

MTH U550	Real Analysis	4 SH	SOC U485	Environment, Technology, and Society	4 SH
MTH U555	Complex Variables	4 SH	SOC U525	American Demographics	4 SH
MTH U560	Geometry	4 SH	SOC U528	Computers and Society	4 SH
MTH U565	Topology	4 SH	THE U315	Theatre/Modernism	4 SH
MTH U571	Advanced Linear Algebra	4 SH			
MTH U575	Group Theory	4 SH			
MTH U576	Rings and Fields	4 SH			
MTH U581	Statistics and Stochastic Processes	4 SH			
MTH U585	Introduction to Actuarial Math	4 SH			
MUS U311	Historical Traditions 1: America	4 SH			
PHL U265	Latin American Religions	4 SH			
PHL U325	Ancient Philosophy	4 SH			
PHL U330	Modern Philosophy	4 SH			
PHL U340	Philosophy of Human Nature	4 SH			
PHL U390	Cults and Sects	4 SH			
PHL U435	Moral Philosophy	4 SH			
PHL U440	Aesthetics	4 SH			
PHL U445	Philosophy of Religion	4 SH			
PHL U460	Philosophy and Literature	4 SH			
PHL U465	Advanced Medical Ethics	4 SH			
PHL U500	Theory of Knowledge	4 SH			
PHL U505	Metaphysics	4 SH			
PHL U510	Philosophy of Science	4 SH			
PHL U515	Advanced Logic	4 SH			
PHL U520	Philosophy of Logic	4 SH			
PHL U525	Philosophy of Social Science	4 SH			
PHL U530	Philosophy of Psychology	4 SH			
PHL U535	Philosophy of Mind	4 SH			
PHL U540	Philosophy of Language	4 SH			
PHL U901	Topics in Philosophy Seminar	4 SH			
PHL U902	Great Philosophers Seminar	4 SH			
PHL U903	Seminar in Religion	4 SH			
PHL U904	Major Figures in Religious Studies	4 SH			
POL U307	Public Policy and Administration	4 SH			
POL U370	Religion and Politics	4 SH			
POL U390	Science, Technology, and Public Policy	4 SH			
POL U405	International Political Economy	4 SH			
POL U415	Ethnic Conflict in Comparative Politics	4 SH			
POL U425	U.S. Foreign Policy	4 SH			
POL U435	Politics in Western Europe	4 SH			
POL U445	Politics in Central and Eastern Europe	4 SH			
POL U465	Government and Politics in the Middle East	4 SH			
POL U470	Arab-Israeli Conflict	4 SH			
POL U480	Government and Politics in Japan	4 SH			
POL U487	Politics of Developing Nations	4 SH			
SOA U500	Latin American Society and Development	4 SH			
SOA U505	Native North Americans	4 SH			
SOA U510	Anthropology of Africa	4 SH			
SOC U402	Feminist Perspectives on Society	4 SH			
SOC U406	Class, Crime, and the Legal System	4 SH			
SOC U440	Sociology of Human Service Organizations	4 SH			
SOC U470	Social Conflict and Community Service	4 SH			

## AFRICAN-AMERICAN STUDIES

[www.afrostudies.neu.edu](http://www.afrostudies.neu.edu)

KWAMINA PANFORD, PhD  
*Associate Professor and Chair*

### COLLEGE OF ARTS AND SCIENCES DISTINGUISHED PROFESSOR

Patrick Manning, PhD

### PROFESSOR

Ronald W. Bailey, PhD

### ASSOCIATE PROFESSORS

Leonard L. Brown, PhD

Robin M. Chandler, PhD

Jordan Gebre-Medhin, PhD

Robert L. Hall, PhD

William Lowe, MA

### ASSISTANT PROFESSOR

Emmett G. Price III, PhD

### ASSOCIATED FACULTY

Oscar T. Brookins, PhD, *Economics*

Edward A. Bullins, MFA, *Center for the Arts*

Lester P. Lee Jr., MA, *Cooperative Education*

William F. S. Miles, PhD, *Political Science*

Peter C. Murrell, PhD, *Education*

The diverse experiences of black people—in the United States, Africa, the Caribbean, South America, and other parts of the world—are the focus of the field of African-American studies. The curriculum is interdisciplinary in approach and includes historical, social and behavioral, and cultural studies. International studies and contemporary public policy issues are also integral parts of the program. In class, in co-op, and in internships, students apply theoretical knowledge to real-world problems and concerns. Study-abroad programs exist in Ghana, Egypt, South Africa, the Caribbean, and Central and South America.

Students with training in African-American studies have the knowledge to meet the challenges posed by diverse racial, cultural, and ethnic groups in the United States and abroad. Many graduates attend professional schools or teach at the secondary or the college level. Others work in museums, libraries, or research centers; in business; or in public service, social service, or law-enforcement agencies. See pages 249–256 for course descriptions.

**BA in African-American Studies****COLLEGE OF ARTS AND SCIENCES BA CORE REQUIREMENTS**

See page 46 for requirement list.

