

# NEUROSCIENCE, BA

Neuroscience (formerly Biological Basis of Behavior) is an interdisciplinary program in which students explore the relationship between behavior (both human and animal) and its organic bases. The Program offers courses in virtually all areas of neuroscience ranging from cellular neurobiology to cognitive neuropsychology and integrates these basic interdisciplinary courses with basic science requirements in biology, chemistry and psychology. Students also engage in supervised research in areas as diverse as molecular neurobiology, chemical neuroanatomy, visual sciences and behavioral ecology.

The minimum total course units (<https://www.college.upenn.edu/credits-needed-major/>) for graduation in this major is 36. Double majors may entail more course units.

**For more information:** <https://neuroscience.sas.upenn.edu>

For information about the General Education requirements, please visit the College of Arts & Sciences Curriculum (<https://www.college.upenn.edu/curriculum/>) page.

Code	Title	Course Units
<b>College General Education Requirements and Free Electives</b>		
Foundational Approaches + Sectors <sup>1</sup> + Free Electives		18
<b>Major Requirements</b>		
<i>Core Requirements</i>		
Introductory Chemistry:		
CHEM 1011	Introduction to General Chemistry I	1
or CHEM 1012	General Chemistry I	
or CHEM 1151	Honors Chemistry I	
CHEM 1021	Introduction to General Chemistry II	1
or CHEM 1022	General Chemistry II	
or CHEM 1161	Honors Chemistry II	
Introductory Biology:		
Select one of the following Options:		3
Option 1:		
BIOL 1101	Introduction to Biology A	
BIOL 1102	Introduction to Biology B	
Option 2:		
BIOL 1121	Introduction to Biology - The Molecular Biology of Life	
BIOL 1123	Introductory Molecular Biology Laboratory	
BIOL 1124	Introductory Organismal Biology Lab	
Select 1 CU of a 2000-level BIOL course:		
BIOL 2810	Biochemistry	
or BIOL 201C	Cell Biology	
or BIOL 2311	Human Physiology	
or BIOL 331C	Principles of Human Physiology	
or BIOL 221C	Molecular Biology and Genetics	
or BIOL 241C	Evolutionary Biology	
or BIOL 261C	Ecology: From individuals to ecosystems	
Introduction to Brain & Behavior:		
NRSC 1110	Introduction to Brain and Behavior	1
Neural Systems and Behavior:		

Select one of the following 2000-level NRSC courses: 1

Systems and Behavior (Attribute ABBS) (<http://catalog.upenn.edu/attributes/abbs/>)

NRSC 2140 Evolution of Behavior: Animal Behavior

NRSC 2217 Visual Neuroscience

NRSC 2227 Physiology of Motivated Behavior

NRSC 2233 Neuroethology

NRSC 2249 Cognitive Neuroscience

Cellular Neuroscience:

Select one of the following 2000-level NRSC courses: 1

Cellular Neuroscience (Attribute ABBU) (<http://catalog.upenn.edu/attributes/abbu/>)

NRSC 2240 Chronobiology and Sleep

NRSC 2260 Neuroendocrinology

NRSC 2350 Developmental Neurobiology

NRSC 2269 Autonomic Physiology

NRSC 2270 Drugs, Brain and Mind

Neurobiology:

NRSC 2110 Molecular and Cellular Neurobiology 1

Statistics:

Select one of the following: 1

BIOL 2510 Statistics for Biologists

STAT 1010 Introductory Business Statistics

STAT 1110 Introductory Statistics

*Additional NRSC Major Elective Courses* 8

Students must additionally take 8 elective courses for the major. Of these courses, 3 must be NRSC courses or courses with the attribute ABBE. The other 5 courses can be any courses from the broader approved electives list for the NRSC major (Attribute ABBM).<sup>2</sup>

Major Elective (Attribute ABBM) (<http://catalog.upenn.edu/attributes/abbm/>)

**Total Course Units** 36

<sup>1</sup> You may count no more than one course toward both a Major and a Sector requirement. For Exceptions, check the Policy Statement (<http://www.college.upenn.edu/sectors-policy/>).

<sup>2</sup> See the NRSC web site for approved courses in areas of specialized study. Students are encouraged to take a research course (NRSC 3999 Independent Research, NRSC 4999 Advanced Independent Research) or do sponsored research in their junior or senior year.

## Honors Option

Applicants are expected to have a minimum cumulative GPA of 3.5.

Code	Title	Course Units
One advanced course (4000 level or above)		1
NRSC 3999	Independent Research	1
NRSC 4999	Advanced Independent Research	1

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2025 and later. Students should

consult with their academic program regarding final certifications and requirements for graduation.

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