

## DEPARTMENT OF CRIMINAL JUSTICE

### **169 Faculty Office Building (585) 395-2665**

*Chairperson and Associate Professor:* Korní Swaroop Kumar; *Associate Professor:* Richard C. Lumb; *Assistant Professors:* Kimberley A. Cattat, Michael Cretacci, Jamie Ross, Yumin R. Wang; *Visiting Assistant Professor:* Bivette M. Stodghill; *Associate Professor Emeritus:* Larry R. Bassi, Romine (Dick) Deming, Richard G. Frey, Roger B. McNally.

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 police, security, 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 nonprofit 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, US 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 Corporation 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, SUNY Buffalo, SUNY 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 participate in the College's Washington, DC, and Albany Semester programs, British internships, or other local internship placements.

### **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 that 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's degrees from 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's 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
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PSH 110	General Psychology	
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**OR**

PSH 112	General Psychology with Lab	3
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PLS 113	American Political Systems	3
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An approved ethnic minorities course		3
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An approved statistics course		3
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Two upper-division (300/400 level) courses, one of each in two of the following three disciplines: sociology, psychology or political science		6
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III. Criminal Justice Core Proficiencies (24 credits)

CRJ 101	Introduction to Criminal Justice	3
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CRJ 203	The Police Process	3
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CRJ 207	The Corrections Process	3
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CRJ 305	The Adjudication Process	
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**OR**

PLS 320	Law and Legal Process	3
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CRJ 311	Criminal Law	3
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CRJ 343	Juvenile Justice Process	3
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CRJ 471	Research Methods	
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**OR**

CRJ 475	Legal and Justice Research Methods	3
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CRJ 494	Criminology	3
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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 US; independent and interdependent operations and procedures of police, courts and corrections; and introductory theories of crime and delinquency. *3 Cr. Every Semester.*

**CRJ 203 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).** Provides a comprehensive examination of investigations relative to both public and private modes, including most major felony processes and relevant civil actions. Focuses 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 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.* Covers the historical development of criminal law in the US; 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 or instructor's permission.* Covers the application of the Bill 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 (B).**

*Prerequisite: Six credits of CRJ 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).**

Provides an historical and contemporary look at white collar/occupational crime in the United States. Analyzes 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 SOC 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).** *Prerequisite:* Six credits of CRJ courses or instructor's permission. Covers the historical development of juvenile justice in the US, 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 375 Forensic Law (B).** Serves as an interdisciplinary course covering law, criminal justice, science and technological issues in the evidentiary arena. Provides broad-based assessment of scientific evidence as it relates to litigation theory, tactics and evidentiary proof. *3 Cr.*

**CRJ 410 Justice Dilemmas (A).** 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 punishments; and the role of the state as it relates to individual freedoms. *3 Cr.*

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

**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. Spring.*

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

**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 Systems (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 (A).** Provides a complete examination of the law, its origins, roots and underpinnings, in a jurisprudential context. Gives special attention 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-Classicists. Includes a focused examination of Cicero, Plato, Aquinas, and contemporary jurists. *3 Cr.*

**CRJ 465 Terrorism and the Criminal Justice System (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 (A).** Analyzes the forms, causes, and context of homicide in the United States. Additionally, looks at criminal and non-criminal types of homicide in other cultures. Examines 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 in Criminal Justice (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, and statistics for nominal and ordinal measures. *3 Cr. Every Semester.*

**CRJ 475 Legal and Justice Research Methods (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. Requires application of legal research strategies. *3 Cr.*

**CRJ 477 Family Violence (A).** *Prerequisite:* SOC 100 and PSY 112. Focuses on the dynamics of family violence and the legal and social system response to the phenomenon. 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, elder abuse. 3 Cr.

**CRJ 479 Victimology (A,W).** *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 the Criminal Justice System (A,W).** *Cross-listed as WMS 481. Prerequisite:* Junior or senior status. Examines women's relationships 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.

**CRJ 483 Fair Trial/Free Press Conflicts (A,I).** *Prerequisite:* Junior or senior status. 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,I).** *Prerequisite:* 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. 1-6 Cr. Every Semester.

**CRJ 491 Selected Topics in Criminal Justice (B).** 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.

**CRJ 493 Seminar in Criminal Justice (A).** 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 including 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).** Provides 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. Covers real and physical evidence, demonstrative substitution, hearsay and firsthand evidence, witness scope and qualification, as well as privilege principles. Interprets both federal and state rules. 3 Cr.

**CRJ 499 Independent Studies in Criminal Justice (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.

**OAP 407 Brunel Overseas Academic Program (A).** Co-sponsored by Brunel University and SUNY Brockport. Enables students to live and to study in London. Through lectures, discussions and field trips, allows students to examine the relationships between British and American society. 1-15 Cr.

**OAP 408 Criminal Justice Overseas Academic Program (A).** *Prerequisite:* 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, and 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. 1-15 Cr.

**OAP 413 Overseas Internships (A).** *Prerequisite: Junior status, with a 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. *1-15 Cr. Every Semester.*

**OAP 414 Waterford Overseas Programs (A).** Entails study at the Waterford Institute of Technology within the division of law and legal studies. Covers areas of inquiry such as Irish criminal law, Irish penology and the jurisprudence of Ireland. Allows students to 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. *1-15 Cr.*

**OAP 442 SWO Interns OAP (A).** Allows social work majors to do their field placement work for credit overseas. Internships will be in four possible locations: Costa Rica, Ireland, Puerto Rico, Vietnam. *1-15 Cr.*

**OAP 474 OAP Maynooth, Ireland (A).** Direct enrolled study abroad program for a semester of study at the National University of Ireland, Maynooth, Ireland. *1-15 Cr.*

## DEPARTMENT OF DANCE

**Hartwell Hall**  
**(585) 395-2153**

*Chairperson and Professor:* Darwin Prioleau; *Professor:* Jacqueline Davis; *Associate Professors:* Diane McGhee, Clyde W. Morgan, Juanita Suarez, Wallie Wolfgruber; *Assistant Professors:* James Hansen; *Visiting Professor (Guest Artist):* Bill Evans; *Professional Staff:* Sandra Cain, Gregory H. Ketchum, Khalid Saleem, Christian Tucker.

SUNY Brockport is an accredited institutional member of the National Association of Schools of Dance, and offers the most broadly based dance degree programs in the SUNY system.

Undergraduates with a strong foundation of dance training are able to participate in the program by auditioning to enroll as dance minors or majors in the BA, BS or BFA programs. Highly skilled dancers or choreographers who have already earned undergraduate degrees in dance can audition for acceptance in the MA and MFA programs. Additionally, the department serves a large number of students with varying backgrounds in dance through courses that fulfill General Education requirements.

SUNY Brockport is recognized for its strong liberal arts education. Strengths of the program include professional-level technical instruction and numerous opportunities to create choreography for presentation in both formal and informal departmental productions. Additionally, students regularly perform in original and repertory works created by full-time faculty and guest artists. These experiences prepare students for a wide range of professional careers in dance or to continue their educations in graduate school. Through the active permanent faculty, guest artists, company residencies, the contemporary dance ensemble DANSCORE and the African dance and drum ensemble Sankofa, students are able to make important connections to the professional dance world and explore both traditional and cutting-edge aesthetics. These creative opportunities combined with a range of courses in theory, history, production and technology, provide a broad understanding of dance as a performing art.

Students also have the opportunity to study abroad. The Office of International Education provides information about dance programs in Jamaica, Ghana, England and other countries.

**Programs in Dance**

- BA or BS in Dance (often coupled with a second major)
- BFA in Dance
- BA or BS with a major in arts for children and specialty in dance
- Minor in Dance
- MA in Dance
- MFA in Dance
- MA with PreK–12 dance teacher certification

**Required Auditions**

*All students wishing to major or minor in dance must pass a department audition and then complete DNS 204 and 205, prerequisites for other required courses in the dance major. DNS 204 and 205 are offered only in the fall. Students may enroll in elective dance courses prior to successful completion of the audition process. Three auditions are held each year; check the department Web site at [www.brockport.edu/dance](http://www.brockport.edu/dance) or contact the Department of Dance at (585) 395-2153 for audition dates and information.*

Students may begin the dance major or minor as freshmen, sophomores or juniors. As a rule, BA/BS dance major and dance minor requirements can be completed during two academic years. The BA/BS dance major requires 35 (out of 120) credits; up to 19 additional elective dance credits may be taken to meet degree requirements. Many dance majors also complete requirements for minors or a second major in another discipline.

The BFA dance major requires 85 specified credits in dance (out of 120) and emphasizes professional preparation for performance-related careers. It is a rigorous program that requires a high level of proficiency and commitment. Entering freshmen must complete at least one semester of BA/BS study before application for the BFA audition is permitted. Transfer students can be reviewed for acceptance into the BFA program during the departmental entrance audition.

**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.

Careful planning of course sequences and consultation with faculty advisors is essential for all programs. Assignment to appropriate dance technique levels is based on a placement examination given each semester.

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

<b>Dance Technique (12 credits)</b>		<b>Credits</b>
DNS 204	Dance Conditioning Lab	2
DNS 205	Dance Technique I	3
	<b>AND</b> a minimum of seven credits from the following:	
DNS 245	Dance Technique II <sup>3</sup>	3
DNS 345	Dance Technique III <sup>3</sup>	3
DNS 445	Dance Technique IV <sup>3</sup>	3
DNS 253	Beginning Ballet <sup>1</sup>	1-4
DNS 353	Intermediate Ballet <sup>1</sup>	1-4
DNS 453	Advanced Ballet <sup>1</sup>	1-4
DNS 330	African Dance II	3
DNS 433	African Dance III	3
DNS 454 <sup>2</sup>	Dance Styles	1-4

<sup>1</sup>Repeatable course numbers for ballet.

<sup>2</sup>A repeatable course number for musical theater, jazz, tap and special topics.

<sup>3</sup>A repeatable course number for dance technique.

**Choreography: (5 credits)**

DNS 208	Dance Production Practicum	0
DNS 364	Dance Improvisation	2
DNS 306 <sup>1</sup>	Beginning Dance Composition	3

<sup>1</sup>DNS 205, MUS 300, and DNS 364 are prerequisites for DNS 306.

**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 <sup>1</sup>	Kinesiology	3
	<b>OR</b>	
DNS 375	Introduction to Laban Movement Analysis	

<sup>1</sup>BIO 221 is a prerequisite for DNS 305 and can be used as a Knowledge Area requirement.