**AFRICAN-AMERICAN STUDIES MAJOR REQUIREMENTS****Introductory Courses**

Complete the following three courses:

AFR U101	African-American Studies	4 SH
AFR U109	Foundations of Black Culture 1	4 SH
AFR U185	Gender in the African Diaspora	4 SH

**Literature**

Complete the following course:

AFR U663	Early African-American Literature	4 SH
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**Research and Seminar**

Complete the following two courses:

AFR U310	Applied Research in the African Diaspora	4 SH
AFR U700	Advanced Seminar	4 SH

**Electives**

Complete six African-American Studies courses at the intermediate and advanced level from the following list:  
AFR U300 to AFR U699

**EXPERIENTIAL EDUCATION REQUIREMENT**

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

**AFRICAN-AMERICAN STUDIES MAJOR CREDIT REQUIREMENT**

Complete 48 semester hours for the major.

**UPPER-DIVISION ELECTIVES**

Complete three general electives at 300 level or above. None of these courses may be in physical education or dance.

**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 African-American Studies****COLLEGE OF ARTS AND SCIENCES BS CORE REQUIREMENTS FOR SOCIAL SCIENCE MAJORS**

See page 49 for requirement list.

**AFRICAN-AMERICAN STUDIES MAJOR REQUIREMENTS****Introductory Courses**

Complete the following three courses:

AFR U101	African-American Studies	4 SH
AFR U109	Foundations of Black Culture 1	4 SH
AFR U185	Gender in the African Diaspora	4 SH

**Literature**

Complete the following course:

AFR U663	Early African-American Literature	4 SH
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**Research and Seminar**

Complete the following two courses:

AFR U310	Applied Research in the African Diaspora	4 SH
AFR U700	Advanced Seminar	4 SH

**Electives**

Complete six African-American Studies courses at the intermediate and advanced level from the following list:  
AFR U300 to AFR U699

**EXPERIENTIAL EDUCATION REQUIREMENT**

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

**AFRICAN-AMERICAN STUDIES MAJOR CREDIT REQUIREMENT**

Complete 48 semester hours for the major.

**UPPER-DIVISION ELECTIVES**

Complete three general electives at 300 level or above. None of these courses may be in physical education or dance.

**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

**Minor in African-American Studies****REQUIRED COURSES**

Complete the following four courses:

AFR U101	African-American Studies	4 SH
AFR U109	Foundations of Black Culture 1	4 SH
AFR U185	Gender in the African Diaspora	4 SH
AFR U310	Applied Research in the African Diaspora	4 SH
or AFR U700	Advanced Seminar	4 SH

**ELECTIVE COURSE**

Complete one additional course in consultation with your adviser.

**GPA REQUIREMENT**

2.000 GPA required in the minor

**AMERICAN SIGN LANGUAGE–ENGLISH INTERPRETING****www.asl.neu.edu**

DENNIS R. COKELY, PHD  
*Associate Professor and Director*

**LECTURERS**

Alma L. Bournazian, MS  
 Cathy Cogen, MEd  
 James Lipsky, MA  
 George Phelgrim, MA

American Sign Language (ASL) is a language used by large numbers of people in the United States and Canada. By mastering ASL, students gain both access to the culture of Deaf America and insights into features of spoken language that are often taken for granted. Learning a modally different language gives students a new sense of the power of language and an appreciation of how it shapes their world. In this way, the mastery of ASL sharpens critical-thinking skills.

The program provides a firm foundation in language, linguistics, culture, and interpreting, plus a broad-based liberal arts education. American Sign Language courses are integral to degrees in human services with a specialization in Deaf studies and in linguistics with a focus on ASL.

Opportunities for ASL–English interpreters continue to increase, due to federal and state legislation. Graduates work as interpreters in such areas as higher education, advanced technology, and theatre.

The ASL Interpreter Education Project seeks to enhance the skills of interpreters currently working in the field and to increase the supply of competent interpreters in New England. See pages 264–266 for course descriptions.

**BS in American Sign Language****COLLEGE OF ARTS AND SCIENCES BS CORE REQUIREMENTS FOR ARTS/HUMANITIES MAJORS**

See page 48 for requirement list.

**AMERICAN SIGN LANGUAGE MAJOR REQUIREMENTS***American Sign Language*

Complete the following four courses:

ASL U101	Elementary ASL 1	4 SH
ASL U102	Elementary ASL 2	4 SH
ASL U301	Intermediate ASL 1	4 SH
ASL U302	Intermediate ASL 2	4 SH

*Social and Cultural World*

Complete the following two courses:

ASL U150	Deaf People in Society	4 SH
ASL U350	Deaf History and Culture	4 SH

*Linguistics*

Complete the following three courses:

ASL U460	ASL Linguistics	4 SH
ASL U560	ASL-English Contrastive Analysis	4 SH
LIN U150	Introduction to Language and Linguistics	4 SH

*Interpreting*

Complete the following five courses:

ASL U510	Interpreting Inquiry Texts	4 SH
ASL U515	Interpreting Narrative Texts	4 SH
ASL U550	The Interpreting Profession	2 SH
ASL U610	Interpreting Expository Texts	4 SH
ASL U615	Interpreting Persuasive Texts	4 SH

*Interpreting Practicum*

Complete the following practicum:

ASL U950	Interpreting Practicum	4 SH
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*Ethics*

Complete the following two courses:

ASL U650	Ethical Decision Making	4 SH
ASL U651	Ethical Fieldwork	2 SH

*Research Capstone*

Complete the following capstone course:

ASL U960	Interpreting Research Practicum	4 SH
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**EXPERIENTIAL EDUCATION REQUIREMENT**

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

**GPA REQUIREMENT**

Minimum 2.750 GPA required in all ASL courses  
 Minimum 2.500 overall GPA required

**AMERICAN SIGN LANGUAGE CREDIT REQUIREMENT**

Complete 68 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 American Sign Language and Human Services****COLLEGE OF ARTS AND SCIENCES BS CORE REQUIREMENTS FOR ARTS/HUMANITIES MAJORS**

See page 48 for requirement list.

**AMERICAN SIGN LANGUAGE AND HUMAN SERVICES DUAL-MAJOR REQUIREMENTS**

**American Sign Language**

Complete the following four courses:

ASL U101	Elementary ASL 1	4 SH
ASL U102	Elementary ASL 2	4 SH
ASL U301	Intermediate ASL 1	4 SH
ASL U302	Intermediate ASL 2	4 SH

**Social and Cultural World**

Complete the following two courses:

ASL U150	Deaf People in Society	4 SH
ASL U350	Deaf History and Culture	4 SH

**Linguistics**

Complete the following three courses:

ASL U460	ASL Linguistics	4 SH
ASL U560	ASL-English Contrastive Analysis	4 SH
LIN U150	Introduction to Language and Linguistics	4 SH

**Interpreting**

Complete the following course:

ASL U510	Interpreting Inquiry Texts	4 SH
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**Human Services**

Complete the following eight courses:

HS U101	Human Services Professions	4 SH
HS U300	Counseling in Human Services	4 SH
HS U700	Senior Seminar in Human Services	4 SH
PSY U101	Foundations of Psychology	4 SH
SOC U101	Introduction to Sociology	4 SH
SOC U324	Human Services Research and Evaluation	4 SH
SOC U401	Social Policy and Intervention	4 SH
SOC U440	Sociology of Human Service Organizations	4 SH

**Integrative Course Work**

Complete the following two courses:

ASL U960	Interpreting Research Practicum	4 SH
HS U940	Human Services Internship	6 SH

**EXPERIENTIAL EDUCATION REQUIREMENT**

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

**AMERICAN SIGN LANGUAGE AND HUMAN SERVICES MAJOR GPA REQUIREMENT**

Minimum 2.750 GPA required in all ASL courses

Minimum 2.500 overall GPA required

**AMERICAN SIGN LANGUAGE AND HUMAN SERVICES MAJOR CREDIT REQUIREMENT**

Complete 82 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 American Sign Language and Psychology****COLLEGE OF ARTS AND SCIENCES BS CORE REQUIREMENTS FOR ARTS/HUMANITIES MAJORS**

See page 48 for requirement list.

**AMERICAN SIGN LANGUAGE AND PSYCHOLOGY DUAL-MAJOR REQUIREMENTS****American Sign Language**

Complete the following four courses:

ASL U101	Elementary ASL 1	4 SH
ASL U102	Elementary ASL 2	4 SH
ASL U301	Intermediate ASL 1	4 SH
ASL U302	Intermediate ASL 2	4 SH

**Social and Cultural World**

Complete the following two courses:

ASL U150	Deaf People in Society	4 SH
ASL U350	Deaf History and Culture	4 SH

**Linguistics**

Complete the following three courses:

ASL U460	ASL Linguistics	4 SH
ASL U560	ASL-English Contrastive Analysis	4 SH
LIN U150	Introduction to Language and Linguistics	4 SH

**Interpreting**

Complete the following course:

ASL U510	Interpreting Inquiry Texts	4 SH
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**Psychology**

Complete the following four courses:

PSY U101	Foundations of Psychology	4 SH
PSY U320	Statistics in Psychological Research	4 SH
PSY U464	Psychology of Language	4 SH
or PSY U466	Cognition	4 SH
PSY U524	Language and Cognitive Development	4 SH

**Psychology Lab or Directed Study**

Complete one additional psychology lab or one psychology directed study:

**LAB**

PSY U536	Developing Education and Intervention Programs for Eating Disorders	4 SH
PSY U600	Research Design in Psychology	4 SH
PSY U602	Experiments in Learning and Motivation	4 SH
PSY U604	Laboratory in Learning and Motivation	4 SH
PSY U606	Laboratory in Psychobiology	4 SH
PSY U608	Laboratory in Animal Behavior Research	4 SH
PSY U610	Laboratory in Psycholinguistics	4 SH
PSY U612	Laboratory in Cognition	4 SH
PSY U614	Laboratory in Social Psychology	4 SH
PSY U616	Laboratory in Personality	4 SH
PSY U618	Laboratory in Community Psychology	4 SH
PSY U620	Laboratory in Industrial/Organizational Psychology	4 SH
PSY U622	Laboratory in Sensation and Perception	4 SH

