

NEUROBIOLOGY, B.S.

Seven Penn State campuses are scheduled for closure after Spring 2027: DuBois, Fayette, New Kensington, Mont Alto, Shenango, Wilkes-Barre, and York. New students are not being admitted at these campuses.

Begin Campus: Any Penn State Campus

End Campus: University Park

Degree Requirements

For the Bachelor of Science degree in Neurobiology, a minimum of 122 credits is required:

Requirement	Credits
General Education	45
Requirements for the Major	95-97

18 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 9 credits of GN courses; 6 credits of GQ courses; 3 credits of GS courses.

Requirements for the Major

To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (<https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/>).

Code	Title	Credits
Prescribed Courses		
BIOL 162	Human Anatomy and Physiology I - Laboratory	1
BIOL 470	Functional and Integrative Neuroscience	3
CHEM 111	Experimental Chemistry I	1
CHEM 210	Organic Chemistry I	3
CHEM 212	Organic Chemistry II	3
PHYS 250	Introductory Physics I	4
PHYS 251	Introductory Physics II	4
<i>Prescribed Courses: Require a grade of C or better</i>		
BIOL 161	Human Anatomy and Physiology I - Lecture	3
BIOL 469	Neurobiology	3
Additional Courses		
BIOL 222	Genetics	3
or BIOL 322	Genetic Analysis	
BMB 211	Elementary Biochemistry	3
or BMB 401	General Biochemistry	
CHEM 113	Experimental Chemistry II	1
or CHEM 113B	Experimental Chemistry II--Bioscience	
CHEM 213W	Laboratory in Organic Chemistry - Writing Intensive	2
or CHEM 213M	Laboratory in Organic Chemistry - Honors, Writing Intensive	
PSYCH 100	Introductory Psychology	3
or PSYCH 100H	Honors Introductory Psychology	
PSYCH 260/	Neurological Bases of Human Behavior	3
BBH 203		
or PSYCH 260A	Neurological Bases of Human Behavior	

Groups

Select a minimum of 15 credits of 400-level biology courses, with at least 6 credits from Group A (Molecular and Cellular Neuroscience), 3 credits from Group B (Behavioral, Structural, and Cognitive Neuroscience), 3 credits from Group C (Additional Coursework on Topics Highly Relevant to Neuroscience), and 3 credits from Group D (Laboratory Requirement).

Group A: Molecular and Cellular Neuroscience

Select 6 credits from the following:

BIOL 404	Cellular Mechanisms in Vertebrate Physiology
BIOL 413	Cell Signaling and Regulation
BIOL 430	Developmental Biology
BIOL 467	Molecular Basis of Neurological Diseases

Group B: Behavioral, Structural, and Cognitive Neuroscience

Select 3 credits from the following:

ANTH 466	The Skull
BBH 468	Neuroanatomical Bases for Disorders of Behavior and Health
BIOL 426	Developmental Neurobiology
BIOL 478	HUMAN NEUROANATOMY
KINES 465	Neurobiology of Sensorimotor Stroke Rehabilitation
KINES 471	MOTOR CONTROL
PSYCH 452	Learning and Memory
PSYCH 455	Cognitive Neuroscience
PSYCH 458	Visual Cognition
PSYCH 462	Physiological Psychology
PSYCH 478	Clinical Neuropsychology

Group C: Additional Coursework on Topics Highly Relevant to Neuroscience

Select 3 credits from the following:

BBH 451	Pharmacological Influences on Health
BIOL 418	Biology of Human Infectious Diseases
BIOL 422	Advanced Genetics
BIOL 434	Pathobiology of Emerging Infectious Disease
BIOL 439	Practical Bioinformatics
BIOL 455	Stem Cell Biology and Therapy
BIOL 460	Human Genetics
BIOL 465	Network analysis of biological systems
BIOL 472	Human Physiology
BIOL 475	Human Pathophysiology
BIOL 479	General Endocrinology
NUTR 460	Nutritional Neuroscience

Group D: Laboratory Requirement

Select 3 credits from the following:

BIOL 421	Comparative Anatomy of Vertebrates
BIOL 437	Histology
BIOL 473	Laboratory in Mammalian Physiology
BIOL 476	Advanced Human Anatomy - cadaver based
BIOL 477	Biology Cadaver Dissection
BIOL 478	HUMAN NEUROANATOMY
BIOL 494	Research Project
BIOL 496	Independent Studies

SC 295	Science Co-op Work Experience I	
SC 395	Science Co-op Work Experience II	
SC 495	Science Co-op Work Experience III	
<i>Additional Courses: Require a grade of C or better</i>		
BIOL 110	Biology: Basic Concepts and Biodiversity	4
or BIOL 110H	Honors Biology: Basic Concepts and Biodiversity	
BIOL 230W	Biology: Molecules and Cells	4
or BIOL 230M	Honors Biology: Molecules and Cells	
CHEM 110	Chemical Principles I	3
or CHEM 110H	Chemical Principles I - Honors	
CHEM 112	Chemical Principles II	3
or CHEM 112H	Chemical Principles II - Honors	
MATH 140B	Calculus and Biology I	4
or MATH 140	Calculus With Analytic Geometry I	
STAT 250	Introduction to Biostatistics	3-4
or STAT 200	Elementary Statistics	
or STAT 240	Introduction to Biometry	
Supporting Courses and Related Areas		
Select 19-20 credits from department list		19-20

General Education

Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (<https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/>) section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

Foundations (grade of C or better is required and Inter-Domain courses do not meet this requirement.)

- **Quantification (GQ):** 6 credits
- **Writing and Speaking (GWS):** 9 credits

Breadth in the Knowledge Domains (Inter-Domain courses do not meet this requirement.)

- **Arts (GA):** 3 credits
- **Health and Wellness (GHW):** 3 credits
- **Humanities (GH):** 3 credits
- **Social and Behavioral Sciences (GS):** 3 credits
- **Natural Sciences (GN):** 3 credits

Integrative Studies

- **Inter-Domain Courses (Inter-Domain):** 6 credits

Exploration

- **GN**, may be completed with Inter-Domain courses: 3 credits
- **GA, GH, GN, GS, Inter-Domain courses.** This may include 3 credits of World Language course work beyond the 12th credit level or the

requirements for the student's degree program, whichever is higher: 6 credits

University Degree Requirements

First Year Engagement

All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

Cultures Requirement

6 credits are required and may satisfy other requirements

- United States Cultures: 3 credits
- International Cultures: 3 credits

Writing Across the Curriculum

3 credits required from the college of graduation and likely prescribed as part of major requirements.

Total Minimum Credits

A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

Quality of Work

Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

Limitations on Source and Time for Credit Acquisition

The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (<https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/>)). For more information, check the Suggested Academic Plan for your intended program.