one year of college-level study in a language other than English is required for teacher certification in New York state.

V. Professional Preparation: Education Courses (13 credits)		<b>Credits</b>
EDI 320*	Self, School and Society	3
HLS 370	Drug Education for Teachers	1
PSH 484	Adolescence	3
EDI 447*	Introduction to Teaching Secondary Science	3
EDI 467*	Methods of Teaching Secondary Science	3
<b>Total:</b>		<b>13</b>

- VI. Professional Preparation: Student Teaching and Senior Seminar (must be taken concurrently) (15 credits)

EDI 475	Practicum in Secondary Education	12
EDI 476	Seminar	3
<b>Total:</b>		<b>15</b>

\* School-based observation and participation beyond class time are required for this course.

**Physics and General Science 7–12**

This program is designed to prepare students to teach physics in New York state schools in grades 7–12. In addition to certification in physics, students will meet the New York state requirements for certification in the area of a minor and in general science.

*Program Requirements*

- I. General Education Requirements: Students must meet the General Education requirements in effect at the time of matriculation.
- II. Pre-professional Preparation: Physics Major and Required Minor: Students must formally declare themselves as physics majors, and successfully complete all requirements for the major, described under the listing for the Department of Physics in this catalog. Students must also formally declare a minor in one of the following sciences: biology, chemistry or earth sciences.
- III. Additional Requirement: In addition to the major and minor, students must complete two laboratory science courses in each of the above science areas (total of 16 additional hours) not selected for a major or a minor.

- IV. Pre-Professional Preparation: Foreign Language: The equivalent of one year of college-level study in a language other than English is required for teacher certification in New York state.

V. Professional Preparation: Education Courses (13 credits)		<b>Credits</b>
EDI 320*	Self, School and Society	3
HLS 370	Drug Education for Teachers	1
PSH 484	Adolescence	3
EDI 447*	Introduction to Teaching Secondary Science	3
EDI 467*	Methods of Teaching Secondary Science	3
<b>Total:</b>		<b>13</b>

VI. Professional Preparation: Student Teaching and Senior Seminar (must be taken concurrently) (15 credits)

EDI 475	Practicum in Secondary Education	12
EDI 476	Seminar	3
<b>Total:</b>		<b>15</b>

\* School-based observation and participation beyond class time are required for this course.

**Social Studies 7–12**

*Program Requirements*<sup>1</sup>

- I. General Education Requirements: Students must meet the General Education requirements in effect at the time of matriculation.
- II. Pre-professional Preparation: Academic major: Students must formally declare themselves as history majors, and successfully complete all requirements for the major, described under the listing for the Department of History in this catalog.

III. Pre-professional Preparation: Interdisciplinary Social Science Minor (18 credits)

		<b>Credits</b>
PLS 113	American Political Systems	3
ANT 301	Native Americans—Contemporary Issues	3
SOC 210	Social Problems	3
ESC 102	Elements of Geography	3
	A course in Women's Studies (WMS)	3
	and one of the following:	3
ECN 111	Contemporary Economic Problems	
ECN 201	Principles of Economics—Micro	
ECN 202	Principles of Economics—Macro	
<b>Total:</b>		<b>18</b>

Up to six credits in the academic minor may be substituted by advisement. The substitution of another minor may be allowed for students who enter the program with more than 60 credits.

IV. Pre-professional Preparation: Foreign Language: The equivalent of two years of college-level study in a language other than English is required.

V. Professional Preparation: Education Courses (13 credits)

		<b>Credits</b>
EDI 320*	Self, School and Society	3
HLS 370	Drug Education for Teachers	1
PSH 484	Adolescence	3
EDI 448*	Introduction to Teaching Secondary	
	Social Studies	3
EDI 468*	Methods of Teaching Secondary	
	Social Studies	3
<b>Total:</b>		<b>13</b>

VI. Professional Preparation: Student Teaching and Senior Seminar (must be taken concurrently) (15 credits)

EDI 475	Practicum in Secondary Education	12
EDI 476	Seminar	3
<b>Total:</b>		<b>15</b>

\* School-based observation and participation beyond class time are required for this course.

**English 7–12**

*Program Requirements*

- I. General Education Requirements: Students must meet the General Education requirements in effect at the time of matriculation.

II. Pre-professional Preparation: Academic major: Students must formally declare themselves as English majors, and successfully complete all requirements for the major, described under the listing for the Department of English in this catalog.

III. Pre-professional Preparation: Foreign Language: The equivalent of one year of college-level study in a language other than English is required for teacher certification in New York state.