**Electives: (6 credits)**

Upper-division dance electives selected by advisement	6
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**Total: 35**

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

**Bachelor of Fine Arts in Dance (BFA)****Dance Technique (29 credits)**

Must complete at least two semesters of DNS 445 Dance Technique IV and two semesters advanced-level study in one or two other forms.

**Credits**

DNS 204	Dance Conditioning Lab	2
DNS 205	Dance Technique I	3
	<b>AND 24 credits selected from the following:</b>	
DNS 245	Dance Technique II <sup>3</sup>	3
DNS 345	Dance Technique III <sup>3</sup>	3
DNS 445	Dance Technique IV <sup>3</sup>	3
DNS 253	Beginning Ballet <sup>1</sup>	1-4
DNS 353	Intermediate Ballet <sup>1</sup>	1-4
DNS 453	Advanced Ballet <sup>1</sup>	1-4
DNS 330	African Dance II	3
DNS 433	African Dance III	3
DNS 454 <sup>2</sup>	Dance Styles	1-4

<sup>1</sup>Repeatable course numbers for ballet.

<sup>2</sup>A repeatable course number for musical theater, jazz, tap and special topics.

<sup>3</sup>A repeatable course number for dance technique.

**Choreography and Performance (20 credits)**

DNS 364	Dance Improvisation	2
DNS 306 <sup>1</sup>	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 457	DANSCORE I-III	3
	<b>OR</b>	

DNS 489-491 Sankofa I-III

<sup>1</sup> DNS 205, MUS 300, and DNS 364 are prerequisites for DNS 306.

**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
DNS 305 <sup>1</sup>	Kinesiology	3
DNS 315	Dynamic Balance	3

**OR**

DNS 452 Somatics

**OR**

DNS 480 Dance Science and Injury Prevention

<sup>1</sup>BIO 221 is a prerequisite for DNS 305 and can be used as a Knowledge Area 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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**Electives: (9 credits)**

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Any upper-division dance courses. THE 221 Acting I and ART 212 3-Dimensional Design may also be used.

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**Total: 85**

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

The BFA in Dance requires completion of all 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 Knowledge Area course, no DNS courses may be used. This policy is intended to insure breadth of experience within the BFA. A student who takes additional dance courses will graduate with more than the required minimum 120 credits.

**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 additional semester of dance technique. Contact the department for information about the audition.

**Interdisciplinary Arts for Children: Dance Specialty**

Students seeking an interdisciplinary major in Arts for Children with a specialty in dance are required to complete a 48-credit program consisting of: (1) two interdisciplinary courses, IAC 280 Introduction to Related Arts for Children, and IAC 491 Seminar in Arts for Children; (2) a dance specialty of 21 credits; and (3) a 21-credit block consisting of two courses in each of the other three arts and one approved elective. 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 grade of “C” must be maintained in all required courses.

For detailed information and a comprehensive listing of courses required in this specialty area, refer to the section **Arts for Children-Interdisciplinary Major** in this catalog.

## DANCE COURSES

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

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

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

**DNS 106 Traditional Dance African (A,P).** Studies selected traditional African dance forms and development of skills through studio experience. Covers the artistic and educational uses of traditional African dances. Requires 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 125 Looking at Dance (A,F).** Provides a survey of dance forms through lecture, literature, film and live performance. Addresses contributions to the art of dance by major choreographers, dancers and others throughout the world. *3 Cr.*

**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. Can be repeated, but only three credits may be used toward the 120 credits required for graduation. *3 Cr.*

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

**DNS 205 Dance Technique I (A).** *Prerequisite: 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. (Must pass audition prior to enrollment.) *3 Cr. Fall.*

**DNS 206 20th-Century Dance: Issues and Styles (A,P,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).** Entails a practicum experience that 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 as 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 Dance Technique II (A).** *Prerequisite: DNS 205 and instructor's permission.* Beginning-level course to train the dancer to respond to a broad range of movement demands. Focuses primarily on modern technique. Placement in a technique level is determined by previous training and skill rather than academic standing. Includes studies in dance science and somatics. *3 Cr. Spring.*

**DNS 253 Beginning Ballet (A).** *Prerequisite: DNS 205 or instructor's permission.* Provides an introduction to the fundamentals of classical ballet with an emphasis on technique, body alignment and placement exercises performed at barre and center floor work. Incorporates stretch and strengthening techniques. Emphasizes ballet vocabulary and its application. *1-4 Cr.*

**DNS 305 Kinesiology for Dancers (A).** *Prerequisites: DNS 205 and BIO 221.* 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).** *Prerequisite: DNS 205, DNS 364 and MUS 300.* Allows for beginning work in composition. Requests students to choreograph short studies and short solo 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 the execution of basic dance forms such as jazz, tap, ballet and modern dance for the theater; and provides studies in techniques of movement with emphasis on the performance aspect. *3 Cr.*

**DNS 315 Dynamic Balance: Movement Theories (A).** *Prerequisite or corequisite: DNS 305 and intermediate or advanced technique.* Allows for the performance of skills from the work of Irmgard Bartienieff, F. M. Alexander, 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. Also 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 333 African Music and Drumming for Dance II (A).** *Prerequisite: DNS 232, AAS 232 or instructor's permission.* Studies selected advanced traditional musical instruments for dance accompaniment; and develops advanced 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.*

**DNS 339 Survey of Tap Dance II (A).** *Prerequisites: 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 Dance Technique III (A).** *Prerequisite:* *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 353 Intermediate Ballet (A).** *Prerequisite:* *DNS 253.* Provides a continuation of the study of classical ballet at the intermediate level in a technique class consisting of full barre and center floor work. Incorporates stretch and strengthening exercises. *1-4 Cr.*

**DNS 364 Dance Improvisation (A).** *Prerequisites:* *DNS 205 or MUS 300 and MUS 420.* Provides beginning dance and movement improvisation as a compositional and performance technique, and 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).** *Prerequisites:* *DNS 205 or instructor's permission.* Provides an 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. Includes reading, observations of live and recorded movement, lectures, and movement activities. *3 Cr. Spring.*

**DNS 399 Independent Study (B).** *Prerequisite:* *DNS 205.* Designed individually through consultation between the student and instructor to suit the student's needs and interests and the special competence of the instructor. Additional requirements may be established by the department. *1-3 Cr.*

**DNS 400 Special Topics (B).** Addresses in depth a selected study topic not covered in other courses. Is repeatable with different topic titles. Additional information may be obtained from the department. *1-4 Cr.*

**DNS 424 Dance Repertory I (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 425 Dance Repertory II (A).** *Prerequisite:* *Instructor's permission.* Enables students to become familiar with a selected body of more advanced 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).** *Prerequisite:* *Advanced technical work; and at least intermediate or 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, DNS 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. Prerequisites:* *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; and performing style and definition of movement. Enables students to perceive and coordinate movement quickly in combined steps, and improvise lengthly jazz sequences in the jazz idiom.

Required reading along with exploration of jazz from its historical perspective. *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 SummerSession bulletins for complete descriptions. *1-6 Cr.*

**DNS 445-450 Dance Technique IV (A).** *Prerequisite: 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: Body/Mind Integrity (A).** Covers movement re-education for reducing stress and pain, improving posture, balance, mobility and self-image. Also covers processes of somatics derived from Feldenkrais Awareness Through Movement lessons (ATM). Entails yoga, body/mind centering, dance movement improvisations, and hands-on body work. *3 Cr.*

**DNS 453 Advanced Ballet (A).** *Prerequisite: DNS 353 or instructor's permission.* For the advanced-intermediate to advanced-level ballet student. Consists of a ballet technique class incorporating barre and center floor work, adagio, petite allegro, and grande allegro. Expects students to develop and perform the skills and style at the designated level. *1-4 Cr.*

**DNS 454 Studies in Major Dance Styles (B).** *Prerequisite: DNS 205 or instructor's permission.* Provides a concentrated study in a specific dance form (e.g. jazz, tap, 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 457 DANCE SCORE (A).** *Prerequisite: Instructor's permission.* Through a modern dance performance ensemble, provides an opportunity for study and performance to intermediate and advanced modern dance students. *1-4 Cr. Every Semester.*

**DNS 460 Foreign Studies in Dance (A).** *Prerequisite: Junior or senior status and departmental approval.* Explores dance and 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. *1-15 Cr. Every Semester.*

**DNS 461 Labanotation I (A).** *Prerequisite: DNS 205.* This course presents the basic principles of the Laban method of movement notation. The student develops skills in perceiving and analyzing movement, and in notating and reading back simple movement patterns. *3 Cr.*

**DNS 462 Lighting for Dance (B).** 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: Conditioning and 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/kinesiologist/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 (B).** *Prerequisite: Instructor's permission.* Enables students to outline goals for a semester, construct lesson plans, and teach and analyze technique classes. Is a 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).** *Prerequisites: DNS 115 or DNS 205.* 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. Is an 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 489-491 Sankofa I-III (A).** *Prerequisite:* *Instructor's permission.* Through an 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).** *Prerequisite:* *Junior or senior status as 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 résumé, 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 499 Independent Study (A).** Designed individually through consultation between the student and instructor to suit student's needs and interests and the special competence of the instructor; and in accordance with College policy. Additional requirements may be established by the department. *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).** *Prerequisite:* *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).** *Prerequisite:* *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).** *Prerequisite:* *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.*

## DEPARTMENT OF THE EARTH SCIENCES

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*Chairperson and Associate Professor:* James A. Zollweg; *Associate Professors:* Whitney J. Autin, Judy A. Massare, Jose A. Maliekal, Mark R. Noll; *Assistant Professors:* Paul L. Richards, Scott M. Rochette; *Instructor:* Steve Weinbeck.

Directly or indirectly, beneficially or adversely, humanity affects and is affected by the physical processes occurring within the earth system, which encompasses the air we breathe, the water we drink, and the land that sustains us. The sphere of knowledge known as the earth sciences includes the study of all physical aspects of the earth system, including how its composition, properties, resources, and processes change over time. By applying physical, chemical, mathematical, and biological principles, earth scientists strive to enhance the understanding of the earth system so that humanity is better prepared to properly use its resources, and anticipate, detect, and mitigate the adverse impacts of its processes.

