Minor in Linguistics

REQUIRED COURSES

Complete the following course:

LIN U150	Introduction to Language and Linguistics	4 SH

Complete two of the following courses:

LIN U350	Linguistic Analysis	4 SH
LIN U422	Phonology	4 SH
LIN U450	Syntax	4 SH

ELECTIVE COURSES

Complete two linguistics courses (or cross-listed equivalents) from the following list but excluding LIN U466, LIN U612, and LIN U660:
LIN U300 to LIN U699

GPA REQUIREMENT

2.000 GPA required in the minor

For more information on the linguistics minor, contact the program director, Professor Janet Randall (565 Holmes), at 617.373.3678 or at j.randall@neu.edu.

MATHEMATICS

www.math.neu.edu

Robert C. McOwen, PhD
Professor and Chair

MATTHEWS DISTINGUISHED UNIVERSITY PROFESSOR

Mikhail Shubin, PhD

PROFESSORS

Samuel J. Blank, PhD
Bohumil Cenkl, ScD
Stanley J. Eigen, PhD
Terence J. Gaffney, PhD
Maurice E. Gilmore, PhD
Arshag B. Hajian, PhD
Anthony Iarrobino, PhD
Christopher K. King, PhD
Venkatrama Lakshmibai, PhD
Marc N. Levine, PhD
Mikhail Malioutov, PhD
David Massey, PhD
Richard D. Porter, PhD
Egon Schulte, PhD
Jayant M. Shah, PhD
Alexandru I. Suciu, PhD
Jerzy M. Weyman, PhD
Andrei V. Zelevinsky, PhD

ASSOCIATE PROFESSORS

Maxim Braverman, PhD
Mark Bridger, PhD
Robert W. Case, PhD
Aidong Adam Ding, PhD
John N. Frampton, PhD
Eugene H. Gover, PhD
Samuel Gutmann, PhD
Solomon M. Jekel, PhD
Donald R. King, PhD
Nishan Krikorian, PhD
Alex Martsinkovsky, PhD
Mark B. Ramras, PhD
Martin Schwarz, PhD
Thomas O. Sherman, PhD
Gordana G. Todorov, PhD

ASSISTANT PROFESSOR

Peter Topalov, PhD

CLINICAL ASSISTANT PROFESSOR OF MATHEMATICAL PRACTICE

Carla B. Oblas, MS

LECTURERS

Rekha Bai, PhD
Joan Campbell, BS
John Lindhe, MS
Robert A. Lupi, MA
Shu-Shih Wu, PhD

PROFESSORS EMERITI

Holland C. Filgo, PhD
Gabriel Stolzenberg, PhD
Jack Warga, PhD

Mathematics is of ever-increasing importance to our society and everyday life. It has long been the language of science and technology, and provides a rich source of methods for analyzing and solving problems encountered in the physical world. Today, mathematics is essential in virtually all fields of human endeavor, including business, the arts, and the social sciences.

The Bachelor of Arts degree requires at least eleven mathematics courses and two physics courses, in addition to the study of a foreign language; this program is appropriate for students who wish a broader liberal arts education. The Bachelor of Science degree requires at least fourteen mathematics courses and two physics courses but no foreign language study; it is more specialized, and it is recommended for those strongly interested in mathematics and science. The department also offers a minor degree in mathematics.

The major programs provide flexibility with elective courses. Students may take advantage of a range of interdisciplinary programs and may join a major in mathematics with one in such fields as computer science, physics, and biology.

Exceptional students are accepted into the honors program, and have the option to enroll in honors sections of several of their mathematics courses. All math majors may benefit from co-op opportunities in the scientific and business communities

in Boston and elsewhere. Almost every job involves mathematically stimulating work that enables students to find out how math is used in the world around us.

Many of the mathematics courses that we offer use computers for visualization, modeling, and numerical approximation. The math computer lab features twenty-eight personal computers supported by student mentors in a pleasant physical environment.

Students planning to teach secondary-school mathematics must major in mathematics and take a specific minor in education, which includes course work and student teaching.

Mathematical training may lead to opportunities in applied research (natural sciences, engineering, economics, management, computer science) as well as in mathematical research, teaching, or industry. See pages 412–417 for course descriptions.

BA in Mathematics

COLLEGE OF ARTS AND SCIENCES BA CORE REQUIREMENTS FOR NATURAL SCIENCE MAJORS

See page 48 for requirement list.