IV. Professional Preparation: Education Courses (13 credits)

	<b>Credits</b>
EDI 320* Self, School and Society	3
HLS 370 Drug Education for Teachers	1
PSH 484 Adolescence	3
EDI 445* Introduction to Teaching Secondary English	3
EDI 465* Methods of Teaching Secondary English	3
<b>Total:</b>	<b>13</b>

V. Professional Preparation: Student Teaching and Senior Seminar (must be taken concurrently) (15 credits)

EDI 475 Practicum in Secondary Education	12
EDI 476 Seminar	3
<b>Total:</b>	<b>15</b>

\* School-based observation and participation beyond class time are required for this course.

### **Bilingual Extension to Secondary and Special Subject Certification**

Individuals certified in a secondary area other than foreign language or a special subject may extend the certificate by meeting the following requirements:

#### *Bilingual Extension Requirements*

- (1) Minor in Spanish with an interdisciplinary concentration in bilingual-multicultural studies. For details see Spanish Minor Track Two under the Department of Foreign Languages and Literatures.
- (2) Satisfactory completion of language proficiency.
- (3) Practicum experience in a bilingual setting.

### Education and Human Development Courses

**EDI 320 Self, School and Society (A).** *Prerequisite:* Admission to the program. Introduces students to the field of education as a profession. Focuses on social, cultural, historical and philosophical foundations of education; changing roles of teachers within contexts of contemporary schools; and clarification of one's own goals in the pursuit of a teaching career. 3 Cr. Fall, Spring.

**EDI 321 Elementary Classroom Observation (B).** *Prerequisite:* Admission to the program. Provides guided observations of elementary school classroom practices and the nature of the elementary school child with accompanying seminars that focus on reflection on experiences and the roles of a teacher. For students accepted into elementary certification program only. School-based observation and participation beyond class time are required for this course. 1 Cr. Fall, Spring.

**EDI 325 Understanding the Exceptional Learner (A).** Provides an introductory overview

of the social, educational, and personal implications of human exceptionality in today's world. Examines issues and concerns related to the identification, instruction, and evaluation of individuals with specific disabilities, as well as extraordinary gifts or talents. Emphasizes the role and responsibility of teachers to maximize individual growth for learners with atypical characteristics or needs. 3 Cr. Fall, Spring.

**EDI 360 Student Literacy Corps I.** Provides opportunities for students to work with individuals to improve their literacy skills. Exposes students to the problem of illiteracy by training them as tutors and placing them in adult literacy or migrant education classes. Assists community organizations in the delivery of educational services. 3 Cr. Fall, Spring.

**EDI 361 Student Literacy Corps II.** Provides opportunities for students to work with individuals to improve their literacy skills. Only open to students who previously participated in EDI 360. Students serve as student mentors to

help coordinate the activities of first-year students. *3 Cr. Fall, Spring.*

**EDI 399 Independent Study (B).** To be defined in consultation with the instructor-sponsor and in accordance with the procedures of the Office of Academic Advisement prior to registration. *1–3 Cr.*

**EDI 405 Literacy I (B).** *Prerequisite: EDI 320, 321; Corequisite: EDI 406.* Explores both atomistic and holistic approaches to literacy development. Provides a foundation in the cognitive, linguistic and physiological bases of reading, and helps students develop their own philosophies of reading and related language arts. Provides reflective, hands-on experiences through outside assignments. *3 Cr. Fall, Spring.*

**EDI 406 Dimensions of Teaching with Lab (B).** *Prerequisite: EDI 320, 321; Corequisite: EDI 405.* Focuses on the tools and methodologies needed for elementary school teaching. Includes elements of effective instruction, classroom management, cooperative learning, motivation, assessment, learning theories, and team building. Uses peer teaching and videos of classroom scenarios in school experiences to reinforce the theoretical content. Develops the realization that teaching is a profession with a distinct body of knowledge. School-based observation and participation beyond class time are required for this course. *6 Cr. Fall, Spring.*

**EDI 415 Literacy II (B).** *Prerequisite: EDI 405, 406; Corequisite: EDI 416.* An extension of Literacy I. Includes such topics as class assessment, diagnosis, and alternative approaches to developing literacy. Allows students to work with an individual child, culminating in a case report. *3 Cr. Fall, Spring.*

