NEUROSCIENCE AND BEHAVIOR MAJOR (B.S.)

https://colsa.unh.edu/biological-sciences/program/bs/neuroscience-and-behavior-major

Description

The major in neuroscience and behavior (NSB) offers an interdisciplinary approach to human and non-human behavior, focusing on the evolution and adaptiveness of certain behaviors, as well as their underlying neural mechanisms. Students who have always been fascinated by how the brain functions will be well served by this major, as will those who love wild animals and wish to better understand their behavior. The B.S. in neuroscience and behavior is based on a solid foundation in biology, chemistry, physics, statistics, and genetics (foundation courses). These are followed by a two-semester course sequence that covers the fundamentals of neuroscience and behavior. Students can then pick five or more electives focusing on areas of interest.

NSB students are encouraged to take advantage of research experiences in the laboratories of the psychology and biology faculty in the program. This provides valuable experience with cutting-edge equipment and techniques. Some students may share aspects of a larger project, whereas others may be relatively independent and design their own project under supervision. In either case, important skills are gained by the discipline of gathering data, analyzing and interpreting it, and presenting it to a broader audience.

The curriculum provides most of the requirements and recommended courses for students seeking admission to graduate school and to professional schools in medicine and veterinary medicine. Students who might choose not to go on to advanced degrees are well-prepared for employment as skilled technicians in research laboratories or, if their interests are in animal behavior, as field research assistants or animal trainers. With additional courses in education, the B.S. in NSB also qualifies graduates to teach at the elementary, junior high, and high school levels.

Faculty participating in the NSB major combine a love of teaching and student mentoring with a passion for research, and encourage student participation. Research facilities that students can use include the aviary, the confocal imaging center, the Hubbard Center for Genomic Studies, and the many marine, freshwater, and estuarine laboratories associated with UNH programs. Students can also take summer courses at the Shoals Marine Laboratory.

Requirements

Students majoring in NSB are required to take foundation courses in basic science, core courses, and five electives from an extensive list of courses, including some offered by other departments including biochemistry, molecular and cellular biology, and natural resources. Finally, a capstone experience is required. This may be independent research, an advanced seminar, or other special student activity. It is meant to integrate prior experience and take the student to a new level in an area of special interest.

### Code | Title | Credits
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**NSB Foundation courses**
NSB 400 | Topics Neuroscience & Behavior | 1
BIOL 411 & BIOL 412 | Introductory Biology: Molecular and Cellular and Introductory Biology: Evolution, Biodiversity and Ecology (2 semesters) | 8
CHEM 403 & CHEM 404 | General Chemistry I and General Chemistry II (2 semesters) | 8
CHEM 545 & CHEM 546 | Organic Chemistry and Organic Chemistry Laboratory | 5
BMCB 658 & BMCB 659 | General Biochemistry and General Biochemistry Lab | 5
PHYS 401 | Introduction to Physics I | 4
PSYC 402 | Statistics in Psychology or BIOL 528 | 4
GEN 604 | Principles of Genetics | 4
NSB 500 & NSB 501 | Fundamentals of Neuroscience and Behavior I and Fundamentals of Neuroscience and Behavior I Laboratory | 5
NSB 502 & NSB 503 | Fundamentals of Neuroscience and Behavior II/Systems Neuroscience and Fundamentals of Neuroscience and Behavior II Laboratory | 5

### Electives (Choose 5) 20-22

1. BIOL 541 | General Ecology | 4
2. BMCB 605 | Eukaryotic Cell and Developmental Biology | 4
3. BMS 507 & BMS 508 | Human Anatomy and Physiology I and Human Anatomy and Physiology II | 4
4. BMS 702 | Endocrinology | 4
5. BMS 711 | Toxicology | 4
6. BMS 718 | Mammalian Physiology | 4
7. GEN 706 | Human Genetics | 4
8. KIN 706 & KIN 707 | Neurology and Neurology Lab | 4
9. MEFB 714 | Field Animal Behavior (SML, C) | 4
10. NSB 705 | Molecular and Cellular Neurobiology (C) | 4
11. NSB 727 | Animal Communication (C) | 4
12. NSB 728 | Research Methods in Animal Behavior (C) | 4
13. PHIL 630 | Neuroscience and Philosophy | 4
14. PSYC 511 | Sensation and Perception | 4
15. PSYC 512 | Psychology of Primates | 4
16. PSYC 513 | Cognitive Psychology | 4
17. PSYC 521 | Behavior Analysis | 4
18. PSYC 710 | Visual Perception (C) | 4
19. PSYC 716 | Cognitive Neuroscience (C) | 4
20. PSYC 720 | Animal Cognition (C) | 4
21. PSYC 731 | Brain and Behavior (C) | 4
22. PSYC 733 | Drugs and Behavior (C) | 4
23. PSYC 735 | Neurobiology of Mood Disorders (C) | 4
24. PSYC 736 | Attention Disorders (C) | 4
25. PSYC 737 | Behavioral Medicine (C) | 4
26. PSYC 741 | Advanced Topics | 4
27. PSYC 741W | Advanced Topics (Neuroscience of Memory, Behavioral Neuroscience C) | 4
Neuroscience and Behavior Major (B.S.)

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ZOOL 613</td>
<td>Animal Behavior</td>
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<tr>
<td>ZOOL 625 &amp; ZOOL 626</td>
<td>Principles of Animal Physiology and Animal Physiology Laboratory (C)</td>
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<tr>
<td>ZOOL 690</td>
<td>Evolution (C)</td>
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<td>ZOOL 726</td>
<td>Conservation Behavior (C)</td>
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<td>ZOOL 733</td>
<td>Behavioral Ecology (C)</td>
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<tr>
<td>ZOOL 736</td>
<td>Genes and Behavior (C)</td>
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<tr>
<td>ZOOL 777</td>
<td>Neuroethology</td>
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795/796 or 799 Independent Study, C

**Capstone**

1. Both must be taken to count as one of the 5 required major electives
2. Courses that are eligible to fulfill the Capstone requirement are indicated with a (C) and must be taken senior year. You can: 1) designate a course as a Capstone course, with additional requirements as determined by the instructor; 2) complete one semester of Capstone Research (BIOL 795, PSYC 795, or INCO 790); 3) do an honors thesis in Neuroscience (NSB 799H) or Biology or Psychology (BIOL 799 or PSYC 797/799) or; 4) participate in an advanced graduate seminar.

NSB majors may use BIOL 411, BIOL 412, CHEM 403, CHEM 404, PHYS 401, PHYS 407 and either PSYC 402 or BIOL 528 to fulfill the Biological Sciences, Physical Sciences, Discovery Lab, and Quantitative Reasoning Discovery requirements.