MATHEMATICS MAJOR REQUIREMENTS FOR BA

Problem Solving

Complete the following course:

MTH U165	Introduction to Mathematical Reasoning	4 SH

History of Mathematics

Complete the following course:

MTH U201	History of Mathematics	4 SH

Calculus

Complete the following three courses:

MTH U241	Calculus 1 for Science and Engineering	4 SH
MTH U242	Calculus 2 for Science and Engineering	4 SH
MTH U341	Calculus 3 for Science and Engineering	4 SH

Intermediate and Advanced Math

Complete the following four courses:

MTH U371	Linear Algebra	4 SH
MTH U550	Real Analysis	4 SH
or MTH U565	Topology	4 SH
MTH U560	Geometry	4 SH
or MTH U430	Number Theory	4 SH
MTH U575	Group Theory	4 SH

Mathematics Electives

Complete two electives from mathematics courses at 400 level or above:

MTH U401 to MTH U799

Required Physics

Complete the following two courses and corresponding labs:

PHY U161	Physics 1	4 SH
with PHY U162	Lab for PHY U161	1 SH
or PHY U151	Physics for Engineering 1	4 SH
with PHY U152	Lab for PHY U151	1 SH
PHY U165	Physics 2	4 SH
with PHY U166	Lab for PHY U165	1 SH
or PHY U155	Physics for Engineering 2	4 SH
with PHY U156	Lab for PHY U155	1 SH

MATHEMATICS MAJOR GRADE REQUIREMENT

A grade of C or higher is required in all mathematics courses at level 399 and lower.

EXPERIENTIAL EDUCATION REQUIREMENT

Complete one course in experiential education. Please see department for approved courses.

MATHEMATICS MAJOR CREDIT REQUIREMENT

Complete 54 semester hours in the major.

UPPER-DIVISION ELECTIVES

Complete three general electives at 300 level or above.

GENERAL ELECTIVES

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION

If elected

UNIVERSITY-WIDE REQUIREMENTS

128 total semester hours required

Transition students are required to complete 132 total semester hours

Minimum 2.000 GPA required

BS in Mathematics

COLLEGE OF ARTS AND SCIENCES BS CORE REQUIREMENTS FOR NATURAL SCIENCE MAJORS

See page 51 for requirement list.

MATHEMATICS MAJOR REQUIREMENTS FOR BS

Problem Solving

Complete the following course:

MTH U165	Introduction to Mathematical Reasoning	4 SH

Calculus

Complete the following three courses with a grade of C or higher:

MTH U241	Calculus 1 for Science and Engineering	4 SH
MTH U242	Calculus 2 for Science and Engineering	4 SH
MTH U341	Calculus 3 for Science and Engineering	4 SH

Intermediate and Advanced Math

Complete the following five courses:

MTH U345	Ordinary Differential Equations	4 SH
MTH U371	Linear Algebra	4 SH
MTH U481	Probability and Statistics	4 SH
MTH U550	Real Analysis	4 SH
MTH U575	Group Theory	4 SH

Mathematics Electives

Complete five mathematics courses at 400 level or higher:

MTH U401 to MTH U799

Required Physics

Complete the following two courses and corresponding labs:

PHY U161	Physics 1	4 SH
with PHY U162	Lab for PHY U161	1 SH
or PHY U151	Physics for Engineering 1	4 SH
with PHY U152	Lab for PHY U151	1 SH
PHY U165	Physics 2	4 SH
with PHY U166	Lab for PHY U165	1 SH
or PHY U155	Physics for Engineering 2	4 SH
with PHY U156	Lab for PHY U155	1 SH

MATHEMATICS MAJOR GRADE REQUIREMENT

A grade of C or higher is required in all mathematics courses at level 399 and lower.

EXPERIENTIAL EDUCATION REQUIREMENT

Complete one course in experiential education. Please see department for approved courses.

MATHEMATICS MAJOR CREDIT REQUIREMENT

Complete 66 semester hours in the major.

UPPER-DIVISION ELECTIVES

Complete three general electives at 300 level or above.

GENERAL ELECTIVES

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION

If elected

UNIVERSITY-WIDE REQUIREMENTS

128 total semester hours required

Transition students are required to complete 132 total semester hours

Minimum 2.000 GPA required

BS in Mathematics and Physics

COLLEGE OF ARTS AND SCIENCES BS CORE REQUIREMENTS FOR NATURAL SCIENCE MAJORS

See page 51 for requirement list.

MATHEMATICS REQUIREMENTS

Calculus

Complete the following three courses with a grade of C or higher:

MTH U241	Calculus 1 for Science and Engineering	4 SH
MTH U242	Calculus 2 for Science and Engineering	4 SH
MTH U341	Calculus 3 for Science and Engineering	4 SH

Intermediate and Advanced Math

Complete the following five courses:

MTH U345	Ordinary Differential Equations	4 SH
MTH U371	Linear Algebra	4 SH
MTH U481	Probability and Statistics	4 SH
MTH U550	Real Analysis	4 SH
MTH U575	Group Theory	4 SH

Co-op Reflections

Complete the following two courses:

MTH U300	Co-op Reflections Seminar 1	1 SH
MTH U400	Co-op Reflections Seminar 2	1 SH