**EDI 416 Applications of Teaching with Lab (B).** *Prerequisite: EDI 405, 406; Corequisite: EDI 415.* Focuses on the processes of learning and their application to the specific elementary school content areas of science, social studies, and math. Stresses the integration of writing and reading in all subjects. Features assignments on the development of thematic units, micro-teaching, lesson planning and delivery, and problems of curriculum. Involves field experiences that focus on observation and opportunities to apply student-developed units and lessons. School based observation and participation beyond class time are required for this course. *6 Cr. Fall, Spring.*

**EDI 420 Elementary Education for Language Teachers (B).** A 45-hour institute designed for certified secondary foreign language teachers who wish to extend their certification to teach a language at the elementary school level. Includes such

topics as the nature and development of the elementary school; elementary school curriculum; cognitive, affective, psychomotor, and linguistic development; elements of instruction as applied to teaching a language to elementary children; and development of materials. *3 Cr. Summers.*

**EDI 421 The Bilingual Child (B).** Explores the social, emotional and cognitive implications of being a child who must function as a bilingual in a classroom setting. Relates theoretical knowledge to actual observations as students observe and work with children in a bilingual setting. Requires a case study. *3 Cr. Spring.*

**EDI 422 TESOL: Materials and Techniques (B).** Covers the methods and materials used in teaching English as a second language to children and adults. Competency-based. *3 Cr. Fall.*

**EDI 426 Effective Elements of Instruction (B).** Follows Hunter's model. Combines both theory and actual classroom application of the principles of teaching to an objective. Covers task analysis, monitoring and adjusting to student needs, rate and degree, and retention and motivation. *3 Cr.*

**EDI 445 Introduction to Teaching Secondary English (B).** *Prerequisites: EDI 320, PSH 484 and matriculation in program.* Provides an introduction to teaching English in the secondary schools. Includes such topics as designing instructional objectives, essential elements of instruction, cooperative learning, whole language approach to literacy, and process writing. *3 Cr. Fall, Spring.*

**EDI 446 Introduction to Secondary Mathematics Teaching (B).** *Prerequisites: EDI 320, PSH 484 and matriculation in program.* Requires participants to demonstrate knowledge of Elements of Instruction in preparing a lesson plan, delivering a lesson plan to a peer group, and evaluating a lesson plan. Also familiarizes participants with the different learning/teaching styles. Requires participants to demonstrate good questioning techniques (Bloom's) and become familiar with course, unit and daily planning techniques. *3 Cr. Fall, Spring.*

**EDI 447 Introduction to Secondary Science Teaching (B).** *Prerequisites: EDI 320, PSH 484 and matriculation in program.* Covers selected learning theories appropriate to science, lesson and unit plans, appropriate science curricula, lab exercises, evaluation of textbooks, and mandated safety requirements in science. *3 Cr. Fall, Spring.*

**EDI 448 Introduction to Teaching Secondary Social Studies (B).** *Prerequisites: EDI 320, PSH 484 and matriculation in program.* Focuses on the application and knowledge objectives of EDI 320 for teaching social studies in secondary schools. Examines strategies and materials used in teaching

social studies, emphasizing fundamental elements of instruction including writing objectives, designing anticipatory sets, active participation strategies, cooperative learning and closure activities. Teaches questioning strategies that undergird these elements. *3 Cr. Fall, Spring.*

**EDI 449 Introduction to Secondary Foreign Language Teaching (B).** *Prerequisites: EDI 320, PSH 484 and matriculation in program.* Focuses on tools and methodologies needed for effective teaching. Includes elements of effective instruction, class room management, cooperative learning, motivation, assessment, learning theories, and team building. Uses in-school experiences, peer teaching and videos of classroom scenarios to reinforce the theoretical content. *3 Cr. Fall.*

**EDI 451 Overseas Studies in British Education (B).** Allows a small group of students to visit selected urban and suburban English schools and educational agencies over a two-week period. Provides background seminars at SUNY Brockport in the months preceding the trip. Conducted under the direct supervision of a Brockport professor. Interested students should contact the Department of Education and Human Development for details. *3 Cr. Summers.*

**EDI 453 Teaching Children's Literature (B).** Covers both traditional and current literature for young children that are critically appraised in terms of behavioral objectives. Analyzes nursery rhymes, nursery tales, songs, finger play, and the many current books for preschool and primary school children in terms of their contributions to social growth, language development, reading, math, science, and the social studies. *3 Cr. Summer.*

**EDI 455 Practicum in Elementary Education.** *Prerequisites: EDI 320, 321, 325, 405, 406, 415, 416, and PSH 384; Corequisite: EDI 456.* Provides teaching experiences in elementary classrooms: planning, evaluating, instructing, managing children and routines. Requires students to demonstrate various instructional skills and exhibit traits such as responsibility, reliability, punctuality and empathy, basic communication skills and a positive attitude toward children and colleagues. *12 Cr. Fall, Spring.*