**DIRECTED STUDY**

PSY U924	Directed Study	4 SH
PSY U951	Experiential Education Directed Study	4 SH

**Personal/Social Bases of Behavior (Area A)**

Complete two courses from the following list:

PSY U400	Personality	4 SH
PSY U402	Social Psychology	4 SH
PSY U404	Developmental Psychology	4 SH
PSY U406	Abnormal Psychology	4 SH

**Biological/Cognitive Bases of Behavior (Area B)**

Complete one course from the following list:

PSY U450	Learning and Motivation	4 SH
PSY U452	Introduction to Sensation and Perception	4 SH
PSY U458	Psychobiology	4 SH
PSY U464	Psychology of Language	4 SH
or PSY U466	Cognition	4 SH

**Integrative Course Work**

Complete the following two courses:

ASL U960	Interpreting Research Practicum	4 SH
PSY U658	Seminar in Psycholinguistics	4 SH

**EXPERIENTIAL EDUCATION REQUIREMENT**

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

**AMERICAN SIGN LANGUAGE AND PSYCHOLOGY MAJOR GPA REQUIREMENT**

Minimum 2.750 GPA required in all ASL courses  
Minimum 2.500 overall GPA required

**AMERICAN SIGN LANGUAGE AND PSYCHOLOGY MAJOR CREDIT REQUIREMENT**

Complete 80 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 American Sign Language and Theatre****COLLEGE OF ARTS AND SCIENCES BS CORE REQUIREMENTS FOR ARTS/HUMANITIES MAJORS**

See page 48 for requirement list.

**AMERICAN SIGN LANGUAGE AND THEATRE DUAL-MAJOR REQUIREMENTS****American Sign Language**

Complete the following four courses:

ASL U101	Elementary ASL 1	4 SH
ASL U102	Elementary ASL 2	4 SH
ASL U301	Intermediate ASL 1	4 SH
ASL U302	Intermediate ASL 2	4 SH

**Social and Cultural World**

Complete the following two courses:

ASL U150	Deaf People in Society	4 SH
ASL U350	Deaf History and Culture	4 SH

**Linguistics**

Complete the following three courses:

ASL U460	ASL Linguistics	4 SH
ASL U560	ASL-English Contrastive Analysis	4 SH
LIN U150	Introduction to Language and Linguistics	4 SH

**Interpreting**

Complete the following course:

ASL U510	Interpreting Inquiry Texts	4 SH
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**Theatre**

Complete the following eleven courses:

THE U101	Theatre Arts	4 SH
THE U120	Acting 1	4 SH
THE U131	Technical Theatre 1	4 SH
THE U250	Voice and Movement for Theatre	4 SH
THE U270	Theatrical Design	4 SH
THE U300	Theatre History	4 SH
THE U325	Script Analysis for the Stage	4 SH
THE U500	Dramatic Theory/Criticism	4 SH
THE U550	Concepts of Directing	4 SH
THE U701	Rehearsal and Performance	4 SH
THE U901	Theatre Practicum 1	1 SH

**Integrative Course Work**

Complete the following two courses:

ASL U960	Interpreting Research Practicum	4 SH
THE U902	Theatre Practicum 2	1 SH

**EXPERIENTIAL EDUCATION REQUIREMENT**

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

**AMERICAN SIGN LANGUAGE AND THEATRE MAJOR GPA REQUIREMENT**

Minimum 2.750 GPA required in all ASL courses  
Minimum 2.500 overall GPA required

**AMERICAN SIGN LANGUAGE AND THEATRE MAJOR CREDIT/GRADE REQUIREMENT**

Complete 86 semester hours in the major. A minimum grade of C is required in all theatre courses.

**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

## ARCHITECTURE

[www.architecture.neu.edu](http://www.architecture.neu.edu)

GEORGE THRUSH, MARCH  
*Associate Professor and Chair*

**MATTHEWS DISTINGUISHED UNIVERSITY PROFESSOR**  
Mardges Bacon, PhD

**PROFESSOR**  
Elizabeth C. Cromley, PhD

**ASSOCIATE PROFESSORS**  
Darell W. Fields, PhD  
Peter H. Wiederspahn, MArch

**ASSISTANT PROFESSORS**  
Timothy Love, MArch  
Mo Zell, MArch

Architecture is the context for civic life. In an age of increasingly rapid technological and social change, architects must find ways to forge connections between our past and our future. That involves critical thinking about many complex contemporary issues, such as the relationship of public and private life, the interaction between formal and political ideas in cities, and the role of technology in contemporary architecture and design. Because the process of designing buildings involves the synthesis of disparate elements, it can also translate into strategies for approaching a wide range of other problems not traditionally understood to be “architecture.” At Northeastern, we connect specific problem solving inherent to architectural understanding with the larger context of contemporary cities.

