SYSTEMS NEUROSCIENCE, 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 Systems Neuroscience, a minimum of 121 credits is required:

Requirement	Credits
General Education	45
Requirements for the Major	94

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		
BBH 210	Biobehavioral Aspects of Genetics	3
BBH 301W	Values and Ethics in Biobehavioral Health Research and Practice	3
BIOL 161	Human Anatomy and Physiology I - Lecture	3
BIOL 162	Human Anatomy and Physiology I - Laboratory	1
BIOL 163	Human Anatomy and Physiology II - Lecture	3
BIOL 164	Human Anatomy and Physiology II - Laboratory	1
CHEM 110	Chemical Principles I	3
PHYS 250	Introductory Physics I	4
PHYS 251	Introductory Physics II	4
PSYCH 100	Introductory Psychology	3
STAT 184	Introduction to R	3
Prescribed Courses: Require a grade of C or better		
BBH 203	Neurological Bases of Human Behavior	3
BBH 368	Neuroanatomy, Behavior, and Health	3
BBH 451	Pharmacological Influences on Health	3
BBH 468	Neuroanatomical Bases for Disorders of Behavior and Health	3
BBH 469	Neurobiology	3
BBH 470	Functional and Integrative Neuroscience	3
BIOL 110	Biology: Basic Concepts and Biodiversity	4
MATH 140B	Calculus and Biology I	4
STAT 200	Elementary Statistics	4
Additional Courses		
Additional Neuroscience Courses		
Select 12 credits from the following:		12
BBH 204	Methods in Neuroscience Research	
BBH 410	Developmental and Health Genetics	
BBH 432	Biobehavioral Aspects of Stress	
BBH 475H	Honors Biobehavioral Analysis of Addiction	
BBH 494	Research Project (3 credits of 494 can count toward additional courses; a research plan has to be agreed upon by instructor and student and a final report has to be filed.)	
BIOL 426	Developmental Neurobiology	
BMB 400	Molecular Biology of the Gene	
BME 406	Medical Imaging	
BME 437	Biomedical Data Science for Bioengineers	
CSD 431	Neuroanatomical and Neurophysiological Foundations of Communication Disabilities	
CSD 497A		
KINES 360	The Neurobiology of Motor Control and Development	
KINES 465	Neurobiology of Sensorimotor Stroke Rehabilitation	
NUTR 460	Nutritional Neuroscience	
PSYCH 455	Cognitive Neuroscience	
Basic Sciences		
Select 9 credits from the following:		9
ANSC 415	Companion Animal Behavior	
ANTH 21	Introductory Biological Anthropology	
ANTH 22	Humans as Primates	
BIOL 129	Mammalian Anatomy	
BIOL 155	Introduction to the Biology of Aging	
BIOL 230W	Biology: Molecules and Cells	
or BIOL 230H	Honors Biology: Molecules and Cells	
or BIOL 240H	Honors Biology: Function and Development of Organisms	
or BIOL 240W	Biology: Function and Development of Organisms	
BIOL 409	Biology of Aging	
BIOL 479	General Endocrinology	
BMB 251	Molecular and Cell Biology I	
CHEM 111	Experimental Chemistry I	
CHEM 112	Chemical Principles II	
CHEM 113	Experimental Chemistry II	
CHEM 203	Fundamentals of Organic Chemistry II (While not required, students taking CHEM 203 are recommended to have taken CHEM 111.)	
or CHEM 212	Organic Chemistry II	
CHEM 213	Laboratory in Organic Chemistry	
CMPSC 100	Computer Fundamentals and Applications	
CMPSC 102	Introduction to Visual Programming	
FDSC 404	Sensory Evaluation of Foods	
FDSC 406W	Physiology of Nutrition	
FDSC 407	Food Toxins	
MICRB 106	Elementary Microbiology	
MICRB 107	Elementary Microbiology Laboratory	
MICRB 201	Introductory Microbiology	

MICRB 202	Introductory Microbiology Laboratory	
PSYCH 460	Comparative Psychology	
PSYCH 470	Abnormal Psychology	
STAT 240	Introduction to Biometry	
STAT 300	Statistical Modeling I	
STAT 380	Data Science Through Statistical Reasoning and Computation	
VBSC 211	The Immune System and Disease	
VBSC 230	The Science of Poisons	
Organic chemistry		
Select 3 credits from the following:		3
CHEM 202	Fundamentals of Organic Chemistry I	
or CHEM 210	Organic Chemistry I	
Supporting Courses and Related Areas		
Select 9 credits of University Wide Offerings in consultation with adviser		9

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.