Mathematics Electives

Complete five courses from the following list:

MTH U401 to MTH U799

PHYSICS REQUIREMENTS

Introductory Physics

Complete the following two courses with corresponding labs:

PHYSICS 1

PHY U161	Physics 1	4 SH
with PHY U162	Lab for PHY U161	1 SH
or PHY U151	Physics for Engineering 1	4 SH
with PHY U152	Lab for PHY U151	1 SH

PHYSICS 2

PHY U165	Physics 2	4 SH
with PHY U166	Lab for PHY U165	1 SH
or PHY U155	Physics for Engineering 2	4 SH
with PHY U156	Lab for PHY U155	1 SH

Intermediate Physics

Complete the following three courses:

PHY U303	Modern Physics	4 SH
PHY U305	Thermodynamics and Statistical Mechanics	4 SH
PHY U371	Electronics	4 SH

Advanced Physics

Complete the following two courses:

PHY U600	Advanced Physics Laboratory 1	4 SH
PHY U602	Electricity and Magnetism	4 SH

Elective Courses

Complete two courses from the following list:

PHY U400 to PHY U799

INTEGRATIVE COURSES

Complete the following two courses:

PHY U601	Classical Dynamics	4 SH
MTH U545	Fourier Series and PDEs	4 SH
or MTH U525	Applied Analysis	4 SH

EXPERIENTIAL EDUCATION REQUIREMENT

Complete one course in experiential education. Please see department for approved courses.

MATHEMATICS/PHYSICS DUAL-MAJOR CREDIT REQUIREMENT

Complete 100 semester hours in the major.

GENERAL ELECTIVES

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION

If elected

UNIVERSITY-WIDE REQUIREMENTS

128 total semester hours required
Transition students are required to complete 132 total semester hours
Minimum 2.000 GPA required

BS in Computer Science and Mathematics

See page 215.

BS in Environmental Geology and Mathematics

See page 90.

BS in Geology and Mathematics

See page 89.

Minor in Mathematics

REQUIRED COURSES

Complete the following two courses:

MTH U241	Calculus 1 for Science and Engineering	4 SH
MTH U242	Calculus 2 for Science and Engineering	4 SH

Biology majors may substitute the following two courses:

MTH U151	Calculus and Differential Equations for Biology 1	4 SH
MTH U152	Calculus and Differential Equations for Biology 2	4 SH

INTEGRATIVE COURSES

Complete two courses from the following list:

MTH U430	Number Theory	4 SH
MTH U433	Combinatorial Mathematics	4 SH
MTH U560	Geometry	4 SH
MTH U565	Topology	4 SH
MTH U571	Advanced Linear Algebra	4 SH
MTH U575	Group Theory	4 SH
MTH U576	Rings and Fields	4 SH

MATHEMATICS ELECTIVES

Complete two upper-division courses at the 300 level or above: MTH U301 to MTH U699

GPA REQUIREMENT

2.000 GPA required in the minor

MODERN LANGUAGES

www.modernlanguages.neu.edu

Dennis R. Cokely, PhD
Associate Professor and Chair

MATTHEWS DISTINGUISHED UNIVERSITY PROFESSOR
Harlow L. Robinson, PhD

STOTSKY PROFESSOR OF JEWISH HISTORICAL AND CULTURAL STUDIES
Inez Hedges, PhD

PROFESSORS
Thomas Havens, PhD
Stephen A. Sadow, PhD

ASSOCIATE PROFESSORS
Walter M. Gershuny, PhD
Christina Gilmartin, PhD
Bonnie S. McSorley, PhD
Holbrook C. Robinson, PhD
John Spiegel, PhD
Alan West-Duran, PhD

ASSISTANT PROFESSOR
Marisol Fernandez-Garcia, PhD

LECTURERS
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Catherine Dunand, MA
Bertrand Landry, PhD
Paul LaPlante, MA
Luigia Gina Maiellaro, PhD
Sermin Muctehitzade, MA
Rita Schneider, MA
Claudia Sokol, MD

The study of modern languages can benefit all students, regardless of their majors. The multicultural world in which we live requires increased communication among varied and often divergent cultures. Learning a new language and its culture enables students to cross cultural barriers and to achieve a more cosmopolitan, open-minded, and sensitive view of the world.

The major seeks to ensure that students become as fluent as possible in a given language and introduces them to the relevant culture of that language. For this reason, the students take a number of language classes as well as literature, cinema, and general civilization courses. In addition, students are required to participate in study abroad and are urged to consider participating in international co-op, which prepares students to function on an everyday level in a foreign country.

The major in modern languages is currently available in Spanish and in French. It is also possible to minor in French or Spanish.