Students who major in *geology*, *meteorology*, or *water resources* focus their study on the geologic, atmospheric, or hydrologic components of the earth's environment. They also study the interrelationships between these environments, enabling them to expand the breadth of their expertise. In contrast, students who major in earth science acquire a broadly based and integrated understanding of the knowledge and methodologies of geology, meteorology, and hydrology. Regardless of the academic major, the departmental curricula render science accessible, relevant, and meaningful to students. Students are also afforded the opportunity to explore and discover the processes and interactions occurring within the earth system through research with faculty assistance.

Academic majors: *earth science*, *geology*, *meteorology*, and *water resources*.

Academic minors: *earth science*, *geology*, *meteorology*, and the interdisciplinary *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, calculus and chemistry. This major offers sound training in the study of the earth and its resources, and equips the student for graduate studies in geochemistry, petroleum exploration, paleontology, hydrogeology, ground water, environmental geology, or sedimentology/stratigraphy. 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.

<b>Required Core:</b>		<b>Credits</b>
GEL 201	Introduction to Physical Geology	4
GEL 302	Historical Geology	4
GEL 306	Paleontology	4
GEL 312	Mineral Science	4
GEL 408	Structural Geology	4
GEL 411	Stratigraphy and Sedimentology	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	12

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**Total: 42**

<b>Designated Electives:</b>		<b>Credits</b>
GEL 415	Geomorphology	4
GEL 457	Geochemistry	4
GEL 462	Groundwater	4
ESC 455	Introduction to Soils Science	3

<b>Required Corequisite Courses:</b>		<b>Credits</b>
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

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**Total: 22**

**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 201 and 302, and ESC 350 and 391, physics, calculus and college chemistry should be completed before entering the junior year. ESC 493 should be taken in the senior year. Most required courses are taught once every two years.

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

ESC 200	Introduction to Oceanography
ESC 230	Introduction to Geographic Information Systems (GIS)
ESC 351	Lab Experiences in Scientific Programming
ESC 412	Hydrology
ESC 418	Watershed Science
ESC 431	Environmental Applications of GIS
CHM 303	Analytic Chemistry
CHM 305	Organic Chemistry I
BIO 436	Water Quality Analysis
BIO 419	Limnology
MTH 203	Calculus III

### Minor in Geology

Eighteen credits are required and must include: GEL 201 Introduction to Physical Geology, 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	Introduction to Meteorology	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 412	Hydrology with Laboratory	
	<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

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**Total: 41**

#### Designated Electives:

ESC 200	Introduction to Oceanography	3
ESC 421	Air Pollution Meteorology	3
ESC 412	Hydrology with Laboratory	4
ESC 313	Environmental Climatology	3
ESC 314	Climatology Lab	1

ESC 432	Tropical Meteorology	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 255	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 391 should be taken by the end of the sophomore year.

ESC 493 should be taken in the senior year.

Be aware that most required courses are offered once every two years.

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 203	Fundamentals of Computer Science I
CSC 205	Fundamentals of Computer Science II
MTH 203	Calculus III
MTH 281	Discrete Mathematics I
MTH 346	Probability and Statistics I
MTH 471	Numerical Analysis
PHS 300	Classical Physics
PHS 301	Mathematical Methods of Physics
PHS 302	Dynamical Systems

### 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 201	Introduction to Physical Geology		4
ESC 350	Computational Methods in the Field Sciences		3
ESC 351	Laboratory Experience in Scientific Programming		1
ESC 391	Writing in the Earth Sciences I		
ESC 412	Hydrology		4
ESC 418	Watershed Sciences		3
ESC 493	Seminar in Earth Science Problems		2

GEL 415	Geomorphology	4
GEL 457	Geochemistry	4
GEL 462	Groundwater	4
	Designated electives by advisement	9
<b>Total:</b>		<b>43</b>

**Designated Electives:**

		<b>Credits</b>
ESC 313	Environmental Climatology	3
ESC 325	Wetlands Systems	3
ESC 330	Geographic Information Systems	4
ESC 455	Introduction to Soils Science	3
GEL 312	Mineral Science	4
GEL 363	Environmental Geology	3
GEL 411	Stratigraphy and Sedimentology	4
BIO 419	Limnology	3
BIO 436	Water Quality Analysis	4
<b>Total:</b>		<b>31</b>

**Required Corequisite Courses:**

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, ESC 391, physics, calculus and college chemistry, should be taken by the end of the sophomore year.

ESC 493 should be taken in the senior year.

Be aware that most required courses are offered once every two years.

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 303	Ecology
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 431	GIS Applications in Earth and Environmental Science
GEL 363	Environmental Geology
MTH 455	Differential Equations
PLS 466	Environmental Politics

**Major in Earth Science**

Earth science majors must earn a minimum of 32 core and elective credits and an additional 19 credits in related lab sciences and mathematics. The core and elective courses that constitute the curriculum of this interdisciplinary major embody the knowledge base and methodologies of geology (solid earth and its resources), meteorology (the atmosphere and its movement), and hydrology (water and its cycling through the environment). As such, this major offers a flexible and broadly based program of study that is well suited for students who are preparing for school teaching (elementary, or secondary), or planning for a career in environmental regulation, resource management, or park service. By supplementing the major-

related course- work with additional electives, or an appropriate minor, a student may structure her/his study toward a special interest area, such as journalism, technical writing, business, or graduate study in geography, resource management, urban planning, or museum science.

<b>Required Core (17 Credits):</b>			<b>Credits</b>
GEL	201	Introduction to Physical Geology	4
ESC	200	Introduction to Oceanography	3
ESC	211	Introduction to Meteorology	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)<sup>1</sup>:</b>			3-4
GEL	302	Historical Geology (4)	
GEL	312	Mineral Science (4)	
GEL	363	Environmental Geology (3)	
<b>Meteorology Elective (choose one of the following)<sup>1</sup>:</b>			3-4
ESC	313	Environmental Climatology (3)	
ESC	420	Atmospheric Sensing Methods (3)	
ESC	421	Air Pollution (3)	
<b>Water Resources Elective (choose one of the following)<sup>1</sup>:</b>			3-4
ESC	325	Wetland Systems (3)	
ESC	412	Hydrology (4)	
GEL	462	Groundwater (4)	
<b>General Electives:</b>			3-6
Chosen from ESC/GEL courses with advisement			
<b>ESC/GEL Minimum Total:</b>			<b>32</b>
<b>Science Corequisites (8 Credits):</b>			
CHM	205–206	College Chemistry I and II	8
MTH	201	Calculus I	3
PHS	115–116	General Physics I and II	8
<b>OR</b>			
PHS	201–201	College Physics I and II	
<b>Total:</b>			<b>19</b>

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

Many electives are offered only once every two years.

<sup>1</sup>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, 363, or 312.

### **Minor in Earth Science**

Eighteen credits are required, and must include ESC 200 and 211, and GEL 201.

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

Majors within the Department of the Earth Sciences 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).** Covers locating, describing, and explaining physical processes and features of the earth; and relating them to cultural, economic, and political activities of people. Includes location and characterization of places; human-environment interactions; and unifying features of regions. Seeks 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 Department of the Earth Sciences. *3 Cr. Every Semester.*

**ESC 110 Weather (A,N).** An introduction to 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 this course may not take ESC 211 for credit. *3 Cr. Fall.*

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

**ESC 211 Introduction to Meteorology (A,L).** 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 110 for credit. *4 Cr. Every Semester.*

**ESC 311 Synoptic Meteorology (A).** *Prerequisite: ESC 211 or equivalent.* Qualitative and quantitative evaluation of mid-latitude weather systems via conceptual models and theoretical ideas. Covers meteorological data and analysis products, scales of atmospheric motion, kinematic properties of the wind field, fronts and frontogenesis, and extratropical cyclones and cyclogenesis. Lab emphasizes subjective/objective analysis and application of meteorological data. *4 Cr. Fall.*

**ESC 312 Weather Forecasting (A).** *Prerequisite: ESC 311.* Application of qualitative and theoretical concepts to the prediction of mid-latitude weather systems. Covers geostrophic and ageostrophic winds, upper-level jet streak dynamics, methods of computing vertical motion, quasi-geostrophic theory, quantitative evaluation and

verification methods, and numerical weather prediction products. Lab emphasizes real-time diagnosis and prediction of local, regional, and large-scale weather systems. *4 Cr. Spring.*

**ESC 313 Environmental Climatology (A).** *Prerequisite: ESC 211 or BIO 303.* Discusses the physical, chemical, and biological factors regulating the climate of the earth. Covers radiation and energy balance, climatic elements, atmospheric and oceanic circulations, natural and anthropogenic climate change and variations. *3 Cr. Spring.*

**ESC 314 Climatology Laboratory (A).** *Prerequisite or corequisite: ESC 313.* Covers principles and analytical techniques used to study global, regional, and local climate. *1 Cr. Spring.*

**ESC 319 Biological Oceanography (A).** *Cross-listed as ENV 319. Prerequisite: ESC 200 or instructor's permission.* Review of the ocean's physical, geological and chemical properties followed by study of the classification, biology and life history of marine animals and plants. Concludes with ecology of selected marine ecosystems such as intertidal, deep sea and coral reef. *3 Cr.*

**ESC 325 Wetland Systems (A).** *Prerequisites: One of the following: BIO 202, GEL 201, ESC 211, ENV 400, or 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. Fall.*

**ESC 330 Geographic Information Systems (A).** *Prerequisite: PC-computer literacy and GEL 201 or ESC 211, 350, and 391.* Provides an introduction to the use of computer-geographic information systems (GIS). Examines the geographic and information data-processing methods associated with earth systems sciences studies. Covers geographic data selection analysis and presentation using spatial data-processing hardware and software techniques. Requires use of earth systems data to develop an individual hands-on study application. *4 Cr. Spring.*

**ESC 350 Computational Methods in the Field Sciences (A,T).** *Prerequisite: One or more courses in the natural sciences and mathematics.* Discusses methods of collecting, analyzing, and visualizing field data. Covers descriptive statistics, graphical and exploratory data analysis techniques, data transformations, parametric and nonparametric hypotheses testing, relational statistics, and linear modeling. *3 Cr. Every Semester.*

**ESC 351 Laboratory Experiences 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.*

**ESC 364 Water Resources Issues (A,I).** 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. (Does not apply to the requirements for the earth science major.) *3 Cr. Fall.*

**ESC 391 Writing in the Earth Sciences (A).** 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. Every Semester.*

**ESC 399 Independent Study in Earth Science (A).** *Prerequisites:* ESC 200 or 212. To be defined in consultation with the instructor-sponsor and in accordance with College procedures. *1-3 Cr. By Arrangement.*

