

# Neurobiology, B.S.

The Neurobiology major is designed to teach students how neurobiologists apply cellular, molecular, systems, and behavioral analyses in understanding how the nervous system works. The hallmark of the major is a year-long, in-depth exploration of the intellectual tools used to create, advance, and disseminate knowledge about the nervous system. Through neurobiology satellite courses, students acquire advanced factual knowledge about neurobiology. In addition, Neurobiology majors may choose to participate in research through BIO SCI 199, where they will learn technical skills and receive mentoring from faculty members.

Students completing the Neurobiology major will be well qualified for admission to graduate or professional schools in preparation for careers in biological research, medicine, dentistry, veterinary medicine, nursing, and other related fields. Even without additional education, they will be competitive for positions in the pharmaceutical industry, the health care delivery industry, or in medically or biologically related technologies. The major also provides valuable preparation for students interested in entering other disciplines that increasingly interface with biology and biotechnology, such as law, business administration, and government policy. Additionally, the major provides excellent preparation for students who wish to become high school science teachers.

**Application Process to Declare the Major:** The major in Neurobiology is open to junior- and senior-level students only. Applications to declare the major can be made at any time, but typically in the spring of the sophomore year. Review of applications submitted at that time and selection to the major by the Neurobiology Faculty Board is completed during the summer. Information can also be found at the <http://www.changeofmajor.uci.edu>. Double majors within the School of Biological Sciences or with Public Health Sciences, Biomedical Engineering: Premedical, Nursing Science, or Pharmaceutical Sciences are not permitted.

**All students must meet the University Requirements (<http://catalogue.uci.edu/informationforadmittedstudents/requirementsforabachelorsdegree/>).**

**All students must meet the School Requirements (<http://catalogue.uci.edu/charliedunlopschoolofbiologicalsciences/#schoolrequirements>).**

## Major Requirements

A. Upper-Division Core:	
Select one of the following:	
BIO SCI D103	Cell Biology
BIO SCI D104	Developmental Biology
BIO SCI E109	Human Physiology
B. Required Major Courses:	
BIO SCI N115A- N115B	Advanced Neurobiology I and Advanced Neurobiology II
C. Upper-Division Laboratories:	
BIO SCI N113L	Neurobiology Laboratory
and select two of the following:	
BIO SCI D111L	Developmental and Cell Biology Laboratory
BIO SCI E106L	Habitats and Organisms
BIO SCI E112L	Physiology Laboratory
BIO SCI E115L	Evolution Laboratory
BIO SCI E131L	Image Analysis in Biological Research
BIO SCI E140L	Evolution and the Environment Laboratory
BIO SCI E160L	Biology of Birds Lab
BIO SCI E166L	Field Biology
BIO SCI E179L	Field Freshwater Ecology
BIO SCI E186L	Population and Community Ecology Lab
BIO SCI M114L	Biochemistry Laboratory
BIO SCI M116L	Molecular Biology Laboratory
BIO SCI M118L	Experimental Microbiology Laboratory
BIO SCI M121L	Advanced Immunology Laboratory
BIO SCI N123L	Human Neuroimaging Lab
One of these two laboratories can be satisfied by completion of Excellence in Research in the Biological Sciences.	
D. Upper-Division Biology Electives:	

Select three of the following:
BIO SCI N117–N190 (excluding BIO SCI N120A-BIO SCI N120B-BIO SCI N120C)
and select one four-unit course from the following:
BIO SCI D103–D190, E106–E190, M114–M190, N110–N190 (excluding BIO SCI N120A-BIO SCI N120B-BIO SCI N120C)
No course may be used to satisfy more than one requirement.
E. Honors Track of the Neurobiology Major: BIO SCI H195 in the area of neurobiology and Excellence in Research in the Biological Sciences - presenting neurobiology related research. <sup>1</sup>

<sup>1</sup> Requirements to enter the Honors Track: A 3.3 or better average GPA in BIO SCI N115A-BIO SCI N115B and a 3.0 or better average GPA in all required biology courses.

If the number of eligible students who apply for the Honors Track exceeds the number that can be accommodated in the neurobiology related H195, the department will try to open an additional section. If this is not feasible, the Neurobiology Major Faculty Advisory Committee will select the top applicants, based mainly on the students' BIO SCI N115A-BIO SCI N115B grades and biology GPA.

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Freshman		
Fall	Winter	Spring
BIO SCI 93	BIO SCI 94	MATH 5A
CHEM 1A	CHEM 1B	CHEM 1C- 1LC
Lower-Division Writing <sup>1</sup>	Lower-Division Writing <sup>1</sup>	Lower-Division Writing <sup>1</sup>
BIO SCI 2A	General Education	
Sophomore		
Fall	Winter	Spring
BIO SCI 97	BIO SCI 98	BIO SCI 99
CHEM 51A	CHEM 51B- 51LB	CHEM 51C- 51LC
CHEM 1LD	General Education	STATS 7, 8, MATH 2D, or MATH 3A
MATH 5B		
Junior		
Fall	Winter	Spring
BIO SCI N115A	BIO SCI N115B	Bio. Sci. Elective
Bio. Sci. Elective	BIO SCI N113L	PHYSICS 3C- 3LC
BIO SCI 100	PHYSICS 3B- 3LB	Research/Elective
PHYSICS 3A	Research/Elective	
Senior		
Fall	Winter	Spring
Bio. Sci. Elective	Bio. Sci. Lab	Bio. Sci. Lab
Research/Elective	Bio. Sci. Elective	Research/Elective
General Education/Elective	General Education/Elective	General Education/Elective

<sup>1</sup> Students have the option of taking HUMAN 1AS, HUMAN 1BS, HUMAN 1CS or WRITING 40, WRITING 50, WRITING 60 in order to fulfill the lower-division writing requirement.

- Neurobiology and Behavior, Graduate Program