A major in a modern language can form the basis for careers in teaching at the elementary, secondary, or college level; international business relations; high-tech fields; government service; journalism; library science; world affairs; travel; and community service, especially in Spanish-speaking areas.
See pages 385–396 for course descriptions.

BA in French

COLLEGE OF ARTS AND SCIENCES BA CORE REQUIREMENTS

See page 48 for requirement list.

FRENCH MAJOR REQUIREMENTS

Language Courses

Complete the following three courses:

LNF U301	French Conversation and Composition 1	4 SH
LNF U302	French Conversation and Composition 2	4 SH
LNF U501	Advanced French	4 SH

World Perspective

Complete the following two courses:

LNF U150	Introduction to French Culture	4 SH
LNM U250	International Perspectives	4 SH

Language and Linguistics

Complete the following course:

ENG U150	Introduction to Language and Linguistics	4 SH

Literature and Culture

Complete the following five courses:

LNF U280	French Film and Culture	4 SH
LNF U550	Masterpieces of French Literature 1	4 SH
LNF U551	Masterpieces of French Literature 2	4 SH
LNF U650	French Poetry	4 SH
LNF U651	The Splendid Century	4 SH
or LNF U652	Age of Enlightenment	4 SH

French Seminar

Complete the following seminar:

LNF U670	Topics in French	4 SH

Study Abroad/Experiential Education

Please see department for details and approved courses.

Capstone

Complete the following capstone:

LNF U700	Capstone Seminar	1 SH

FRENCH MAJOR CREDIT REQUIREMENT

Complete 65 semester hours in the major, which includes 16 semester hours of study abroad.

GENERAL ELECTIVES

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION

If elected

UNIVERSITY-WIDE REQUIREMENTS

128 total semester hours required
Transition students are required to complete 132 total semester hours
Minimum 2.000 GPA required

BA in Spanish

COLLEGE OF ARTS AND SCIENCES BA CORE REQUIREMENTS

See page 48 for requirement list.

SPANISH MAJOR REQUIREMENTS

Language Requirements

Complete the following three courses:

LNS U301	Spanish Conversation and Composition 1	4 SH
LNS U302	Spanish Conversation and Composition 2	4 SH
LNS U501	Advanced Spanish	4 SH

Language and Linguistics

Complete the following course:

ENG U150	Introduction to Language and Linguistics	4 SH

Culture

Complete the following four courses:

LNM U250	International Perspectives	4 SH
LNS U150	Spanish Culture	4 SH
LNS U160	Latin American Culture	4 SH
LNS U240	Latin American Film	4 SH

Literature

Complete the following four courses:

LNS U250	Cervantes and His Times	4 SH
LNS U550	Masterpieces of Spanish Literature: Twelfth–Seventeenth Century	4 SH
LNS U551	Masterpieces of Spanish Literature: Eighteenth–Twentieth Century	4 SH
LNS U650	Latin American Literature	4 SH

Spanish Seminar

Complete the following seminar:

LNS U670	Spanish Seminar	4 SH

Study Abroad/Experiential Education

See department for details.

Capstone

Complete the following capstone:

LNS U700	Capstone Seminar	1 SH

SPANISH MAJOR CREDIT REQUIREMENT

Complete 69 semester hours in the major, which includes 16 semester hours of study abroad.

GENERAL ELECTIVES

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION

If elected

UNIVERSITY-WIDE REQUIREMENTS

128 total semester hours required
Transition students are required to complete 132 total semester hours
Minimum 2.000 GPA required

BA in Modern Languages and International Affairs

COLLEGE OF ARTS AND SCIENCES BA CORE REQUIREMENTS FOR SPECIFIED PROGRAMS

See page 49 for requirement list.

MODERN LANGUAGE REQUIREMENTS

Language Requirements

Complete the following three courses for the language of your major:

FRENCH

LNF U301	French Conversation and Composition 1	4 SH
LNF U302	French Conversation and Composition 2	4 SH
LNF U501	Advanced French	4 SH

SPANISH

LNS U301	Spanish Conversation and Composition 1	4 SH
LNS U302	Spanish Conversation and Composition 2	4 SH
LNS U501	Advanced Spanish	4 SH

Literature

Complete one course from the following list within the language of your major:

FRENCH

LNF U550	Masterpieces of French Literature 1	4 SH
or LNF U551	Masterpieces of French Literature 2	4 SH

SPANISH

LNS U550	Masterpieces of Spanish Literature: Twelfth–Seventeenth Century	4 SH
or LNS U551	Masterpieces of Spanish Literature: Eighteenth–Twentieth Century	4 SH

Advanced Language

Complete two advanced literature/cultural courses in the appropriate language while on study abroad.