**EDI 456 Professional Development Seminar (B).** *Corequisite: EDI 455.* Provides additional kinds of support and encouragement for the student by meeting with fellow student teachers, college supervisors, and other resource personnel. Expects students to reflect upon their teaching experiences in terms of evaluation of self and future goals, acquisition of new knowledge and how it relates to self and the teaching profession, and how successful they are in linking previously

learned theory and methodology with their classroom experiences. *2 Cr. Fall, Spring.*

**EDI 465 Methods of Teaching Secondary English (B).** *Prerequisites: EDI 445, EDI 320 and PSH 484.* Includes topics such as elements of objective and subjective criticism and the personal response to literature; teaching reading and responding to literature (short and long fiction, poetry, short and long drama); assessing literature and student responses; and English grammar and reading and writing. School-based observation and participation beyond class time are required for this course. *3 Cr. Fall, Spring.*

**EDI 466 Methods of Teaching Secondary Mathematics (B).** *Prerequisites: EDI 446, EDI 320 and PSH 484.* Familiarizes participants with: evaluation techniques (quiz, test construction); classroom management techniques (attendance, cooperative learning, discipline, grading techniques); and the mathematics curricula in grades 7–12. Allows participants to participate in pre-teaching observation and practice problem-solving techniques. School-based observation and participation beyond class time are required for this course. *3 Cr. Fall, Spring.*

**EDI 467 Methods of Teaching Secondary Science (B).** *Prerequisites or corequisites: PSH 484, EDI 320 and EDI 447.* Allows students to work with a classroom teacher in preparing lab and demonstration materials, assist students in the lab and evaluate the effectiveness of materials. School-based observation and participation beyond class time are required for this course. *3 Cr. Fall, Spring.*

**EDI 468 Methods of Teaching Secondary Social Studies (B).** *Prerequisites: EDI 448, EDI 320 and PSH 484.* Focuses on techniques and strategies of teaching specific social science disciplines in secondary schools. Emphasizes developing an understanding of how content shapes teaching strategies and how the disciplines are used in reaching the objectives of the New York State Social Studies Curriculum. Entails adaptation of methodology from EDI 448 to teaching social studies. School-based observation and participation beyond class time are required for this course. *3 Cr. Fall, Spring.*

**EDI 469 Methods of Teaching Secondary Foreign Languages (B).** *Prerequisites: EDI 449, EDI 320, PSH 484 and a passing evaluation on the language proficiency test.* Focuses on the application of specific methodology to the teaching of foreign languages. Includes assignments such as the development of thematic units, micro-teaching, lesson planning and delivery, and problems of curriculum. Requires the application of research in teaching a second language, utilization of modern media and technology, and implementation of

proficiency-based activities. School-based observation and participation beyond class time are required for this course. *3 Cr. Spring.*

**EDI 475 Practicum in Secondary Education (B).** *Prerequisites: Cumulative GPA of 2.5 or better, successful completion of all methods courses, and completion of major. Corequisite: EDI 476.* Provides for a student teaching assignment involving professional teaching responsibility in appropriate secondary school subject matter field for one semester. Frequency of offering is dependent upon certification area. *12 Cr. Fall, Spring.*

**EDI 476 Selected Problems in Secondary Education (B).** *Corequisite: EDI 475.* Provides for the study and discussion of selected problems of secondary schools in New York state. Includes such topics as educational and historical background, aims and purposes, administration and organization, curriculum designs, guidance, evaluation, negotiations, and legal and other aspects of

secondary education. Offered in conjunction with EDI 475. *3 Cr. Fall, Spring.*

**EDI 481 Computers in the Classroom (B,T).** Introduces teachers the use of microcomputers in the classroom. Provides hands-on experience using prepared software such as simulation games, drill and practice, tutorials and teacher utilities. Also provides for evaluation and selection of software, and an introduction to graphics and the World Wide Web. *3 Cr. Fall, Spring.*

**EDI 490 Topics of Instruction (B).** Meets the needs of intact groups of clients at the upper-division undergraduate level. Transcript title, content, bibliography and assessment procedures vary with the predetermined needs and interests of the group of clients served. *3 Cr.*

**EDI 499 Independent Study.** To be defined in consultation with the instructor-sponsor and in accordance with the procedures of the Office of Academic Advisement prior to registration. *1–3 Cr.*

## Engineering—

See Under “Special Programs and Internships,” in Chapter V, p. 73.