Behavioral Neuroscience

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The behavioral neuroscience major is an interdepartmental program for undergraduates, supported by neuroscience faculty across the College of Science. The field of neuroscience focuses on brain mechanisms and how they give rise to behavioral functions in humans and animals. Behavioral neuroscience combines the disciplines of biology and psychology with a strong background in basic physical sciences and mathematics. The goal is to achieve an understanding of the anatomy and physiology of nerve cells, chemical transmission, neural circuits, fundamental biological processes such as inheritance and development, and then to see how these biological events give rise to normal and pathological behavior. The primary objective of the neuroscience major is to draw together faculty and students who are interested in this interdisciplinary topic and to provide undergraduates with an education in the field. This major also seeks to prepare students for advancement to graduate programs in the field of neuroscience or in biology or psychology programs with an emphasis in neurobiology. An additional objective of this major is to prepare its students for admission to medical school or other health profession programs. Finally, the goal of the curriculum is to prepare students for employment in clinical settings or in allied fields such as the biotech industry.

Note: Due to overlap in course content, double majoring in behavioral neuroscience with any of the following majors is not permitted: psychology, biology, cell and molecular biology, or biochemistry. Since the behavioral neuroscience major is already an interdisciplinary program of study, combined or independent majors with behavioral neuroscience are not permitted.

Academic Progression Standards

After four semesters in the major, students must have a GPA of at least 2.000 in all science and math courses and have completed at least six of the following courses:

Complete five of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1107</td>
<td>Foundations of Biology</td>
<td>5</td>
</tr>
<tr>
<td>and BIOL 1108</td>
<td>and Lab for BIOL 1107</td>
<td></td>
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<tr>
<td>BIOL 2299</td>
<td>Inquiries in Biological Sciences</td>
<td>4</td>
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<tr>
<td>MATH 1251</td>
<td>Calculus and Differential Equations for Biology I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 1211</td>
<td>General Chemistry 1</td>
<td>5</td>
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<tr>
<td>and CHEM 1212</td>
<td>and Lab for CHEM 1211</td>
<td></td>
</tr>
<tr>
<td>CHEM 1214</td>
<td>General Chemistry 2</td>
<td>5</td>
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<tr>
<td>and CHEM 1215</td>
<td>and Lab for CHEM 1214</td>
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<tr>
<td>BIOL 2301</td>
<td>Genetics and Molecular Biology</td>
<td>5</td>
</tr>
<tr>
<td>and BIOL 2302</td>
<td>and Lab for BIOL 2301</td>
<td></td>
</tr>
<tr>
<td>PSYC 2320</td>
<td>Statistics in Psychological Research</td>
<td>4</td>
</tr>
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Complete one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>PSYC 3458</td>
<td>Biological Psychology</td>
<td>4</td>
</tr>
</tbody>
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BIOL 3405 Neurobiology 4

Students who transfer into the behavioral neuroscience major will be allowed two semesters after entering the major to meet the minimum standards for their class. Students must maintain a minimum GPA of 2.000 to remain in this program. Students who fail to meet the above standards will be placed on probation. Two consecutive semesters on probation will result in dismissal from the major.

Behavioral Neuroscience Minor

The behavioral neuroscience minor consists of five courses requiring a minimum of 20 semester hours of study. Students are required to take one intermediate-level survey course and four behavioral neuroscience core courses, two from each of the parent departments of the discipline (i.e., psychology and biology). All students regardless of their major, including those majoring in psychology and biology, may minor in behavioral neuroscience.

Programs

Bachelor of Science (BS)

• Behavioral Neuroscience (http://catalog.northeastern.edu/undergraduate/science/behavioral-neuroscience/behavioral-neuroscience-bs)

Minor

• Behavioral Neuroscience (http://catalog.northeastern.edu/undergraduate/science/behavioral-neuroscience/behavioral-neuroscience-minor)

Courses

Behavioral Neuroscience Courses

BNSC 1000. Behavioral Neuroscience at Northeastern. 1 Hour.
Introduces first-year and new transfer students to the major and the field of behavioral neuroscience and to the professional and academic resources available to students at Northeastern University. Acquaints students with their faculty, advisors, and fellow students; provides an initial orientation to undergraduate research, cooperative education, study abroad, and other experiential learning options; familiarizes students with academic support resources and leadership opportunities; provides grounding in the culture and values of the university community—in short, familiarizes students with all skills needed to become a successful university student.

BNSC 1990. Elective. 1-4 Hours.
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

BNSC 2990. Elective. 1-4 Hours.
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

BNSC 3990. Elective. 1-4 Hours.
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

BNSC 4950. Seminar. 1-4 Hours.
Offers an in-depth study of selected topics.
Behavioral Neuroscience

BNSC 4970. Junior/Senior Honors Project 1. 4 Hours.
Focuses on in-depth project in which a student conducts research or produces a product related to the student’s major field. Combined with Junior/Senior Project 2 or college-defined equivalent for 8-credit honors project. May be repeated without limit.

BNSC 4971. Junior/Senior Honors Project 2. 4 Hours.
Focuses on second semester of in-depth project in which a student conducts research or produces a product related to the student’s major field. May be repeated without limit.

BNSC 4990. Elective. 1-4 Hours.
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

BNSC 4991. Research. 4 Hours.
Offers an opportunity to conduct research under faculty supervision.

BNSC 4993. Independent Study. 1-4 Hours.
Offers independent work under the direction of members of the department on a chosen topic. May be repeated without limit.

BNSC 4994. Internship. 4 Hours.
Offers students an opportunity for internship work. May be repeated without limit.