Language Electives

Complete three electives within the language of your major at or above the 400 level:

FRENCH

LNF U400 to LNF U699

SPANISH

LNS U400 to LNS U699

INTERNATIONAL AFFAIRS REQUIREMENTS

Required Courses

Complete the following three courses:

ECN U115	Principles of Macroeconomics	4 SH
or ECN U290	The Global Economy	4 SH
IAF U101	Globalization and International Affairs	4 SH
IAF U400	International Conflict and Negotiation	4 SH

Regional Analysis

Complete three regional analysis courses, two of which must be in one region, from the list "Approved Courses: International Affairs—Regional Analysis and Global Dynamics" on page 114. See department for additional courses.

Global Dynamics

Complete three global dynamics courses from the list "Approved Courses: International Affairs—Regional Analysis and Global Dynamics" on page 114.

INTEGRATIVE COURSES

Capstone

Complete the following two courses:

IAF U700	Senior Capstone Seminar in International Affairs	4 SH
LNM U250	International Perspectives	4 SH

EXPERIENTIAL EDUCATION

Study Abroad/Experiential Education

Complete at least one semester via study abroad.

MODERN LANGUAGES/INTERNATIONAL AFFAIRS DUAL-MAJOR CREDIT/GPA REQUIREMENTS

Complete 80 semester hours in the major with a cumulative GPA of 3.000.

GENERAL ELECTIVES

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION

If elected

UNIVERSITY-WIDE REQUIREMENTS

128 total semester hours required

Transition students are required to complete 132 total semester hours

Minimum 2.000 GPA required

BA in Cinema Studies and Modern Languages

See page 78.

Minor in French

REQUIRED COURSES

Complete the following three courses:

LNF U150	Introduction to French Culture	4 SH
LNF U301	French Conversation and Composition 1	4 SH
LNF U302	French Conversation and Composition 2	4 SH

MASTERPIECES SERIES

Complete one of the following courses:

LNF U550	Masterpieces of French Literature 1	4 SH
or LNF U551	Masterpieces of French Literature 2	4 SH

ADVANCED ELECTIVES

Complete two courses from the following list. One of the two courses can be the remaining half of the Masterpieces Series:

LNF U550	Masterpieces of French Literature 1	4 SH
or LNF U551	Masterpieces of French Literature 2	4 SH
LNF U650	French Poetry	4 SH
LNF U651	The Splendid Century	4 SH
LNF U652	Age of Enlightenment	4 SH
LNF U653	Romantic Heritage	4 SH
LNF U670	Topics in French	4 SH

GPA REQUIREMENT

2.000 GPA required in the minor

Minor in Spanish

REQUIRED COURSES

Complete the following three courses:

LNS U150	Spanish Culture	4 SH
or LNS U160	Latin American Culture	4 SH
LNS U301	Spanish Conversation and Composition 1	4 SH
LNS U302	Spanish Conversation and Composition 2	4 SH

MASTERPIECES SERIES

Complete one of the following courses:

LNS U550	Masterpieces of Spanish Literature: Twelfth–Seventeenth Century	4 SH
or LNS U551	Masterpieces of Spanish Literature: Eighteenth–Twentieth Century	4 SH

ADVANCED ELECTIVES

Complete two courses from the following list. One of the two courses can be the remaining half of the Masterpieces Series:

CIN U265	Spanish Civil War on Film	4 SH
LNS U170	Caribbean Literature and Culture	4 SH
LNS U240	Latin American Film	4 SH
LNS U250	Cervantes and His Times	4 SH
LNS U501	Advanced Spanish	4 SH
LNS U550	Masterpieces of Spanish Literature: Twelfth–Seventeenth Century	4 SH
or LNS U551	Masterpieces of Spanish Literature: Eighteenth–Twentieth Century	4 SH
LNS U650	Latin American Literature	4 SH
LNS U651	Spanish Golden Age	4 SH
LNS U670	Spanish Seminar	4 SH

GPA REQUIREMENT

2.000 GPA required in the minor

MULTIMEDIA STUDIES

www.mmstudies.neu.edu

ANTHONY P. DE RITIS, PHD
Associate Professor and Chair

PROFESSORS
Dennis H. Miller, DMA, *Music*
T. Neal Rantoul, MFA, *Visual Arts*

ASSOCIATE PROFESSOR
Edwin C. Andrews, MFA, *Visual Arts*

ASSOCIATE ACADEMIC SPECIALIST
Ann McDonald, MFA, *Visual Arts*

CLINICAL LECTURER AND TECHNICAL DIRECTOR
Cynthia Baron, MBA, *Visual Arts*

LECTURER
Jay Laird, BA

Multimedia is the delivery of rich content through digital media. Digital media broaden our exposure to new ideas and creative expressions. The media afford artists, composers, and designers new opportunities to experiment and collaborate with a wide variety of partners, such as medical researchers, mathematicians, and historians. Multimedia has made specialized computer literacy and broad-based knowledge necessities for the creative professional.