**ESC 412 Hydrology with Lab (A).** *Prerequisites:* MTH 201, ESC 211 or GEL 201, ESC 350 and 391 or instructor's 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. *4 Cr. Odd Fall.*

**ESC 415 Physical Meteorology (A).** *Prerequisites:* ESC 311, ESC 350, ESC 391, PHS 201, PHS 202 and MTH 202. Covers atmospheric thermodynamics; physical processes of condensation; electrical phenomena in the atmosphere; radiative transfer. *3 Cr. Odd Fall.*

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

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

**ESC 418 Watershed Sciences (A).** *Prerequisite:* ESC 412 or GEL 462, ESC 350 and ESC 391. Covers 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. Odd Spring.*

**ESC 420 Atmospheric Sensing Methods (A).** *Prerequisites:* ESC 211 or equivalent, ESC 350 and MTH 122, ESC 391 pre- or corequisite. Theory and applications of conventional and remote sensing instruments: in situ instruments, radars, Doppler radars, and satellites. Emphasizes applications to National Weather Service networks and weather forecasting. Laboratory exercises will include basic electrical circuits, instrument calibration, launching and analyzing soundings, and interpreting radar and satellite imageries. *4 Cr. Even Spring.*

**ESC 421 Air Pollution Meteorology (A).** *Prerequisites or corequisites:* ESC 350 and ESC 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. Also studies diffusion using mathematical models. *3 Cr. Spring.*

**ESC 431 GIS Applications in Earth and Environmental Science (A).** *Prerequisite:* ESC 230. Introduces students to spatial analysis theories, techniques, and issues associated with ecological and environmental applications. Provides hands-on training in the use of spatial tools while addressing a real problem. Students will be able to experience linking GIS analyses to field assessments and monitoring activities. *3 Cr. Spring.*

**ESC 432 Tropical Meteorology (A).** *Prerequisites:* ESC 311, ESC 350, ESC 391, MTH 201 and PHS 201. Provides a comprehensive understanding of the climatology and weather systems of the tropics. Also covers the atmosphere-ocean interaction at various time scales and discusses the

possible influence of the tropical tropospheric processes on the weather and climate of the middle latitudes. *3 Cr. Odd Fall.*

**ESC 452 Mesoscale Meteorology (A).** *Prerequisites: ESC 312, ESC 350, ESC 391, MTH 201 and PHS 201.* An introduction to mesoscale processes and precipitation systems, with an emphasis on deep convection and severe weather. Covers severe storm type, structure, and organization, radar and satellite signatures of mesoscale and convective features, and the roles of atmospheric instabilities in the growth of mesoscale phenomena. Diagnosis and short-term prediction of severe storms via lecture and exercises. *3 Cr. Even Spring.*

**ESC 455 Introduction to Soils Science (A).** *Prerequisites: GEL 201, CHM 205, ESC 350 and ESC 391 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).** *Cross-listed as BIO 457. Prerequisite: Instructor's permission.* Prepare in the fall semester for a two-week January intersession field experience in coral reef biology and geology on San Salvador Island in the Bahamas. Study identification, behavior, and ecology of marine organisms in five habitats associated with coral reefs. Learn how to prepare a scientific field notebook and to design, conduct and write a paper on a personal research project. *3 Cr.*

**ESC 460 Meteorological Internship (A).** *Prerequisite: Instructor's permission.* Provides first-hand knowledge and experience 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. By Arrangement.*

**ESC 464 Environmental Internship (A).** *Prerequisite: ESC 412 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. *1-3 Cr. By Arrangement.*

**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.*

**ESC 493 Seminar in Earth Science Problems (A).** *Prerequisites: ESC 350 and ESC 391, and 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. Requires the report to also be presented in a critical, professional setting to faculty and students. *2 Cr. Every Semester.*

**ESC 499 Independent Study in Earth Science (A).** *Prerequisite: ESC 200, 212, 350 and 391.* To be defined in consultation with the instructor-sponsor and in accordance with College procedures. *1-3 Cr. By Arrangement.*

#### GEOLOGY COURSES

**GEL 100 Our Earth (A,N).** 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. *3 Cr. Every Semester.*

**GEL 201 Introduction to Physical Geology (A,L).** Covers basic scientific principles and phenomena, including mineral and rock formation, volcanoes, earthquakes, landforms, structure, surface and groundwater and other natural processes which affect earth and life. Includes laboratory study of minerals, rocks, maps used by geologists, aerial photographs and up to two local field trips. *4 Cr. Fall.*

**GEL 302 Historical Geology (A).** *Prerequisite: GEL 201.* 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. Saturday field trip required. *4 Cr. Spring.*

**GEL 306 Introduction to Paleontology (A).** *Prerequisite: GEL 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 and vertebrate groups as examples of the concepts. *4 Cr. Even Fall.*

**GEL 312 Mineral Science I (A).** *Prerequisites: GEL 201, CHM 205 and CHM 206.* 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 understanding the rock record. Focuses in laboratories on physical and chemical properties of minerals, and suites of minerals found in common rocks. Requires weekend field trip. *4 Cr. Odd Fall.*

**GEL 362 Energy and Mineral Resources Issues (A,D,I).** Examines the significance of energy and mineral resources to modern social, economic, and political forces. Covers current issues involving energy and mineral resources through local to global case studies. Requires participants to discuss perspectives on energy and mineral resource development and exploitation, present use and management, and alternatives to current utilization practices. (Does not apply to the earth science major.) *3 Cr. Even Spring.*

**GEL 363 Environmental Geology (A).** *Prerequisite: GEL 201 and GEL 415, or instructor's permission.* Explores the geologic problems of our environment including lake, deserts, oceans and continents; problems and solutions regarding surface and groundwater supply, mass wasting earthquakes, resource development and exploration, dams and dam sites, waste disposal, land reclamation and catastrophic events; and laboratory methods for the study of environmental geology. Requires one three-day weekend field trip. *3 Cr. Odd Spring.*

**GEL 399 Independent Study in Geology (A).** 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. By Arrangement.*

**GEL 408 Structural Geology (A).** *Prerequisites: GEL 302, ESC 350 and ESC 391 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. Even Spring.*

**GEL 411 Stratigraphy and Sedimentology (A).** *Prerequisites: ESC 350, ESC 391 and 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. Requires a weekend field trip and report. *4 Cr. Odd Fall.*

**GEL 415 Geomorphology (A).** *Prerequisites: GEL 201, ESC 350 and ESC 391.* 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. *4 Cr. Odd Spring.*

**GEL 457 Geochemistry (A).** *Course fee. Cross-listed as CHM 457. Prerequisites: CHM 205, CHM 206 and GEL 201.* Applies 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. Focuses on laboratory exercises on application of good laboratory practices to wet chemical and instrumental techniques involving geologic materials. Three hours lecture and three hours lab per week. *4 Cr. Even Spring.*

**GEL 462 Groundwater (A).** *Prerequisites: GEL 201, ESC 350, ESC 391 and MTH 201.* Studies groundwater; and its occurrence, movement and use, and its place in the hydrologic cycle. Examines the origin of aquifers, use and effects of wells, and water quality and groundwater problems. Laboratory focuses on practical application of principles to solving hydrogeologic problems. *4 Cr. Odd Spring.*

**GEL 476 Geologic Techniques (A).** *Prerequisites: GEL 306 and GEL 312 or instructor's permission.* Covers techniques needed by the professional geologist, complex mineral and rock forms, interpretation of map and structure sections, thin-sectioning, surveying, photo-micrographic methods, and the use of seismograph methods. *2 Cr. By Arrangement.*

**GEL 499 Independent Study in Geology (A).** *Prerequisite: ESC 350, ESC 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. By Arrangement.*

**ECONOMICS—****SEE BUSINESS ADMINISTRATION AND ECONOMICS****DEPARTMENT OF EDUCATION AND HUMAN DEVELOPMENT****282 Faculty Office Building****(585) 395-2205**

*Chairperson:* TBD; *Distinguished Service Professors:* Betsy Ann Balzano, Morris I. Beers; *Dean of Professions and Professor:* Christine E. Murray; *Professor:* Thomas R. Giblin; *Associate Professor:* Moira Fallon, Sue Novinger, Scott Robinson, Lynae Sakshaug, Conrad Van Voorst, Peter Veronesi; *Assistant Professor:* Amy Barnhill, Mary Corey, Donald Halquist, Karen Hurlbutt; *Lecturers:* Annette Hauenstein, Linda Kramer-Schlosser; *Director of Field Experience and Certification:* Diane Maurer; *Assistant Coordinator of Field Experience:* Candace Tyler-Herrenkohl; *Coordinator for Certification and Graduate Advisement:* Sandra E. Selden; *Coordinator for Undergraduate Certification Programs:* Nancy Di Pasquale.

The Department of Education and Human Development offers teacher certification programs in Early Childhood Education, Childhood Education, and Adolescence Education. Students pursuing a degree program with certification must also complete an appropriate academic major.

**Admission Requirements**

There are specific requirements for acceptance to all teacher education programs and additional requirements for maintaining eligibility. For all certification areas, admission to the program requires a separate application, usually prior to entering the junior year. Applications and program information are available from the Department of Education and Human Development, the Office of Undergraduate Admissions, and at [www.brockport.edu/ehd](http://www.brockport.edu/ehd). All programs require a minimum cumulative GPA of 2.5 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**

New York State Board of Regents policies have lead to changes in both certificate titles and certification requirements. These changes are reflected in this catalog and on the department Web site. SUNY Brockport's programs have been approved and they provide teacher preparation for certification that is eligible for the College's recommendation for a New York state teaching credential. New 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.

Successful completion of the Liberal Arts and Sciences Test (LAST), the Assessment of Teaching Skills–Written (ATS-W), and the Content Specialty Test (CST) portions of the New York State Teacher Certification Examinations are 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 and to our Web page for additional information on certification.

Certification in both the Early Childhood (Birth–Grade 2) and Childhood (Grade 1–Grade 6) areas requires an appropriate major in an academic area. Education is **NOT** a major at

SUNY Brockport. A list of approved majors can be found under the individual certification areas below. 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.

**Early Childhood Teacher Certification (Birth — Grade 2)**

**Program Requirements**

I. General Education Requirements: Teacher candidates must meet the General Education requirements in effect at the time of acceptance.