The curriculum teaches students to conceptualize, synthesize, and represent complex architectural and urban issues. The program focuses on core skills and critical thinking as preparation for both professional practice and advanced study. The curriculum in the design studio encompasses two major themes: first, the studio projects focus on the art of building, and second, the projects explore how buildings affect urban conditions. Buildings meet both our individual need for shelter and our shared need for cultural meaning. The art of building includes the study of building construction and technology, as well as the cultural messages created by the expression of material, structure, and form in architecture. The contemporary city is our laboratory. This urban focus requires that students integrate their own creative impulses with the future of the society of which they will be a part. By building on the practical and technical training afforded by co-op to develop core professional skills, the curriculum focuses on architecture’s fundamental aesthetic, technological, social, and political aspects.

With the effective synthesis of the art of building with urban issues, Northeastern’s program in architecture is

becoming a leader in identifying opportunities for civic representation, urban development, and neighborhood design. Northeastern’s students are in demand in area offices because of their combination of professional competence and fluency in urban architectural issues. There are opportunities for interdisciplinary cooperation in urban-oriented research and creative work in areas such as GIS mapping, urban economics and development, new forms of spatial and visual communication, and public policy.

In addition, complete the arts and sciences core curriculum and the experiential education requirement (see page 33).

## BS in Architecture

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

See page 48 for requirement list.

### ARCHITECTURE MAJOR REQUIREMENTS

#### Breadth Courses

##### CALCULUS

Complete the following course:

MTH U141 Calculus 1 4 SH

##### PHYSICS

Complete the following course:

PHY U141 General Physics 4 SH

#### Architecture Requirements

##### FOUNDATION SKILLS

Complete the following four courses:

ARC U111 History of World Architecture 1 4 SH

ARC U112 History of World Architecture 2 4 SH

ARC U256 Manual Representation 4 SH

ARC U257 Digital Representation 4 SH

##### HISTORY/THEORY

Complete the following four courses:

ARC U325 Nineteenth-Century Architecture and Urbanism 4 SH

ARC U326 Twentieth-Century Architecture and Urbanism 4 SH

ARC U329 American Houses and Housing 4 SH

ARC U330 Third-Year Seminar 4 SH

##### TECHNOLOGY

Complete the following four courses:

ARC U356 Structures 1: Statics 4 SH

ARC U357 Structures 2: Tectonics 4 SH

ARC U555 Environmental Systems 4 SH

ARC U656 Integrated Building Systems 4 SH

##### STUDIO DESIGN

Complete the following five courses:

ARC U310 Studio 1: Site, Type, Composition 6 SH

ARC U311 Studio 2: Pattern and Urban Design 6 SH

ARC U410 Studio 3: Building Beyond the City 6 SH

ARC U510 Studio 4: Housing and Aggregation 6 SH

ARC U511 Studio 5: Tectonics 6 SH

**EXPERIENTIAL EDUCATION REQUIREMENT**

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

**GPA REQUIREMENT**

Minimum 2.500 GPA required

**ARCHITECTURE MAJOR CREDIT REQUIREMENT**

Complete 86 semester hours in the major.

**GENERAL ELECTIVES**

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

**COOPERATIVE EDUCATION****UNIVERSITY-WIDE REQUIREMENTS**

128 total semester hours required

Transition students are required to complete 132 total semester hours

Minimum 2.000 GPA required

**Minor in Architectural History****REQUIRED COURSES**

Complete the following four courses:

ARC U111	History of World Architecture 1	4 SH
ARC U112	History of World Architecture 2	4 SH
ARC U325	Nineteenth-Century Architecture and Urbanism	4 SH
ARC U326	Twentieth-Century Architecture and Urbanism	4 SH

**GPA REQUIREMENT**

2.000 GPA required in the minor

**BEHAVIORAL NEUROSCIENCE**

DENISE JACKSON, PhD

*Associate Professor of Psychology and Acting Program Director*

**PROGRAM ADVISORY BOARD**

Joseph L. Ayers, PhD, *Department of Biology*

Frederick C. Davis, PhD, *Department of Biology*

Michelle L. Israel, MS, *Associate Cooperative Education Coordinator*

Jay P. McLaughlin, PhD, *Department of Psychology*

Richard H. Melloni Jr., PhD, *Department of Psychology*

Franklin Naarendorp, PhD, *Department of Psychology*

Donald M. O'Malley, PhD, *Department of Biology*

James R. Stellar, PhD, *College of Arts and Sciences Dean's Office*

The behavioral neuroscience major is an interdepartmental program for undergraduates, with a program director and advisory board made up of the neuroscience faculty of the College of Arts and Sciences. The field of neuroscience focuses on brain mechanisms and how they give rise to behavioral functions in humans and animals. Behavioral neuroscience com-

bines the disciplines of biology and psychology with a strong background in basic physical sciences and mathematics. The goal is to achieve an understanding of anatomy and physiology of nerve cells, neurochemical transmission, simple neural circuits, and fundamental biological processes such as inheritance and development, and then to see how these biological events give rise to normal and pathological behavior. The primary objective of the neuroscience major is to draw together faculty and students who are interested in this interdisciplinary topic and to provide undergraduates with an education in the field. This major serves as ideal preparation for advancement to graduate programs in the field of neuroscience or to biology or psychology programs with an emphasis in neurobiology. This major also serves as preparation for admission to medical school, although there are additional science courses that should be taken as electives. The curriculum also prepares students to find employment in clinical settings or in allied fields such as the biotech industry.