The multimedia studies major unites the worlds of art, music composition, design, and technology. It offers students in the Departments of Visual Arts and Music the opportunity to understand and experience the disparate disciplines that contribute to multimedia creation. It focuses equally on the issues that govern digital art and music and the creation of sound and image. The major exposes students to the historical significance of changing technology and media, while preparing students to integrate their creative work with the skills they will need in the rapidly growing field of multimedia production.

Multimedia development requires intensive team interaction and a broad knowledge base. It is too complex for one individual, no matter how creative, to master. Members of a team are better able to provide expertise in their unique disciplines when they are fully aware of their team members' contributions. In addition, this collaborative approach best allows all team members to understand the context in which their contributions are used. Students in the multimedia studies major have many opportunities to collaborate with their peers and work with students in all four multimedia concentrations.

Multimedia production requires expert knowledge in at least one discipline, which is why students can't major in multimedia alone. To be eligible to apply to the multimedia studies program, students must:

1. complete at least one year of course work in the Departments of Music or Visual Arts.
2. be a major in good standing in one of the four creative specialties: music technology, animation, graphic design, or photography.
3. meet the separate requirements for admission to the program itself. These include submission of a portfolio of work, letters of recommendation, and a minimum GPA (cumulative grade-point average).

Students in the program begin their work in either the Department of Music or the Department of Visual Arts and then continue to develop their core discipline while exploring the interdisciplinary multimedia course work.

The curriculum comprises four components:

- basic principles of art and design
- essential course work in music and music technology
- extra-disciplinary courses to provide an historical, societal, and cultural framework
- cross-disciplinary courses specific to the program (such as Narrative for Multimedia)

The student's senior year in the program is devoted to integrating these four components. Students working in cross-disciplinary teams draw on their accumulated knowledge to develop and deliver original multimedia content. See pages 411–412 for course descriptions.

BS in Multimedia Studies

COLLEGE OF ARTS AND SCIENCES BS CORE REQUIREMENTS FOR ARTS/HUMANITIES MAJORS

See page 50 for requirement list.

CONCENTRATIONS

Complete the concentration in animation, the concentration in graphic design, the concentration in music technology, or the concentration in photography.

Concentration in Animation

ANIMATION COURSES

Complete the following seven courses:

ART U101	History of Art before 1400	4 SH
ART U103	History of Art since 1400	4 SH
ART U124	Basic Drawing	4 SH
ART U130	Visual Studies Foundation 1	4 SH
ART U131	Visual Studies Foundation 2	4 SH
ART U180	Video Basics	4 SH
ART U290	Introduction to Digital Tools	4 SH

ANIMATION STUDIO

Complete the following five courses:

ART U175	Animation Basics	4 SH
ART U275	Animation Studio 1	4 SH
ART U375	Animation Studio 2	4 SH
ART U475	Animation Studio 3	4 SH
ART U575	Animation Studio 4	4 SH

MULTIMEDIA STUDIES

Complete the following four courses:

MMS U300	Narrative for Multimedia	4 SH
MMS U305	Programming for Multimedia	4 SH
MMS U400	Hypermedia	4 SH
MUS U220	Music and Technology 1	4 SH

CAPSTONE PROJECT

Complete the following two courses:

MMS U700	Multimedia Capstone 1	4 SH
MMS U701	Multimedia Capstone 2	4 SH

MULTIMEDIA ELECTIVE COURSES

Complete three courses from the following list:

ART U160	Photography 1	4 SH
MMS U450	Special Topics in Hypermedia	4 SH
MMS U500	Multimedia Studies History	4 SH
MMS U600	Business, Law, and Multimedia	4 SH
MUS U221	Music and Technology 2	4 SH

Concentration in Graphic Design

INTRODUCTORY COURSES

Complete the following five courses:

ART U130	Visual Studies Foundation 1	4 SH
ART U131	Visual Studies Foundation 2	4 SH
ART U160	Photography 1	4 SH
ART U180	Video Basics	4 SH
ART U290	Introduction to Digital Tools	4 SH

INTERMEDIATE AND ADVANCED COURSES

Complete the following seven courses:

ART U332	Design Principles and Drawing	4 SH
ART U333	Design 1 and Drawing	4 SH
ART U334	Typography 1	4 SH
ART U344	Typography 2	4 SH
ART U350	Color in Multiple Media	4 SH
ART U443	Graphic Design 2	4 SH
ART U635	Time-Based Design	4 SH

ART HISTORY

Complete the following four courses:

ART U101	History of Art before 1400	4 SH
ART U103	History of Art since 1400	4 SH
ART U240	History of Graphic Design	4 SH
or MMS U500	Multimedia Studies History	4 SH
ART U313	Twentieth-Century Art	4 SH

MULTIMEDIA STUDIES

Complete the following four courses:

