

NEUROSCIENCE (B.S.)

The goal of the Neuroscience major is to provide students with a strong background in fundamental basic sciences and exposure to the integrative nature of neuroscience to allow students to understand nervous system function from a variety of perspectives. Students will emerge with a strong foundation in basic science and applied neuroscience that will make them competitive for post-graduate studies or employment in industry, government, health, and education.

The degree program is offered jointly through the Departments of Biological Sciences and Psychology. During the freshman year, or as early as possible, students interested in neuroscience should consult one of these departments to obtain information from an undergraduate advisor.

The Neuroscience major will lead to a Bachelor of Science (B.S.) degree. Candidates must complete 120 credits in course work including satisfaction of the University General Education Requirements (<http://bulletins.wayne.edu/undergraduate/general-information/general-education>) and the College of Liberal Arts and Sciences Group Requirements (<http://bulletins.wayne.edu/undergraduate/college-liberal-arts-sciences/bachelors-degree-requirements>), as well as the major requirements cited below. All course work must be completed in accordance with the regulations of the University (<http://bulletins.wayne.edu/undergraduate/general-information/academic-regulations>) and the College (<http://bulletins.wayne.edu/undergraduate/college-liberal-arts-sciences/academic-regulations>) governing undergraduate scholarship and degrees.

Major Requirements

Major requirements are divided into three categories: (A) Basic science courses, (B) Neuroscience core courses, and (C) Electives. Elective courses are organized into two sub-categories and students must select from each; this is to ensure breadth of exposure.

Basic Science Courses

Students may double-count up to 11 - 12 credits with University General Education requirements.

Code	Title	Credits
Math 4		
MAT 2010	Calculus I	
Statistics 3-4		
PSY 2030	Statistical Methods in Psychology	
	or STA 1020 Elementary Statistics	
	or STA 2210 Probability and Statistics	
Biology 7		
BIO 1510	Basic Life Mechanisms	
BIO 2600	Introduction to Cell Biology	
Chemistry 15		
CHM 1220	General Chemistry I	
& CHM 1230	and General Chemistry I Laboratory	
CHM 1240	Organic Chemistry I	
& CHM 1250	and Organic Chemistry I Laboratory	
CHM 2220	Organic Chemistry II	
& CHM 2230	and Organic Chemistry II Laboratory	
Biochemistry 3		
BIO 3100	Cellular Biochemistry	
	or CHM 5600 Survey of Biochemistry	
Physics 10		

PHY 2130	Physics for the Life Sciences I	
& PHY 2131	and Physics for the Life Sciences Laboratory	
PHY 2170	University Physics for Scientists I	
& PHY 2171	and University Physics Laboratory	
Social/Behavioral Science		4
PSY 1010	Introductory Psychology	
Total Credits		46-47

Neuroscience Core Courses

Code	Title	Credits
BIO 3200	Human Physiology	3
PSY 3330	Systems Neuroscience	3
Total Credits		6

Elective Courses

Select 18 credits, with a minimum of 6 credits from each category.

Code	Title	Credits
Behavioral and Cognitive Neuroscience		
KIN 3550	Motor Learning and Control	
NFS 4230	Macronutrient Metabolism	
NFS 5170	Nutrition, Physical Activity, and the Brain	
PHI 5230	Philosophy of Science	
PHI 5550	Philosophy of Mind	
PSY 3040	Psychology of Perception: Fundamental Processes	
PSY 3060	Psychology of Learning and Memory: Fundamental Processes	
PSY 4140	Hormones and Behavior	
PSY 4990	Directed Study and Research	
PSY 4998	Senior Thesis	
PSY 5040	Cognitive Neuroscience	
PSY 5070	Neuropharmacology	
PSY 5080	Cellular Basis of Animal Behavior	
PSY 5330	Human Neuropsychology	
PSY 5440	Developmental Neuropsychology	
Cellular and Molecular Neuroscience		
BIO 3070	Genetics	
BIO 3990	Directed Study	
BIO 4120	Comparative Physiology	
BIO 4690	Molecular and Cellular Neurobiology	
BIO 5040	Biometry	
BIO 5080	Cellular Basis of Animal Behavior	
BIO 5620	Developmental Biology	
BIO 5996	Senior Research	
BIO 6055	Biology of the Eye	
BIO 6190	Advanced Special Topics	
BIO 6690	Neurobiology I	
BIO 6990	Honors Directed Study in Biology	
PHY 3750	Introduction to Computational Methods	
PHY 6750	Applied Computational Methods	
ROC 6710	Physics in Medicine	

Honors Requirements

To be recommended for an honors degree from this program, a student must maintain a cumulative g.p.a. of at least 3.30 and complete a minimum of 14 honors course credits including:

Code	Title	Credits
NEU 4991	Honors Undergraduate Research in Neuroscience	2-4
NEU 4998	Honors Thesis in Neuroscience	3
	One 42XX level Honors Seminar	3
	Remaining credits to be earned in honors sections or honors options within the Neuroscience major	4-6

NEU 4990 Undergraduate Research in Neuroscience Cr. 2-4

Individual research projects conducted with a supervising faculty member. Offered Every Term.

Repeatable for 6 Credits

NEU 4991 Honors Undergraduate Research in Neuroscience Cr. 2-4

Individual research conducted under the supervision of a faculty member. Offered Every Term.

NEU 4998 Honors Thesis in Neuroscience Cr. 3

Research leading to the completion of a senior honors thesis in Neuroscience. Offered Every Term.