II. Pre-professional Preparation: Academic Major: Teacher candidates seeking certification in Early Childhood Education must complete one of the following academic majors prior to graduation:

Arts for Children	French	Meteorology
Biological Science	Geology	Physics
Chemistry	Health Science	Political Science
Earth Science	History	Spanish
English	Mathematics	

III. Pre-professional Preparation: Arts and Science Cognates. In addition to choosing one of the majors listed above, all Early Childhood teacher candidates must complete the following cognate courses, some of which may also meet requirements in the major and/or general education core. The following courses fulfill the liberal arts cognate requirements in the Early Childhood Education Program and may be taken prior to acceptance into the program.

	<b>Credits</b>
A. Foreign Language-one year of college-level study or its equivalent of a language other than English with a grade of "C" or better. American Sign Language can be used to fulfill this requirement.	6
B. English English 482 Children's Literature (3) An advanced writing course such as the following: ENL 210 Creative Writing, ENL 303 Introduction to Literary Analysis (English majors only), ENL 305 Advanced Composition, ENL 405 Creative Writing for Teachers	6  3
C. Mathematics MTH 313 Mathematics for Elementary Teachers I (3) MTH 314 Mathematics for Elementary Teachers II (3)	6
D. Science NAS 273 Investigation in the Physical Science (4) One course in field natural science or earth science (3-4) Choose either: BIO 111 Principles of Biology (4) <b>OR</b> GEL 100 Our Earth (3)	6-8
E. Social Studies ESC 102 Elements of Geography (3) HST 211 Early America <b>OR</b> HST 212 Modern America (3)	6

IV. Professional Preparation: Education Courses (49 credits)

**Phase 1**

*\*PSH 384 & HLS 301 may be taken prior to beginning professional sequence, and require a grade of "C" or better.*

PSH 384 Child Psychology*	3
HLS 301 Principles for Healthful Living*	3

EDI 330 Inquiry Into Learning\* 3  
 (Cumulative GPA of 2.5 or higher must be maintained in order to enroll in EDI 330 and all courses in Phases 2, 3, and 4.)  
 (EDI courses require a grade of "C+").

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**9**

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

EDI 407 Emergent Language and Literacy 3  
 EDI 482 Integrated Early Childhood Curriculum I 6  
 EDI 486 Early Childhood Seminar: Sociocultural Diversity/  
 Working With Families 3

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**12**

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

EDI 325 Diverse Needs of Learners (may be taken prior to program admission or in Phases 1 or 2) 3  
 EDI 487 Supporting Young Children's Language and Literacy Learning 3  
 EDI 483 Integrated Early Childhood Curriculum II 6  
 EDI 430 Education and Society (may be taken in any Phase prior to Phase 4) 3

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**15**

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

V. Professional Preparation: Student Teaching and Seminar (13 credits)

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

EDI 488 Practicum in Early Childhood Education 12  
 EDI 489 Professional Development Seminar 1

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**13**

**Note:** Teacher candidates are responsible for their own transportation for all off-campus field experiences, including student teaching.

**Bilingual-Multicultural Education Certification**

This program allows a student who is pursuing Childhood 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 Childhood school classroom.

To meet the requirement for both the Childhood and the bilingual extension certification, a teacher candidate 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 Childhood; grade 1-6;
3. the Childhood Education Certification program;
4. all other College graduation requirements;
5. the language proficiency examinations in both English and Spanish with passing grades.

During the student-teaching portion of the Childhood 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 the Communications Skills General Education requirement or the equivalent with a grade of “C” or better.

**Childhood Teacher Certification (Grade 1 – Grade 6)**

**Program Requirements**

- I. General Education Requirements: Teacher candidates must meet the General Education requirements in effect at the time of acceptance.
- II. Pre-professional Preparation: Academic Major: Teacher candidates seeking certification in Childhood Education must complete one of the following academic majors prior to graduation:
 

Arts for Children	French	Meteorology
Biological Science	Geology	Physics
Chemistry	Health Science	Political Science
Earth Science	History	Spanish
English	Mathematics	
- III. Pre-professional Preparation: Arts and Science Cognates. In addition to choosing one of the majors listed above, all Childhood Education teacher candidates must complete the following cognate courses, some of which may also meet requirements in the major and/or general education core. The following courses fulfill the liberal arts cognate requirements in the Childhood Education Program and may be taken prior to acceptance into the program.

	<b>Credits</b>
A. Foreign Language-one year of college-level study or its equivalent of a language other than English with a grade of “C” or better . (American Sign Language can be used to fulfill this requirement.)	6
B. English	
English 482 Children’s Literature	3
An advanced writing course such as the following: ENL 210 Creative Writing, ENL 303 Introduction to Literary Analysis (English majors only), ENL 305 Advanced Composition, ENL 405 Creative Writing for Teachers	3
C. Mathematics	6
MTH 313 Mathematics for Elementary Teachers I (3)	
MTH 314 Mathematics for Elementary Teachers II (3)	
D. Science	6-8
NAS 273 Investigation in the Physical Science (4)	
One course in the field of natural science or earth science (3-4) <i>Choose either:</i> BIO 111, Principles of Biology (4) <b>OR</b> GEL 100, Our Earth (3)	
E. Social Studies	6
ESC 102 Elements of Geography (3)	
HST 211 Early America or HST 212 Modern America (3)	

IV. Professional Preparation: Education Courses (46 credits)

<b>Phase 1</b>	<b>Credits</b>
*PSH 384 & HLS 301 may be taken prior to beginning professional sequence, and require a grade of “C” or better.	
PSH 384 Child Psychology*	3
HLS 301 Principles for Healthful Living*	3

EDI 330 Inquiry Into Learning* (Cumulative GPA of 2.5 or higher must be maintained in order to enroll in EDI 330 and all courses in Phases 2, 3, and 4.) (EDI courses require a grade of "C+" or better.)	3
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	<b>9</b>
<b>Phase 2</b> (must be taken concurrently):	
EDI 407 Emergent Language and Literacy	3
EDI 408 The Learner in Mathematics, Science, and Social Studies	6
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	<b>9</b>
<b>Phase 3</b> (must be taken concurrently):	
EDI 325 Understanding the Exceptional Learners (may be taken prior to program admission or in Phases 1 or 2)	3
EDI 417 Language, Literacy, and the Learner	3
EDI 418 The Learner in Mathematics, Science and Social Studies II	6
EDI 430 Education and Society (may be taken in any Phase prior to Phase 4)	3
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	<b>12</b>

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

V. Professional Preparation: Student Teaching and Seminar (13 credits)	
<b>Phase 4</b> (must be taken concurrently):	<b>Credits</b>
EDI 455 Practicum in Childhood Education	12
EDI 456 Professional Development Seminar	1
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	<b>13</b>

**Note:** Teacher candidates are responsible for their own transportation for all off-campus field experiences, including student teaching.

### **Adolescence Teacher Certification with Middle Childhood Education Extension (Grade 5 – Grade 12)**

#### **Program Requirements**

The Department of Education and Human Development offers programs that lead to initial Certification in Adolescence Education (with Middle Childhood extension) in nine 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, the written Assessment of Teaching Skills, and the Content Specialty Test. Please refer to Teacher Preparation at SUNY Brockport in this catalog for additional information on certification.

Each Adolescence Education 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, including student teaching.

Admission to the Adolescence Education program requires a separate application and completion of at least 15-18 credits in the major at time of application.

## English 5-12 Program Requirements

### Phase One Courses and Experiences

- 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: Students can complete the following Phase I courses prior to acceptance. Foreign Language: One year of college-level study in a language other than English, or its equivalent; HLS 301 Principles of Healthful Living; and PSH 484 Adolescence. These Courses require a grade of "C" or better.
- IV. Pre-professional Preparation: Students must complete the BCEC experience or its approved equivalent (a 40-hour experience working under supervision with adolescents in a school or related setting) prior to program acceptance. Students are responsible for their own transportation for all off-campus field experiences, including student teaching.
- V. Professional Preparation: Education Courses (Sequenced by Phase) (36 credits)

<b>Phase Two Courses</b>	<b>Credits</b>
EDI 445 Frameworks for Teaching	3
EDI 428 Middle School Curriculum and Instruction**	3
EDI 431 Language Skills in the Content Areas I	3
<b>Total:</b>	<b>9</b>

**Note:** All courses in Phase Two must be completed before courses in Phase Three may be taken.

<b>Phase Three Courses</b>	<b>Credits</b>
EDI 465 Teaching English Inclusively**	3
EDI 409 Secondary Students with Special Needs	3
EDI 432 Language Skills in the Content Areas II	3
EDI 430 Education and Society	3
<b>Total:</b>	<b>12</b>

**Note:** All courses in Phase Three must be completed before courses in Phase Four may be taken.

VI. Professional Preparation: Student Teaching (15 credits)	
<b>Phase Four Courses</b>	<b>Credits</b>
EDI 475 Practicum in Adolescence Education and Seminar	12
EDI 478 Creating Positive Learning Environments	3
<b>Total:</b>	<b>15</b>

\*\*School-based observation and participation beyond class time are required for this course. Students are responsible for their own transportation for all off-campus field experiences, including student teaching.

## French 5-12 Program Requirements

### Phase One Courses and Experiences

- 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 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. Pre-professional Preparation: Students can complete the following Phase I courses prior to acceptance. Foreign Language: One year of college-level study in a language other than English, or its equivalent, HLS 301 Principles of Healthful Living, and PSH 484 Adolescence. These courses require a grade of "C" or better.
- IV. Pre-professional Preparation: Students must complete the BCEC experience or its approved equivalent (a 40-hour experience working under supervision with adolescents in a school or related setting) prior to program acceptance.
- V. Additional Requirements (3 credits):  
FCE 420 Multiculturalism in the US

#### OR

- CMC 418 Intercultural Communication
- VI. Professional Preparation: Education Courses (Sequenced by Phase) (36 credits)

#### Phase Two Courses

	<b>Credits</b>
EDI 449 Frameworks for Teaching	3
EDI 428 Middle School Curriculum and Instruction**	3
EDI 431 Language Skills in the Content Areas I	3

**Total: 9**

**Note:** All courses in Phase Two must be completed before courses in Phase Three may be taken.

#### Phase Three Courses\*

EDI 469 Teaching Foreign Language Inclusively**	3
EDI 409 Secondary Students with Special Needs	3
EDI 432 Language Skills in the Content Areas II	3
EDI 430 Society and Education	3

**Total: 12**

**Note:** All courses in Phase Three must be completed before courses in Phase Four may be taken.

- VII. Professional Preparation: Student Teaching (15 credits)

#### Phase Four Courses

EDI 475 Practicum in Adolescence Education and Seminar	12
EDI 478 Creating Positive Learning Environments	3

**Total: 15**

\*\*School-based observation and participation beyond class time are required for this course. Students are responsible for their own transportation for all off-campus field experiences, including student teaching.