MMS U300	Narrative for Multimedia	4 SH
MMS U305	Programming for Multimedia	4 SH
MMS U400	Hypermedia	4 SH
MUS U220	Music and Technology 1	4 SH

CAPSTONE PROJECT

Complete the following two courses:

MMS U700	Multimedia Capstone 1	4 SH
MMS U701	Multimedia Capstone 2	4 SH

MULTIMEDIA ELECTIVE COURSES

Complete three courses from the following list:

ART U175	Animation Basics	4 SH
MMS U450	Special Topics in Hypermedia	4 SH
MMS U500	Multimedia Studies History	4 SH
MMS U600	Business, Law, and Multimedia	4 SH
MUS U221	Music and Technology 2	4 SH

Concentration in Music Technology

MUSIC COURSES

Complete the following nine courses:

MUS U220	Music and Technology 1	4 SH
MUS U221	Music and Technology 2	4 SH
MUS U250	Instrumentation and Notation	4 SH
MUS U308	Principles of Music Literature	4 SH
MUS U315	History of Electronic Music	4 SH
MUS U320	Sound Design	4 SH
MUS U421	Digital Audio Processing	4 SH
MUS U520	Interactive Real-Time Performance	4 SH
MUS U611	Music Technology Capstone/Senior Recital	4 SH

MUSIC THEORY AND HISTORICAL TRADITIONS

Complete the following six courses. Music theory courses and musicianship courses should be taken concurrently, as indicated:

MUS U201	Music Theory 1	4 SH
with MUS U241	Musicianship 1	1 SH

MUS U202	Music Theory 2	4 SH
with MUS U242	Musicianship 2	1 SH
MUS U303	Music Theory 3	4 SH
with MUS U343	Musicianship 3	1 SH
MUS U304	Music Theory 4	4 SH
with MUS U344	Musicianship 4	1 SH
MUS U312	Historical Traditions 2: Classical	4 SH
MUS U313	Historical Traditions 3: World	4 SH

MUSIC COMPOSITION LESSONS

Complete 8 semester hours of music composition lessons (course is repeatable):

MUS U903	Composition Lessons	1 SH

MULTIMEDIA STUDIES

Complete the following five courses:

ART U130	Visual Studies Foundation 1	4 SH
ART U290	Introduction to Digital Tools	4 SH
MMS U300	Narrative for Multimedia	4 SH
MMS U305	Programming for Multimedia	4 SH
MMS U400	Hypermedia	4 SH

MUSIC ENSEMBLE

Complete two music ensembles:

MUS U904	Chorus	1 SH
MUS U905	Band	1 SH
MUS U906	Orchestra	1 SH
MUS U911	Jazz Ensemble	1 SH
MUS U912	Rock Ensemble	1 SH
MUS U913	Blues/Rock Ensemble	1 SH
MUS U914	Create Your Own Music	1 SH
MUS U915	Chamber Ensembles	1 SH
MUS U916	Electronic Music Ensemble	1 SH

CAPSTONE PROJECT

Complete the following two courses:

MMS U700	Multimedia Capstone 1	4 SH
MMS U701	Multimedia Capstone 2	4 SH

MULTIMEDIA ELECTIVE COURSES

Complete two courses from the following list:

ART U160	Photography 1	4 SH
ART U175	Animation Basics	4 SH
MMS U450	Special Topics in Hypermedia	4 SH
MMS U500	Multimedia Studies History	4 SH
MMS U600	Business, Law, and Multimedia	4 SH

MUSIC TECHNOLOGY ELECTIVE

Complete one course from the following list:

MUS U233	Music Production for Radio and Web	4 SH
MUS U336	Computer Applications in Music Business	4 SH
MUS U699	Advanced Television Production	4 SH
MMS U305	Programming for Multimedia	4 SH
MMS U400	Hypermedia	4 SH
ART U130	Visual Studies Foundation 1	4 SH
ART U180	Video Basics	4 SH
ART U290	Introduction to Digital Tools	4 SH

Concentration in Photography

ART COURSES

Complete the following eight courses:

ART U101	History of Art before 1400	4 SH
ART U103	History of Art since 1400	4 SH
ART U124	Basic Drawing	4 SH
ART U130	Visual Studies Foundation 1	4 SH
ART U131	Visual Studies Foundation 2	4 SH
ART U180	Video Basics	4 SH
ART U290	Introduction to Digital Tools	4 SH
ART U313	Twentieth-Century Art	4 SH

PHOTOGRAPHY COURSES

Complete the following seven courses:

ART U160	Photography 1	4 SH
ART U330	History of Photography	4 SH
ART U360	Photography 2	4 SH
ART U385	Still Digital Imaging	4 SH
ART U601	Alternative Analog and Digital Processes	4 SH
ART U602	Fine Art Digital Imaging	4 SH
ART U710	Senior Project in Photography 1	6 SH