For further information, contact Dr. Denise Jackson, preferably at d.jackson@neu.edu. Phone messages may be left at 617.373.3860.

**BS in Behavioral Neuroscience****COLLEGE OF ARTS AND SCIENCES BS CORE REQUIREMENTS FOR NATURAL SCIENCE MAJORS**

See page 48 for requirement list.

**BEHAVIORAL NEUROSCIENCE MAJOR REQUIREMENTS****Survey Courses—Level 1: Introductory****PSYCHOLOGY**

Complete the following course:

PSY U101 Foundations of Psychology 4 SH

**MATHEMATICS**

Complete the following two courses:

MTH U141 Calculus 1 4 SH

or MTH U151 Calculus and Differential Equations for Biology 1 4 SH

MTH U142 Calculus 2 4 SH

or MTH U152 Calculus and Differential Equations for Biology 2 4 SH

**SCIENCE**

Complete the following four courses with corresponding labs:

BIO U101 Principles of Biology 1 4 SH

with BIO U102 Lab for BIO U101 1 SH

or BIO U111 General Biology 1 4 SH

with BIO U112 Lab for BIO U111 1 SH

BIO U103 Principles of Biology 2 4 SH

with BIO U104 Lab for BIO U103 1 SH

or BIO U113 General Biology 2 4 SH

with BIO U114 Lab for BIO U113 1 SH

CHM U211 General Chemistry 1 4 SH

with CHM U212 Lab for CHM U211 1 SH

CHM U214 General Chemistry 2 4 SH

with CHM U215 Lab for CHM U214 1 SH

**Survey Courses—Level 2: Intermediate****PSYCHOLOGY**

Complete the following two courses:

PSY U320	Statistics in Psychological Research	4 SH
PSY U458	Psychobiology	4 SH
or BIO U405	Neurobiology	4 SH

**SCIENCE**

Complete the following three courses with corresponding labs:

BIO U301	Genetics and Molecular Biology	4 SH
with BIO U302	Lab for BIO U301	1 SH
CHM U311	Organic Chemistry 1	4 SH
with CHM U312	Lab for CHM U311	1 SH
CHM U313	Organic Chemistry 2	4 SH
with CHM U314	Lab for CHM U313	1 SH

**Advanced Courses—Psychology****ADVANCED PSYCHOLOGY ELECTIVES (AREA A)**

Complete one course from the following list:

PSY U202	Biological Basis of Mental Illness	4 SH
PSY U358	Behavior Therapies	4 SH
PSY U400	Personality	4 SH
PSY U402	Social Psychology	4 SH
PSY U404	Developmental Psychology	4 SH
PSY U406	Abnormal Psychology	4 SH

**ADVANCED PSYCHOLOGY ELECTIVES (AREA B)**

Complete one course from the following list:

PSY U450	Learning and Motivation	4 SH
PSY U452	Introduction to Sensation and Perception	4 SH
PSY U464	Psychology of Language	4 SH
PSY U466	Cognition	4 SH
PSY U510	Psychopharmacology	4 SH
PSY U512	Neuropsychology	4 SH
PSY U520	Language and the Brain	4 SH

**Advanced Courses—Biology****ADVANCED BIOLOGY ELECTIVES (AREA A)**

Complete one course with corresponding lab from the following list:

BIO U319	Regulatory Cell Biology	4 SH
with BIO U320	Lab for BIO U319	1 SH
BIO U407	Molecular Cell Biology	4 SH
BIO U551	Principles of Animal Physiology	4 SH
with BIO U552	Lab for BIO U551	1 SH

**ADVANCED BIOLOGY ELECTIVES (AREA B)**

Complete one course with corresponding lab from the following list:

BIO U403	Animal Behavior	4 SH
BIO U545	Neuroethology	4 SH
with BIO U546	Lab for BIO U545	1 SH
BIO U587	Comparative Neurobiology	4 SH

**ADVANCED BIOLOGY ELECTIVES (AREA C)**

Complete one course with corresponding lab from the following list:

BIO U311	Ecology	4 SH
with BIO U312	Lab for BIO U311	1 SH

BIO U315	Invertebrate Zoology	4 SH
with BIO U316	Lab for BIO U315	1 SH
BIO U317	Vertebrate Zoology	4 SH
with BIO U318	Lab for BIO U317	1 SH
BIO U323	Biochemistry	4 SH
with BIO U324	Lab for BIO U323	1 SH
BIO U401	Comparative Vertebrate Anatomy	4 SH
with BIO U402	Lab for BIO U401	1 SH
BIO U503	Marine Invertebrate Zoology	4 SH
with BIO U504	Lab for BIO U503	1 SH
BIO U543	Embryonic Stem Cells	4 SH
BIO U547	Sociobiology	4 SH
BIO U549	Microbial Biotechnology	4 SH
BIO U553	Biology of Muscle: Molecules to Movements	4 SH
BIO U565	Mammalogy	4 SH
with BIO U566	Lab for BIO U565	1 SH
BIO U573	Medical Microbiology	4 SH
with BIO U574	Lab for BIO U573	1 SH
BIO U577	Developmental Biology	4 SH
with BIO U578	Lab for BIO U577	1 SH
BIO U581	Biological Imaging	4 SH
BIO U583	Immunology	4 SH
BIO U585	Evolution	4 SH
with BIO U586	Lab for BIO U585	1 SH

The following courses require permission prior to registration:

PTH U301	Gross Anatomy	4 SH
with PTH U302	Lab for PTH U301	1 SH
PTH U308	Neuroscience	4 SH

**Specialty Courses****SEMINAR**

Complete one seminar from the following list:

BIO G383	Topics in Biochemistry Cell and Molecular Biology	2 SH
BIO G384	Topics in Integrative Biology	2 SH
BIO U409	Current Topics in Biology	4 SH
PSY U654	Seminar in Behavioral Modification	4 SH
PSY U656	Seminar in Psychobiology	4 SH
PSY U658	Seminar in Psycholinguistics	4 SH
PSY U660	Seminar in Cognition	4 SH
PSY U666	Seminar in Clinical Psychology	4 SH
PSY U668	Seminar in Sensation and Perception	4 SH
PSY U670	Seminar in Research Psychology	4 SH

**LABORATORY COURSE**

Complete one laboratory course from the following list:

BIO U579	Biochemistry Methods Laboratory	5 SH
BIO U924	Directed Study	4 SH
BIO U970	Junior/Senior Project 1	4 SH
with BIO U971	Junior/Senior Project 2	4 SH
PSY U602	Experiments in Learning and Motivation	4 SH
PSY U604	Laboratory in Learning and Motivation	4 SH
PSY U606	Laboratory in Psychobiology	4 SH
PSY U608	Laboratory in Animal Behavior Research	4 SH
PSY U610	Laboratory in Psycholinguistics	4 SH

PSY U612	Laboratory in Cognition	4 SH
PSY U622	Laboratory in Sensation and Perception	4 SH
PSY U924	Directed Study	4 SH
PSY U970	Junior/Senior Project 1	4 SH
PSY U971	Junior/Senior Project 2	4 SH

### BEHAVIORAL NEUROSCIENCE EXPERIENTIAL EDUCATION REQUIREMENT

Complete one of the following three options:

#### Option 1: Practical and Reflective Experience

##### PRACTICAL EXPERIENCE

Complete one research co-op, research internship, research-oriented directed study, or study abroad.

##### REFLECTIVE EXPERIENCE

Complete one of the following courses:

BIO U701	Biology Capstone	4 SH
BIO U954	Experiential Education Directed Study	4 SH
PSY U650	Seminar in Clinical Case Study	4 SH
PSY U652	Seminar in Ethics in Psychology	4 SH
PSY U656	Seminar in Psychobiology	4 SH
PSY U934	Independent Study	4 SH
PSY U951	Experiential Education Directed Study	4 SH

#### Option 2: Honors Project

Complete two semesters of a biology or psychology honors project:

BIO U970	Junior/Senior Project 1	4 SH
with BIO U971	Junior/Senior Project 2	4 SH
PSY U970	Junior/Senior Project 1	4 SH
with PSY U971	Junior/Senior Project 2	4 SH

#### Option 3: Directed Study

Complete two semesters of directed study, which includes a final oral presentation or written report:

BIO U924	Directed Study	4 SH
PSY U924	Directed Study	4 SH

### BEHAVIORAL NEUROSCIENCE MAJOR CREDIT REQUIREMENT

Complete 83 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

## BIOCHEMISTRY

[www.biochemistry.neu.edu](http://www.biochemistry.neu.edu)

Biochemistry includes nearly the entire spectrum of science—from physics and chemistry to biology and medicine. The biochemistry major, sponsored jointly by the Departments of Biology and Chemistry, provides a strong foundation in mathematics and the physical sciences as well as thorough training in biochemistry, biology, and chemistry. In addition to formal classwork, opportunities are available for participation in faculty research programs on an individual basis or through the honors program. The large number of biotechnology companies and biomedical facilities in the Boston area provides a rich source of opportunities through Northeastern's program of cooperative education.

A Bachelor of Science degree in biochemistry allows students to enter the job market directly or go on to graduate, medical, veterinary, dental, law, or business school. Students may find positions in biotechnology companies, pharmaceutical companies, or government agencies, working in laboratory or clinical research, quality control, production, information systems, marketing, or technical sales. Students may also pursue graduate study in biochemistry, molecular biology, cell biology, biophysics, genetics, toxicology, biotechnology, clinical chemistry, animal science, nutrition, plant science, or other biomedical sciences.