**Spanish 5-12  
Program Requirements**

**Phase One Courses and Experiences**

- 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 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. Pre-professional Preparation: Students can complete the following Phase I courses prior to acceptance. Foreign Language: One year of college-level study in a language other than English, or its equivalent, HLS 301 Principles of Healthful Living, and PSH 484 Adolescence. These courses require a grade of “C” or better.
- IV. Pre-professional Preparation: Students must complete the BCEC experience or its approved equivalent (a 40-hour experience working under supervision with adolescents in a school or related setting) prior to program acceptance.
- V. Additional Requirements (3 credits):  
FCE 420 Multiculturalism in the US

**OR**

CMC 418 Intercultural Communication

- VI. Professional Preparation: Education Courses (Sequenced by Phase) (36 credits)

<b>Phase Two Courses</b>	<b>Credits</b>
EDI 449 Frameworks for Teaching	3
EDI 428 Middle School Curriculum and Instruction**	3
EDI 431 Language Skills in the Content Areas I	3

**Total: 9**

**Note:** All courses in Phase Two must be completed before courses in Phase Three may be taken.

**Phase Three Courses\***

EDI 469 Teaching Foreign Language Inclusively **	3
EDI 409 Secondary Students with Special Needs	3
EDI 432 Language Skills in the Content Areas II	3
EDI 430 Education and Society	3

**Total: 12**

**Note:** All courses in Phase Three must be completed before courses in Phase Four may be taken.

- VII. Professional Preparation: Student Teaching (15 credits)

<b>Phase Four Courses</b>	<b>Credits</b>
EDI 475 Practicum in Adolescence Education and Seminar	12
EDI 478 Creating Positive Learning Environments	3

**Total: 15**

\*\*School-based observation and participation beyond class time are required for this course. Students are responsible for their own transportation for all off-campus field experiences, including student teaching.

## Mathematics 5-12 Program Requirements

### Phase One Courses and Experiences

- 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 mathematics majors, and successfully complete all requirements for the major, described under the listing for the Department of Mathematics in this catalog.
- III. Pre-professional Preparation: Students can complete the following Phase I courses prior to acceptance. Foreign Language: One year of college-level study in a language other than English, or its equivalent, HLS 301 Principles of Healthful Living, and PSH 484 Adolescence. These courses require a grade of "C" or better.
- IV. Pre-professional Preparation: Students must complete the BCEC experience or its approved equivalent (a 40-hour experience working under supervision with adolescents in a school or related setting) prior to program acceptance.
- V. Professional Preparation: Education Courses (Sequenced by Phase) (36 credits)

<b>Phase Two Courses</b>	<b>Credits</b>
EDI 446 Frameworks for Teaching	3
EDI 428 Middle School Curriculum and Instruction**	3
EDI 431 Language Skills in the Content Areas I	3

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**Total: 9**

**Note:** All courses in Phase Two must be completed before courses in Phase Three may be taken.

### Phase Three Courses\*

EDI 466 Teaching Mathematics Inclusively**	3
EDI 409 Secondary Students with Special Needs	3
EDI 432 Language Skills in the Content Areas II	3
EDI 430 Education and Society	3

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**Total: 12**

**Note:** All courses in Phase Three must be completed before courses in Phase Four may be taken.

- VI. Professional Preparation: Student Teaching (15 credits)

### Phase Four Courses

EDI 475 Practicum in Adolescence Education and Seminar	12
EDI 478 Creating Positive Learning Environments	3

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**Total: 15**

\*\*School-based observation and participation beyond class time are required for this course. Students are responsible for their own transportation for all off-campus field experiences, including student teaching.

## Biology and General Science 5-12 Program Requirements

### Phase One Courses and Experiences

- 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 biology majors and successfully complete all requirements for the major, described under the listing for the Department of Biology in this catalog.
- III. Additional Requirement for general science: In addition to the major, students must complete two science courses in each of the other three science areas.
- IV. Pre-professional Preparation: Students can complete the following Phase I courses prior to acceptance. Foreign Language: One year of college-level study in a language other than English, or its equivalent, HLS 301 Principles of Healthful Living, and PSH 484 Adolescence. These courses require a grade of "C" or better.
- V. Pre-professional Preparation: Students must complete the BCEC experience or its approved equivalent (a 40-hour experience working under supervision with adolescents in a school or related setting) prior to program acceptance.
- VI. Professional Preparation: Education Courses (Sequenced by Phase) (36 credits)

<b>Phase Two Courses</b>	<b>Credits</b>
EDI 447 Frameworks for Teaching	3
EDI 428 Middle School Curriculum and Instruction**	3
EDI 431 Language Skills in the Content Areas I	3

**Total:** 9

**Note:** All courses in Phase Two must be completed before courses in Phase Three may be taken.

<b>Phase Three Courses</b>	
EDI 467 Teaching Science Inclusively**	3
EDI 409 Secondary Students with Special Needs	3
EDI 432 Language Skills in the Content Areas II	3
EDI 430 Education and Society	3

**Total:** 12

**Note:** All courses in Phase Three must be completed before courses in Phase Four may be taken.

- VII. Professional Preparation: Student Teaching (15 credits)

<b>Phase Four Courses</b>	
EDI 475 Practicum in Adolescence Education and Seminar	12
EDI 478 Creating Positive Learning Environments	3

**Total:** 15

\*\*School-based observation and participation beyond class time are required for this course. Students are responsible for their own transportation for all off-campus field experiences, including student teaching.

## Chemistry and General Science 5-12 Program Requirements

### Phase One Courses and Experiences

- I. General Education Requirements: Students must meet the General Education requirements in effect at the time of matriculation.
- II. Pre-professional Preparation: Students can complete the following Phase I courses prior to acceptance. Foreign Language: One year of college-level study in a language other than English, or its equivalent, HLS 301 Principles of Healthful Living, and PSH 484 Adolescence. These courses require a grade of "C" or better.
- III. Pre-professional Preparation: Students must complete the BCEC experience or its approved equivalent (a 40-hour experience working under supervision with adolescents in a school or related setting) prior to program acceptance.
- IV. Pre-professional Preparation: 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.
- V. Additional Requirement for general science: In addition to the major, students must complete two science courses in each of the other three science areas.
- VI. Professional Preparation: Education Courses (Sequenced by Phase) (36 credits)

<b>Phase Two Courses</b>	<b>Credits</b>
EDI 447 Frameworks for Teaching	3
EDI 428 Middle School Curriculum and Instruction**	3
EDI 431 Language Skills in the Content Areas I	3

**Total: 9**

**Note:** All courses in Phase Two must be completed before courses in Phase Three may be taken.

<b>Phase Three Courses</b>	<b>Credits</b>
EDI 467 Teaching Science Inclusively**	3
EDI 409 Secondary Students with Special Needs	3
EDI 432 Language Skills in the Content Areas II	3
EDI 430 Education and Society	3

**Total: 12**

**Note:** All courses in Phase Three must be completed before courses in Phase Four may be taken.

- VII. Professional Preparation: Student Teaching (15 credits)

<b>Phase Four Courses</b>	<b>Credits</b>
EDI 475 Practicum in Adolescence Education and Seminar	12
EDI 478 Creating Positive Learning Environments	3

**Total: 15**

\*\*School-based observation and participation beyond class time are required for this course. Students are responsible for their own transportation for all off-campus field experiences, including student teaching.

## Earth Science and General Science 5-12 Program Requirements

### Phase One Courses and Experiences

- I. General Education Requirements: Students must meet the General Education requirements in effect at the time of matriculation.
- II. Pre-professional Preparation: Students can complete the following Phase I courses prior to acceptance. Foreign Language: One year of college-level study in a language other than English, or its equivalent, HLS 301 Principles of Healthful Living, and PSH 484 Adolescence. These courses require a grade of "C" or better.
- III. Pre-professional Preparation: Students must complete the BCEC experience or its approved equivalent (a 40-hour experience working under supervision with adolescents in a school or related setting) prior to program acceptance.
- IV. Pre-professional Preparation: Academia major: Students must formally declare themselves as earth science majors, and successfully complete all requirements for the major, described under the listing for the Department of the Earth Sciences in this catalog.
- V. Additional Requirement for general science: In addition to the major, students must complete two science courses in each of the other three science areas.
- VI. Professional Preparation: Education Courses (Sequenced by Phase) (36 credits)

<b>Phase Two Courses</b>	<b>Credits</b>
EDI 447 Frameworks for Teaching	3
EDI 428 Middle School Curriculum and Instruction**	3
EDI 431 Language Skills in the Content Areas I	3
<b>Total: 9</b>	

**Note:** All courses in Phase Two must be completed before courses in Phase Three may be taken.

<b>Phase Three Courses</b>	<b>Credits</b>
EDI 467 Teaching Science Inclusively**	3
EDI 409 Secondary Students with Special Needs	3
EDI 432 Language Skills in the Content Areas II	3
EDI 430 Education and Society	3
<b>Total: 12</b>	

**Note:** All courses in Phase Three must be completed before courses in Phase Four may be taken.

VII. Professional Preparation: Student Teaching (15 credits)	
<b>Phase Four Courses</b>	<b>Credits</b>
EDI 475 Practicum in Adolescence Education and Seminar	12
EDI 478 Creating Positive Learning Environments	3
<b>Total: 15</b>	

\*\*School-based observation and participation beyond class time are required for this course. Students are responsible for their own transportation for all off-campus field experiences, including student teaching.

