

Behavioral Neuroscience and Philosophy, BS

The behavioral neuroscience and philosophy combined degree program engages students in the interdisciplinary study across the biology, psychology, and philosophy departments. The major provides rigorous training in both disciplines with a specific focus on understanding seminal questions concerning human nature and the mind. Courses in the basic sciences will lay a strong foundation in biology, chemistry, and data analytics that are relevant to neuroscience. In behavioral neuroscience core courses, students will examine the structure and function of the human nervous system in order to explore brain mechanisms that give rise to behavioral functions, including cognitive processes, as well as pathological states. In philosophy courses, successful students will develop core analytics skills, including ethical reasoning; learn to recognize and question deep theoretical assumptions at the heart of scientific theories and practice; and explore the social and ethical dimensions of neuroscience and scientific practice more broadly. The fields of behavioral neuroscience and philosophy are further bridged with course work that is designed to enable students to apply neuroscientific concepts to philosophical, moral, and ethical questions.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

Universitywide Requirements

All undergraduate students are required to complete the Universitywide Requirements (<http://catalog.northeastern.edu/undergraduate/university-academics/university-wide-requirements/>).

NUPATH Requirements

All undergraduate students are required to complete the NUPATH Requirements (<http://catalog.northeastern.edu/undergraduate/university-academics/nupath/>).

Behavioral Neuroscience Requirements

Code	Title	Hours
Behavioral Neuroscience Overview		
BNSC 1000	Behavioral Neuroscience at Northeastern ¹	1
EESC 2000	Professional Development for Co-op ²	1
COS Foundations		
PSYC 1101	Foundations of Psychology	4
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
BIOL 2299	Inquiries in Biological Sciences	4
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
CHEM 1161 and CHEM 1162	General Chemistry for Science Majors and Lab for CHEM 1161	5
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
Mathematics Foundation		
MATH 1251 or MATH 1341	Calculus and Differential Equations for Biology 1 Calculus 1 for Science and Engineering	4
Statistics Foundation		
Complete one of the following. Students who receive transfer credit for the Advanced Placement Statistics exam may complete the 1 SH PSYC 2315 course (requires department permission).		4-5
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	
PSYC 2320	Statistics in Psychological Research	
Behavioral Neuroscience Foundation		
PSYC 3200	Clinical Neuroanatomy	4
PSYC 3458	Biological Psychology	4
Psychology Elective		
Complete one of the following:		4
PSYC 1214	The Moral Mind: The Science Underlying Ethical Decision-Making and Virtuous Character	
PSYC 3404	Developmental Psychology	

2 Behavioral Neuroscience and Philosophy, BS

PSYC 3406	Clinical Psychology and Mental Health
PSYC 3450	Learning and Motivation
PSYC 3451	Learning Principles and Behavior Analysis
PSYC 3452	Sensation and Perception
PSYC 3464	Psychology of Language
PSYC 3466	Cognition
PSYC 4524	Cognitive Development

Behavioral Neuroscience Core Courses

Complete two of the following: 8

BIOL 3403	Animal Behavior
BIOL 3415	Current Topics in Behavioral Neuroscience
BIOL 3601	Neural Systems and Behavior
BIOL 3605	Developmental Neurobiology
BIOL 4705	Neurobiology of Cognitive Decline
BIOL 5595	Cell and Molecular Neuroscience
BIOL 5601	Multidisciplinary Approaches in Motor Control
PSYC 3506	Neuropsychology of Fear
PSYC 3508	Behavioral Endocrinology
PSYC 3510	Brain, Behavior, and Immunity
PSYC 4510	Psychopharmacology
PSYC 4512	Neuropsychology
PSYC 4514	Clinical Neuroscience
PSYC 4570	Behavioral Genetics

Upper-Division Elective

Complete one course that is not already taken as long as pre-requisites have been met: 4

- BNSC 4970 or higher
- BIOL 3403 or higher
- PSYC 3404 or higher

1

Students entering through CSSH may take Philosophy at Northeastern (PHIL 1000).

2

Students entering through CSSH may take Professional Development for Co-op (EESH 2000).