MULTIMEDIA STUDIES

Complete the following four courses:

MMS U300	Narrative for Multimedia	4 SH
MMS U305	Programming for Multimedia	4 SH
MMS U400	Hypermedia	4 SH
MUS U220	Music and Technology 1	4 SH

CAPSTONE PROJECT

Complete the following two courses:

MMS U700	Multimedia Capstone 1	4 SH
MMS U701	Multimedia Capstone 2	4 SH

MULTIMEDIA ELECTIVE COURSES

Complete three courses from the following list:

ART U175	Animation Basics	4 SH
MMS U450	Special Topics in Hypermedia	4 SH
MMS U500	Multimedia Studies History	4 SH
MMS U600	Business, Law, and Multimedia	4 SH
MUS U221	Music and Technology 2	4 SH

EXPERIENTIAL EDUCATION REQUIREMENT

Complete one course in experiential education. Please see department for approved courses.

MULTIMEDIA STUDIES MAJOR CREDIT REQUIREMENT

Complete the following semester hours in the major:
84 for multimedia and animation
100 for multimedia and graphic design
114 for multimedia and music technology
98 for multimedia and photography

GENERAL ELECTIVES

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION

If elected

UNIVERSITY-WIDE REQUIREMENTS

128 total semester hours required
Transition students are required to complete 132 total semester hours
Minimum 2.000 GPA required

BS in Computer Science and Multimedia Studies

See page 216.

MUSIC

www.music.neu.edu

ANTHONY P. DE RITIS, PHD
Associate Professor and Chair

MATTHEWS DISTINGUISHED UNIVERSITY PROFESSOR
Judith Tick, PhD

PROFESSORS
Joshua R. Jacobson, DMA
Dennis H. Miller, DMA
Bruce Ronkin, DMA

ASSOCIATE PROFESSORS
Susan Asai, PhD
Leonard L. Brown, PhD
Leon C. Janikian, MM

ASSISTANT PROFESSORS
Allen G. Feinstein, MM
Ava Lawrence, MA
Hilary Poriss, PhD
Emmett G. Price III, PhD
Ronald Bruce Smith, PhD
Richard Strasser, DMA

VISITING ARTIST
Virginia Eskin, BA

ASSISTANT ACADEMIC SPECIALISTS
Michael Frengel, PhD
David A. Herlihy, JD

LECTURERS
James S. Anderson, BM
Paul Beaudoin, PhD
Susan deGhize, PhD
Douglas F. Durant, PhD

PROFESSOR EMERITUS
David D. Sonnenschein, DMA

The music department approaches the study of music from a global, multicultural, and multifaceted perspective. The department offers three concentrations in the context of a broad liberal arts program.

The music industry concentration is the first such undergraduate program in Boston. It is designed for students with an interest in fields such as artist management, the music products industry, the record industry, arts administration, contracting and legal issues, the recording process, and studio techniques. Developed in collaboration with Northeastern's College of Business Administration, the music industry concentration leads to a Bachelor of Science degree.

The music history and analysis concentration includes courses in Western classical music, American music, world music, music theory, and ear training. Students may combine this concentration with the minor in music performance, which entails an audition, private lessons, ensemble performance, and two recitals. They may also combine this concentration with a minor in music industry, ethnomusicology, or music theatre. The music history and analysis concentration leads to a Bachelor of Arts degree.

The music technology concentration teaches students to compose music using the newest electronic music technology, both hardware and software. Students learn techniques such as MIDI sequencing, digital and analog recording, sound design, audio for video, and the latest methods for delivering music over the Internet. Students also study composition for both acoustic and electronic instruments. The concentration includes a thorough background in the fundamentals of music, including music theory and history, and leads to a Bachelor of Science degree.

Through an exchange program, students may attend classes at the New England Conservatory of Music. Students also share an array of high-tech and multimedia equipment.

While some music courses are designed for music majors, the department also offers elective survey courses. Several of these courses fulfill the College of Arts and Sciences core curriculum requirement.

An extensive concert series offers a variety of performances by students, faculty, and guest artists. Students also have the opportunity to participate in active choral groups, bands, chamber ensembles, and the University orchestra. See pages 417–424 for course descriptions.

BA in Music with Concentration in Music History and Analysis

COLLEGE OF ARTS AND SCIENCES BA CORE REQUIREMENTS

See page 48 for requirement list.

MUSIC REQUIREMENTS FOR MUSIC HISTORY AND ANALYSIS CONCENTRATION

Music Theory and Musicianship

Complete the following eight courses. Music theory courses and musicianship courses should be taken concurrently, as indicated:

MUS U201	Music Theory 1	4 SH
with MUS U241	Musicianship 1	1 SH
MUS U202	Music Theory 2	4 SH
with MUS U242	Musicianship 2	1 SH