

# 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

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| 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:   |  |

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| 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