## Physics and General Science 5-12 Program Requirements

### Phase One Courses and Experiences

- I. General Education Requirements: Students must meet the General Education requirements in effect at the time of matriculation.
- II. Pre-professional Preparation: Students can complete the following Phase I courses prior to acceptance. Foreign Language: One year of college-level study in a language other than English, or its equivalent, HLS 301 Principles of Healthful Living, and PSH 484 Adolescence. These courses require a grade of "C" or better.
- III. Pre-professional Preparation: Students must complete the BCEC experience or its approved equivalent (a 40-hour experience working under supervision with adolescents in a school or related setting) prior to program acceptance.
- IV. Pre-professional Preparation: Academic major: 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.
- V. Additional Requirement for general science: In addition to the major, students must complete two science courses in each of the other three science areas.
- VI. Professional Preparation: Education Courses (Sequenced by Phase) (36 credits)

#### Phase Two Courses

EDI 447 Frameworks for Teaching	3
EDI 428 Middle School Curriculum and Instruction**	3
EDI 431 Language Skills in the Content Areas I	3
<b>Total:</b>	<b>9</b>

**Note:** All courses in Phase Two must be completed before courses in Phase Three may be taken.

#### Phase Three Courses

EDI 467 Teaching Science Inclusively**	3
EDI 409 Secondary Students with Special Needs	3
EDI 432 Language Skills in the Content Areas II	3
EDI 430 Education and Society	3
<b>Total:</b>	<b>12</b>

**Note:** All courses in Phase Three must be completed before courses in Phase Four may be taken.

- VII. Professional Preparation: Student Teaching (15 credits)

#### Phase Four Courses

EDI 475 Practicum in Adolescence Education and Seminar	12
EDI 478 Creating Positive Learning Environments	3
<b>Total:</b>	<b>15</b>

\*\*School-based observation and participation beyond class time are required for this course. Students are responsible for their own transportation for all off-campus field experiences, including student teaching.

## Social Studies 5-12 Program Requirements

### Phase One Courses and Experiences

- 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: Students can complete the following courses prior to acceptance. Foreign Language: One year of college-level study in a language other than English, or its equivalent; HLS 301 Principles of Healthful Living; and PSH 484 Adolescence. These courses require a grade of "C" or better.
- IV. Pre-professional Preparation: Students must complete the BCEC experience or its approved equivalent (a 40-hour experience working under supervision with adolescents in a school or related setting) prior to program acceptance.
- V. Pre-professional Preparation: Social Science Courses (12 credits)

	<b>Credits</b>
PLS 113 American Political Systems	3
ESC 102 Elements of Geography	3
Choose one course from the following areas:	3
African-American Studies, Anthropology, or Sociology	
ECN 100 Contemporary Economic Problems or	3
ECN 202 Macro Economics	

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**Total: 12**

- VI. Professional Preparation: Education Courses (Sequenced by Phase)  
(36 credits)

<b>Phase Two Courses</b>	<b>Credits</b>
EDI 448 Frameworks for Teaching	3
EDI 428 Middle School Curriculum and Instruction**	3
EDI 431 Language Skills in the Content Areas I	3

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**Total: 9**

**Note:** All courses in Phase Two must be completed before courses in Phase Three may be taken.

<b>Phase Three Courses</b>	
EDI 468 Teaching Social Studies Inclusively**	3
EDI 409 Secondary Students with Special Needs	3
EDI 432 Language Skills in the Content Areas II	3
EDI 430 Education and Society	3

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**Total: 12**

**Note:** All courses in Phase Three must be completed before courses in Phase Four may be taken.

- VII. Professional Preparation: Student Teaching (15 credits)

**Phase Four Courses**

EDI 475 Practicum in Adolescence Education and Seminar	12
EDI 478 Creating Positive Learning Environments	3

**Total: 15**

\*\*School-based observation and participation beyond class time are required for this course. Students are responsible for their own transportation for all off-campus field experiences, including student teaching.

EDUCATION AND HUMAN  
DEVELOPMENT COURSES

**EDI 325 Diverse Needs of Learners (B).** Participants will examine the characteristics and appropriate education planning for individuals with exceptionalities. The course will emphasize educational and developmental factors that affect individuals and groups traditionally considered exceptional. A cross categorized perspective will be the focus rather than the presentation of excessive details about specific labels. *3 Cr. Every Semester.*

**EDI 330 Inquiry into Learning (B).** *Prerequisite: Acceptance in Early Childhood or Childhood Program.* Explores current theories of learning. Also explores how students and others learn and examines the implications for school learning experiences. Ties how one learns to how we teach and assess understanding. Attention is given to meeting the diverse needs of all learners. Includes a 15-hour field component. *3 Cr. Every Semester.*

**EDI 360 America Reads I (B).** 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. Every Semester.*

**EDI 361 America Reads II (B).** *Prerequisite: EDI 360.* Provides opportunities for students to work with individuals to improve their literacy skills. Requires students to serve as student mentors to help coordinate the activities of first-year students. *3 Cr. Every Semester.*

**EDI 407 Emergent Language and Literacy (B).** *Prerequisites: EDI 330. Childhood corequisite: EDI 408. Early Childhood corequisites: EDI 482, EDI 486.* Explores universality and diversity in the development of oral and written language. Emphasizes constructivist, sociocultural, and sociopscho-linguistic perspectives. Examines language processes, strategies, and materials for supporting all young children's oral and written language development. Also examines national and state standards for literacy learning. Explores authentic assessment strategies. *3 Cr. Every Semester.*

**EDI 408 The Learner in Math, Science and Social Studies I (B).** *Prerequisite: EDI 330. Corequisite: EDI 407.* Explores elements of instruction in the context of mathematics, science, and social studies in grades 1 through 6. Includes an extensive field experience. Also includes planning and implementing lessons for diverse learning needs, integrating across multiple content areas and addressing state and national learning standards. *6 Cr. Every Semester.*

**EDI 409 Secondary Students with Special Needs (B).** *Prerequisites: EDI 44X, EDI 428, EDI 431. Corequisites: EDI 46X, EDI 432, EDI 430.* Examines the social, educational, and personal implications of human exceptionality. Explores issues and concerns related to the identification and evaluation of exceptional individuals. Explores ways to modify curriculum and instruction to meet the needs of a range of students, including inclusive as well as gifted and talented. Emphasizes the historical, legal, and instructional issues related to educating students who learn differently. *3 Cr. Every Semester.*

**EDI 417 Language Literacy and the Learner (B).** *Prerequisites: EDI 330, EDI 407, EDI 408. Corequisite: EDI 418.* Continuation of students' Emergent Language and Literacy. Expands teacher candidates' understanding of language and literacy processes. Develops increasingly sophisticated understanding of and skill in implementing a range of strategies for supporting the language and literacy learning of diverse learners in grades 1 through 6. Engages students in continued inquiry into a range of assessment strategies, and develops skill in linking assessment and instruction. Examines strategies for integrating language and literacy across all curricular areas, as well as creating learning environments that support children's language and literacy learning. *3 Cr. Every Semester.*

**EDI 418 The Learner in Math, Science, Social Studies II (B).** *Prerequisites: EDI 330, EDI 407, EDI 408. Corequisite: EDI 417.* Allows teacher candidates to apply appropriate elements of instruction in the context of mathematics, science, and social studies in grades 1 through 6. Includes an extensive field experience. Includes implementing lessons for diverse

learning needs, integrating across multiple content areas and addressing state and national learning standards. *6 Cr. Every Semester.*

**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 teacher candidates 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 428 Middle School Curriculum and Instruction (B).** Admission to Adolescent Education Program. *Corequisites: EDI 431, EDI 44X.* Introduces teacher candidates to middle school philosophy and organization, including the rationale for and function of: interdisciplinary teams, teacher-based guidance programs, flexible grouping and scheduling programs. Focuses on the implications of developmental characteristics for effective instructional strategies. Provides opportunities for the development of interdisciplinary curriculum. Examines current practices and controversial issues in middle grade schools. Includes 30 hours of field experience in a middle level school, grades 5-9. *3 Cr. Every Semester.*

**EDI 430 Education and Society (A,D,I,W).** *Prerequisite: Program admission.* Focuses on social, cultural, historical, and philosophical foundations of education; changing roles of teachers within contexts of contemporary schools; and other programs serving children. *3 Cr. Every Semester.*

**EDI 431 Language Skills in the Middle and High School Content Areas I (B).** *Prerequisite: Admission to Adolescent Education Program. Corequisites: EDI 428, EDI 44X.* Focuses on the notion that reading and listening for meaning are critical to thinking about and learning content knowledge in all disciplines of study in the middle and high schools. Stresses the development of these language skills in early and later adolescence and examines the individual differences among learners and multiple approaches and strategies that may be used to improve students' thinking and learning. Requires an analysis of reading and listening skills and abilities essential to successful learning in the disciplines that are taught in the middle and high schools. Identifies the successful strategies teachers and others have used to be effective readers and listeners and uses these as bridges to the construction of instructional units that improve performance. *3 Cr. Every Semester.*

**EDI 432 Language Skills in Middle and High School Content Areas II (B).** *Prerequisites: EDI 428, EDI 431, EDI 44X. Corequisites: EDI 409, EDI 430, EDI 46X.* Builds on teacher candidates' study in EDI 431. Explores the notion that writing and speaking are fundamental to thinking about and learning content knowledge in all disciplines of study. Achieves an understanding not only of the teachers' own speaking and writing processes, but also of the kinds of experiences that help students write and speak with an authentic voice, develop a high degree of fluency, and produce writing and verbal presentations of consequence. Covers the following areas: using writing and verbal presentations to create and explore thinking, to make learning personal, to get ready to learn, to exercise intellectual independence, to wonder, to struggle with difficult learning, and to engage the imagination in learning. *3 Cr. Every Semester.*

**EDI 445 Frameworks for Teaching English (B).** *Prerequisites: Admission to Adolescent Education Program. Corequisites: EDI 428, EDI 431.* Introduces students to the methods and strategies involved in the teaching of middle and high school English. Begins the teacher candidates' exploration of the nature of teaching, instructional planning, designing unit and lesson plans, interdisciplinary approaches, assessment, and teaching portfolios. Requires teacher candidates to practice teaching lessons they have designed and be reflective about their own and others' lessons. Focuses on teacher candidates' ability to work collaboratively as members of teams. Provides opportunities for teacher candidates to clarify their goals in pursuit of a teaching career and requires them to construct a personal statement of educational philosophy. *3 Cr. Every Semester.*

**EDI 446 Frameworks for Teaching Mathematics (B).** *Prerequisites: Admission to Adolescent Education Program. Corequisites: EDI 428, EDI 431.* Introduces students to the methods and strategies involved in the teaching of a middle and high school mathematics. Begins the teacher candidates' exploration of the nature of teaching, instructional planning, designing unit and lesson plans, interdisciplinary approaches, assessment, and teaching portfolios. Requires teacher candidates to practice teaching lessons they have designed and be reflective about their own and others' lessons. Focuses on teacher candidates' ability to work collaboratively as members of teams. Provides opportunities for students to clarify their goals in pursuit of a teaching career and requires them to construct a personal statement of educational philosophy. *3 Cr. Every Semester.*