Students who are interested in attending medical, dental, or veterinary school following graduation are urged to consult with the preprofessional advisory committee early in their careers at Northeastern.

To graduate with a major in biochemistry, a student must have a cumulative grade-point average (GPA) of 2.000 for all science and mathematics courses required for the major.

Students must maintain a minimal grade-point average of 2.000 to remain in this program. In addition, students must complete the arts and sciences core curriculum and experiential education requirement.

### BS in Biochemistry

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

See page 48 for requirement list.

#### BIOCHEMISTRY BREADTH COURSES

##### Mathematics Courses

Complete 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

**Physics Courses**

Complete the following two courses with corresponding labs:

PHY U145	Physics for Life Sciences 1	4 SH
with PHY U146	Lab for PHY U145	1 SH
or PHY U151	Physics for Engineering 1	4 SH
with PHY U152	Lab for PHY U151	1 SH
or PHY U161	Physics 1	4 SH
with PHY U162	Lab for PHY U161	1 SH
PHY U147	Physics for Life Sciences 2	4 SH
with PHY U148	Lab for PHY U147	1 SH
or PHY U155	Physics for Engineering 2	4 SH
with PHY U156	Lab for PHY U155	1 SH
or PHY U165	Physics 2	4 SH
with PHY U166	Lab for PHY U165	1 SH

**Computer Science Course**

Complete one of the following courses:

CET U201	Visual Basic Programming	4 SH
GE U111	Engineering Problem Solving and Computation	4 SH

**BIOCHEMISTRY MAJOR REQUIREMENTS****Principles of Biology**

Complete the following two courses with corresponding labs:

BIO U101	Principles of Biology 1	4 SH
with BIO U102	Lab for BIO U101	1 SH
or BIO U111	General Biology 1	4 SH
with BIO U112	Lab for BIO U111	1 SH
BIO U103	Principles of Biology 2	4 SH
with BIO U104	Lab for BIO U103	1 SH
or BIO U113	General Biology 2	4 SH
with BIO U114	Lab for BIO U113	1 SH

**Molecular Biology**

Complete the following two courses with corresponding lab:

BIO U301	Genetics and Molecular Biology	4 SH
with BIO U302	Lab for BIO U301	1 SH
BIO U407	Molecular Cell Biology	4 SH

**Chemistry Courses**

Complete the following six courses with corresponding labs:

CHM U211	General Chemistry 1	4 SH
with CHM U212	Lab for CHM U211	1 SH
CHM U214	General Chemistry 2	4 SH
with CHM U215	Lab for CHM U214	1 SH
CHM U311	Organic Chemistry 1	4 SH
with CHM U312	Lab for CHM U311	1 SH
CHM U313	Organic Chemistry 2	4 SH
with CHM U314	Lab for CHM U313	1 SH
CHM U321	Analytical Chemistry	4 SH
with CHM U322	Lab for CHM U321	1 SH
CHM U401	Physical Chemistry 1	4 SH
with CHM U402	Lab for CHM U401	1 SH

**Biochemistry Courses**

Complete the following course with corresponding lab:

BIO U323	Biochemistry	4 SH
with BIO U324	Lab for BIO U323	1 SH

**Experiential Education Introduction**

Complete the following course:

BIO U106	Introduction to Experiential Education	1 SH
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**Experiential Education**

An activity related to biochemistry and approved by the experiential education adviser must be completed before the capstone. Among the possibilities are co-op experience, junior/senior honors thesis, research project in a faculty lab, study abroad with submission of a paper, 120 hours of supervised volunteer work in a biochemistry-related area, completion of the following course:

CHM U750	Senior Research	4 SH
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or other approved experiences.

**Biology and Chemistry Advanced Electives**

Complete four advanced courses for a total of at least 17 semester hours from biology and chemistry with a minimum of one course from each department. At least one course must be an approved lab course from the "Approved Labs" list below:

**BIOLOGY**

BIO U311 to BIO U699

**CHEMISTRY**

CHM U310 to CHM U699

**APPROVED LABS**

BIO U579	Biochemistry Methods Laboratory	5 SH
CHM U331	Bioanalytical Chemistry	4 SH
with CHM U332	Lab for CHM U331	1 SH
CHM U521	Instrumental Methods of Analysis	1 SH
with CHM U522	Instrumental Methods of Analysis Lab	4 SH
CHM U531	Chemical Synthesis Characterization	1 SH
with CHM U532	Chem Synthesis Characterization Lab	4 SH

**Capstone**

Complete the following course:

BIO U701	Biology Capstone	4 SH
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**BIOCHEMISTRY MAJOR CREDIT/GPA REQUIREMENTS**

Complete 98 semester hours in the major with a cumulative GPA of 2.000.

**GENERAL ELECTIVES**

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

**COOPERATIVE EDUCATION**

If elected

**UNIVERSITY-WIDE REQUIREMENTS**

136 total semester hours required

Minimum 2.000 GPA required