Philosophy Requirements

Code	Title	Hours
Philosophy Foundation		
PHIL 1105 or PHIL 3050	Science and Pseudoscience Information and Uncertainty	4
PHIL 1115	Introduction to Logic	4
PHIL 1145	Technology and Human Values	4
PHIL 2325 or POLS 2325	Ancient Philosophy and Political Thought Ancient Philosophy and Political Thought	4
PHIL 2330	Modern Philosophy	4
Philosophy Restricted Electives		
Complete eight credits from the following list, not taken to fulfill other requirements: 8		
PHIL 3305	Philosophy of Emotions	
PHIL 3360	Scientific Approaches to Philosophy	
PHIL 3435	Moral Philosophy	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4535	Philosophy of Mind	
PHIL 4555	Philosophy of Biology	

Additional Electives

Complete two additional PHIL courses, not taken to fulfill other requirements. 8

Integrative Requirements

Code	Title	Hours
BIOL 4709 or BIOL 5587	Neurobiology of Learning and Memory Comparative Neurobiology	4
PHIL 4535 or PHIL 4555	Philosophy of Mind Philosophy of Biology	4

Writing Courses

Code	Title	Hours
College Writing		
ENGW 1111 or ENGW 1102	First-Year Writing First-Year Writing for Multilingual Writers	4
Advanced Writing in the Disciplines		
ENGW 3307 or ENGW 3308 or ENGW 3309 or ENGW 3315	Advanced Writing in the Sciences Advanced Writing in the Social Sciences Advanced Writing in the Humanities Interdisciplinary Advanced Writing in the Disciplines	4

Required General Electives

Code	Title	Hours
Complete 16 credits of general electives.		16

Behavioral Neuroscience GPA Requirement

A minimum 2.000 GPA in all behavioral neuroscience courses is required.

Major Credit Hour Requirement

96 total semester hours required in major.

Program Requirement

130 total semester hours required

Plan of Study**Sample Plans of Study****FIVE YEARS, THREE CO-OPS**

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
BNSC 1000		1 ENGW 1111		4 Vacation		Vacation		
BIOL 1107 and BIOL 1108	5	BIOL 2299		4				
CHEM 1161 and CHEM 1162 and CHEM 1163	5	MATH 1251		4				
PSYC 1101	4	PSYC 3458		4				
PHIL 1145	4							
		19			16			0
Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
PSYC 3200		4 EESC 2000		1 Vacation		Co-op		
BIOL 2301 and BIOL 2302	5	CHEM 2311 and CHEM 2312		5				
PHIL 1105	4	PSYC 2320		4				
PHIL 1115	4	PHIL 2330		4				

4 Behavioral Neuroscience and Philosophy, BS

		PHIL restricted elective	4					
	17		18		0			0
Year 3								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op		PHIL restricted elective	4	PHIL 2325	4	Co-op		
		BNS core course	4	General elective	4			
		PSYC elective	4					
		General elective	4					
	0		16		8			0
Year 4								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op		BIOL 4709 or 5587	4	Vacation		Co-op		
		BNS core course	4			ENGW 3315 (online)	4	
		PHIL elective	4					
		General elective	4					
	0		16		0			4
Year 5								
Fall	Hours	Spring	Hours					
Co-op		PHIL 4535 or 4555	4					
		PHIL elective	4					
		BNS upper-level elective	4					
		General elective	4					
	0		16					

Total Hours: 130

FOUR YEARS, TWO CO-OPS

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
BNSC 1000	1	ENGW 1111	4	PHIL 2325	4	Vacation		
BIOL 1107 and BIOL 1108	5	BIOL 2299	4	PSYC elective	4			
CHEM 1161 and CHEM 1162 and CHEM 1163	5	MATH 1251	4					
PSYC 1101	4	PSYC 3458	4					
PHIL 1145	4							
	19		16		8			0
Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
PSYC 3200	4	EESC 2000	1	PSYC 2320	4	Co-op		
BIOL 2301 and BIOL 2302	5	CHEM 2311 and CHEM 2312	5	General elective	4			
PHIL 1115	4	PHIL 2330	4					
PHIL 1105	4	PHIL restricted elective	4					
		BNS core course	4					
	17		18		8			0
Year 3								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op		BNS core course	4	PHIL elective	4	Co-op		
		PHIL restricted elective	4	General elective	4	ENGW 3315 (online)	4	
		PHIL elective	4					
		General elective	4					
	0		16		8			4

Year 4			
Fall	Hours	Spring	Hours
Co-op		BIOL 4709 or 5587	4
		PHIL 4535 or 4555	4
		BNS upper-level elective	4
		General elective	4
	0		16

Total Hours: 130