**EDI 447 Frameworks for Teaching Science (B).** *Prerequisites: Admission to Adolescent Education Program. Corequisites: EDI 428, EDI 431.* Introduces teacher candidates to the methods and strategies involved in the teaching of middle and high school

science. Begins the teacher candidates exploration of the nature of teaching, instructional planning, designing unit and lesson plans, interdisciplinary approaches, assessment, and teaching portfolios. Requires teacher candidates to practice teaching lessons they have designed and be reflective about their own and others' lessons. Focuses on teacher candidates' ability to work collaboratively as members of teams. Provides opportunities for teacher candidates to clarify their goals in pursuit of a teaching career and requires them to construct a personal statement of educational philosophy. *3 Cr. Every Semester.*

**EDI 448 Frameworks for Teaching Social Studies (B).** *Prerequisite: Admission to Adolescent Education Program. Corequisites: EDI 428, EDI 431.* Introduces teacher candidates to the methods and strategies involved in the teaching of middle and high school social studies. Begins the teacher candidates' exploration of the nature of teaching, instructional planning, designing unit and lesson plans, interdisciplinary approaches, assessment, and teaching portfolios. Requires teacher candidates to practice teaching lessons they have designed and be reflective about their own and others' lessons. Focuses on teacher candidates' ability to work collaboratively as members of teams. Provides opportunities for teacher candidates to clarify their goals in pursuit of a teaching career and requires them to construct a personal statement of educational philosophy. *3 Cr. Every Semester.*

**EDI 449 Frameworks for Teaching Secondary Foreign Language (B).** *Prerequisite: Admission to Adolescent Education Program. Corequisites: EDI 428, EDI 431.* Introduces teacher candidates to the methods and strategies involved in the teaching of middle and high school foreign language. Begins the teacher candidates' exploration of the nature of teaching, instructional planning, designing unit and lesson plans, interdisciplinary approaches, assessment, and teaching portfolios. Requires teacher candidates to practice teaching lessons they have designed and be reflective about their own and others' lessons. Focuses on teacher candidates ability to work collaboratively as members of teams. Provides opportunities for teacher candidates to clarify their goals in pursuit of a teaching career and requires them to construct a personal statement of educational philosophy. *3 Cr. Every Semester.*

**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 Childhood Education (B).** *Prerequisites: EDI 325, EDI 330, EDI 407, EDI 408, EDI 417 and EDI 418. Corequisite: EDI 456.* A full-time, supervised teaching experience in childhood classrooms and settings. The semester is divided into two placements; one in 1-3, the other in 4-6 grades. This is the final course taken in the childhood program. *12 Cr. Every Semester.*

**EDI 456 Professional Development Seminar (B).** *Prerequisites: EDI 325, EDI 330, EDI 407, EDI 408, EDI 417, EDI 418. Corequisite: EDI 455.* Provides ongoing support related to teacher candidates' work in childhood classrooms. Includes topics such as, but not limited to: assessment, curriculum planning and implementation, creating and sustaining supportive classroom environments, certification, and job search strategies. *1 Cr. Every Semester.*

**EDI 465 Teaching English Inclusively (B).** *Prerequisites: EDI 445, EDI 428, EDI 431. Corequisites: EDI 430, EDI 432, EDI 409.* Focuses on inclusive teaching strategies in the English content areas, including lesson planning, instruction, and assessment. Emphasizes secondary curriculum content and the New York State ELA technological applications that apply to teaching and learning. Requires teacher candidates to take an active role in becoming a reflective practitioner, working on personal portfolios, and reading research articles. Includes 40 hours of field experience in a high school inclusion classroom, grades 9-12. *3 Cr. Every Semester.*

**EDI 466 Teaching Mathematics Inclusively (B).** *Prerequisites: EDI 428, EDI 431, EDI 446. Corequisites: EDI 430, EDI 432, EDI 409.* Focuses on inclusive teaching strategies in the mathematics content areas, including lesson planning, instruction, and assessment. Emphasizes secondary curriculum content and the New York State MST standards as well as technological applications that apply to teaching and learning. Requires teacher candidates to take an active role in becoming a reflective practitioner, working on personal portfolios, and reading research articles. Includes 40 hours of field experience in a high school inclusion classroom, grades 9-12. *3 Cr. Every Semester.*

**EDI 467 Teaching Science Inclusively (B).** *Prerequisites: EDI 447, EDI 428, EDI 431. Corequisites: EDI 409, EDI 432, EDI 430.* Focuses on inclusive teaching strategies in the science content areas, including lesson planning, instruction, and assessment. Emphasizes secondary curriculum content and the New York State MST standards as well as technological applications that apply to teaching and learning. Requires teacher candidates to take an active role in becoming a reflective practitioner, working on personal portfolios, and reading research articles. Includes

40 hours of field experience in a high school inclusion classroom, grades 9-12. *3 Cr. Every Semester.*

**EDI 468 Teaching Social Studies Inclusively (B).** *Prerequisites: EDI 428, EDI 431, EDI 448. Corequisites: EDI 409, EDI 430, EDI 432.* Focuses on inclusive teaching strategies in the social studies content areas, including lesson planning, instruction, and assessment. Emphasizes secondary curriculum content and the New York state social studies standards as well as technological applications that apply to teaching and learning. Requires teacher candidates to take an active role in becoming a reflective practitioner, working on personal portfolios, and reading research articles. Includes 40 hours of field experience in a high school inclusion classroom, grades 9-12. *3 Cr. Every Semester.*

**EDI 469 Teaching Foreign Language Inclusively (B).** *Prerequisites: EDI 428, EDI 431, EDI 449. Corequisites: EDI 409, EDI 430, EDI 432.* Focuses on inclusive teaching strategies in the foreign language content areas, including lesson planning, instruction, and assessment. Emphasizes secondary curriculum content and the New York state second language standards as well as technological applications that apply to teaching and learning. Requires teacher candidates to take an active role in becoming a reflective practitioner, working on personal portfolios, and reading research articles. Includes 40 hours of field experience in a high school inclusion classroom, grades 9-12. *3 Cr. Spring.*

**EDI 475 Practicum in Adolescence Education Seminar (B).** *Prerequisites: EDI 428, EDI 431, EDI 409, EDI 430, EDI 432, EDI 44X, EDI 46X. Corequisite: EDI 478.* A full-time, supervised teaching experience in middle childhood and adolescence classrooms and settings. The semester is divided into two placements; one in grades 5-8, the other in grades 9-12. This is the final course taken in the Adolescence Certification Program. *12 Cr. Every Semester.*

**EDI 478 Creating Positive Learning Environments (B).** *Prerequisites: EDI 409, EDI 428, EDI 430, EDI 431, EDI 432, EDI 44X, EDI 46X. Corequisite: EDI 475.* Examines strategies to establish and maintain positive classroom learning environments. Emphasizes reflection on practice, effective use of class time, understanding group dynamics, and interpreting student actions in classrooms. *3 Cr. Every Semester.*

**EDI 482 Integrated Early Childhood Curriculum I (B).** *Prerequisites: EDI 330. Corequisites: EDI 486, EDI 407.* Explores strategies for supporting the learning and growth of all young children across developmental domains and curricular areas, birth through grade two. Explores topics such as creating integrated, inquiry-based, anti-bias curricula and

learning environments; understanding children's mathematical, scientific, social, and artistic thinking and development; strategies for assessment; and meaningful integration of technology across the curriculum. Entails extensive field experience with children birth to age 2, preK-kindergarten/nursery, and grades 1 and 2 as integral. *6 Cr. Spring.*

**EDI 483 Integrated Early Childhood Curriculum II (B).** *Prerequisites: EDI 330, EDI 407, EDI 482, EDI 486. Corequisite: EDI 487.* A continuation of Integrated Early Childhood Curriculum I. Continues to explore and refine teacher candidates' understanding of strategies for supporting the learning and growth of all young children across developmental domains and curricular areas. Explores topics in greater depth, such as creating integrated, inquiry-based, anti-bias curricula and learning environments; understanding children's mathematical, scientific, social, and artistic thinking and development; strategies for assessment; and meaningful integration of technology across the curriculum. Entails extensive field experiences with children in preschool and kindergarten and/or 1st or 2nd grades as integral. *6 Cr. Fall.*

**EDI 486 Early Childhood Seminar: Sociocultural Diversity/Working with Families and Communities (B).** *Prerequisite: EDI 330. Corequisites: EDI 407, EDI 482.* Explores how individuals, families, communities, and institutions are socioculturally situated. Examines family systems and processes, as well as ways of equitably and meaningfully working with diverse families and community members. Also examines possible causes, indicators, and outcomes of child abuse and neglect, including the role of educators in identifying and reporting suspected abuse and neglect. *3 Cr. Spring.*

**EDI 487 Supporting Young Children's Language and Literacy Learning (B).** *Prerequisites: EDI 330, EDI 407, EDI 482, EDI 486. Corequisite: EDI 483.* Continues opportunities to develop and refine understandings of language and literacy processes. Includes topics such as strategies for teaching language and literacy through inquiry-based, anti-bias curriculum; examination of national and state language arts standards; understanding and meeting the needs of diverse language and literacy learners; uses of a variety of assessment strategies; and technology in language and literacy learning. *3 Cr. Fall.*

**EDI 488 Practicum in Early Childhood Education (B).** *Prerequisites: EDI 325, EDI 330, EDI 407, EDI 482, EDI 483, EDI 486, EDI 487. Corequisite: EDI 489.* Entails a full-time supervised teaching experiences in early childhood classrooms and settings. Divides the semester into two placements: one in pre-kindergarten or kindergarten, the other in 1st or 2nd grade. *12 Cr. Spring.*

**EDI 489 Professional Development Seminar in Early Childhood (B).** *Prerequisites:* EDI 325, EDI 330, EDI 407, EDI 482, EDI 483, EDI 486, EDI 487. *Corequisite:* EDI 488. Provides ongoing support related to teacher candidates' work in early childhood classrooms. Includes topics such as, but not limited to: assessment, curriculum planning and implementation, creating and sustaining supportive classroom environments, certification, and job search strategies. *1 Cr. 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. *1-3 Cr.*

**EDI 499 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.*