

BEHAVIORAL NEUROSCIENCE

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The behavioral neuroscience major is an interdepartmental program for undergraduates, with a program director and advisory board made up of the neuroscience faculty of the College of Arts and Sciences. 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 anatomy and physiology of nerve cells, chemical transmission, simple neural circuits, and 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 to 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, although there are additional science courses that should be taken as electives. 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 and psychology or behavioral neuroscience and biology is not permitted.

Transferring to the Major

Students must have a minimum cumulative GPA of 2.000 and completion of any three of the following five courses:

BIO U101	Principles of Biology 1	4 SH
with BIO U102	Lab for BIO U101	1 SH
or BIO U111	General Biology 1	4 SH
with BIO U112	Lab for BIO U111	1 SH
BIO U103	Principles of Biology 2	4 SH
with BIO U104	Lab for BIO U103	1 SH
or BIO U113	General Biology 2	4 SH
with BIO U114	Lab for BIO U113	1 SH

CHM U211	General Chemistry 1	4 SH
with CHM U212	Lab for CHM U211	1 SH
CHM U214	General Chemistry 2	4 SH
with CHM U215	Lab for CHM U214	1 SH
PSY U101	Foundations of Psychology	4 SH

with a minimum GPA of 2.000 for these courses. Acceptance into the major will be based on students' meeting the above criteria and availability of space in the program.

Academic Progression Standards

Same as college standards.

BS in Behavioral Neuroscience

NU CORE REQUIREMENTS

See page 42 for requirement list.

BEHAVIORAL NEUROSCIENCE MAJOR REQUIREMENTS

Survey Courses—Level 1: Introductory

PSYCHOLOGY

Complete the following course:

PSY U101	Foundations of Psychology	4 SH
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MATHEMATICS

Complete the following two courses:

MTH U141	Calculus 1	4 SH
or MTH U151	Calculus and Differential Equations for Biology 1	4 SH
MTH U142	Calculus 2	4 SH
or MTH U152	Calculus and Differential Equations for Biology 2	4 SH

SCIENCE

Complete the following four courses with corresponding labs:

BIOLOGY 1

BIO U101	Principles of Biology 1	4 SH
with BIO U102	Lab for BIO U101	1 SH
or BIO U111	General Biology 1	4 SH
with BIO U112	Lab for BIO U111	1 SH

BIOLOGY 2

BIO U103	Principles of Biology 2	4 SH
with BIO U104	Lab for BIO U103	1 SH
or BIO U113	General Biology 2	4 SH
with BIO U114	Lab for BIO U113	1 SH

CHEMISTRY 1

CHM U211	General Chemistry 1	4 SH
with CHM U212	Lab for CHM U211	1 SH

CHEMISTRY 2

CHM U214	General Chemistry 2	4 SH
with CHM U215	Lab for CHM U214	1 SH

Survey Courses—Level 2: Intermediate**PSYCHOLOGY**

Complete the following two courses:

PSY U320	Statistics in Psychological Research	4 SH
PSY U458	Psychobiology	4 SH
or BIO U405	Neurobiology	4 SH

SCIENCE

Complete the following three courses with corresponding labs:

BIO U301	Genetics and Molecular Biology	4 SH
with BIO U302	Lab for BIO U301	1 SH
CHM U311	Organic Chemistry 1	4 SH
with CHM U312	Lab for CHM U311	1 SH
CHM U313	Organic Chemistry 2	4 SH
with CHM U314	Lab for CHM U313	1 SH

Advanced Courses—Psychology**ADVANCED PSYCHOLOGY ELECTIVES (AREA A)**

Complete one course from the following list:

PSY U202	Biological Basis of Mental Illness	4 SH
PSY U358	Behavior Therapies	4 SH
PSY U400	Personality	4 SH
PSY U402	Social Psychology	4 SH
PSY U404	Developmental Psychology	4 SH
PSY U406	Abnormal Psychology	4 SH

ADVANCED PSYCHOLOGY ELECTIVES (AREA B)

Complete one course from the following list:

PSY U450	Learning and Motivation	4 SH
PSY U452	Sensation and Perception	4 SH
PSY U464	Psychology of Language	4 SH
PSY U466	Cognition	4 SH
PSY U510	Psychopharmacology	4 SH
PSY U512	Neuropsychology	4 SH
PSY U520	Language and the Brain	4 SH

Advanced Courses—Biology**ADVANCED BIOLOGY ELECTIVES (AREA A)**

Complete one course with its corresponding lab from the following list:

BIO U319	Regulatory Cell Biology	4 SH
with BIO U320	Lab for BIO U319	1 SH
BIO U407	Molecular Cell Biology	4 SH
BIO U551	Principles of Animal Physiology	4 SH
with BIO U552	Lab for BIO U551	1 SH

ADVANCED BIOLOGY ELECTIVES (AREA B)

Complete one course with corresponding lab from the following list:

BIO U403	Animal Behavior	4 SH
BIO U545	Neuroethology	4 SH
with BIO U546	Lab for BIO U545	1 SH
BIO U587	Comparative Neurobiology	4 SH

ADVANCED BIOLOGY ELECTIVES (AREA C)

Complete one course with corresponding lab from the following list:

BIO U311	Ecology	4 SH
with BIO U312	Lab for BIO U311	1 SH
BIO U315	Invertebrate Zoology	4 SH
with BIO U316	Lab for BIO U315	1 SH
BIO U317	Vertebrate Zoology	4 SH
with BIO U318	Lab for BIO U317	1 SH
BIO U323	Biochemistry	4 SH
with BIO U324	Lab for BIO U323	1 SH
BIO U401	Comparative Vertebrate Anatomy	4 SH
with BIO U402	Lab for BIO U401	1 SH
BIO U503	Marine Invertebrate Zoology	4 SH
with BIO U504	Lab for BIO U503	1 SH
BIO U543	Embryonic Stem Cells	4 SH
BIO U547	Sociobiology	4 SH
BIO U549	Microbial Biotechnology	4 SH
BIO U553	Biology of Muscle: Molecules to Movements	4 SH
BIO U565	Mammalogy	4 SH
with BIO U566	Lab for BIO U565	1 SH
BIO U573	Medical Microbiology	4 SH
with BIO U574	Lab for BIO U573	1 SH
BIO U577	Developmental Biology	4 SH
with BIO U578	Lab for BIO U577	1 SH
BIO U581	Biological Imaging	4 SH
BIO U583	Immunology	4 SH
BIO U585	Evolution	4 SH
with BIO U586	Lab for BIO U585	1 SH

Note: The following courses require permission prior to registration:

PTH U301	Gross Anatomy	4 SH
with PTH U302	Lab for PTH U301	1 SH
PTH U308	Neuroscience	4 SH

Specialty Courses**SEMINAR**

Complete one seminar from the following list:

BIO G383	Topics in Biochemistry Cell and Molecular Biology	2 SH
BIO G384	Topics in Integrative Biology	2 SH
BIO U409	Current Topics in Biology	4 SH
PSY U650	Seminar in Clinical Case Study	4 SH
PSY U652	Seminar in Ethics in Psychology	4 SH
PSY U654	Seminar in Behavioral Modification	4 SH
PSY U656	Seminar in Psychobiology	4 SH
PSY U658	Seminar in Psycholinguistics	4 SH
PSY U660	Seminar in Cognition	4 SH
PSY U666	Seminar in Clinical Psychology	4 SH
PSY U668	Seminar in Sensation and Perception	4 SH
PSY U670	Seminar in Research Psychology	4 SH
PSY U672	Seminar in History and Theories of Psychology	4 SH

LABORATORY COURSE

Complete one laboratory course from the following list:

BIO U579	Biochemistry/Molecular Biology Experimental Approaches	5 SH
BIO U924	Directed Study	4 SH
BIO U970	Junior/Senior Honors Project 1	4 SH
PSY U602	Experiments in Learning and Motivation	4 SH
PSY U604	Laboratory in Learning and Motivation	4 SH
PSY U606	Laboratory in Psychobiology	4 SH
PSY U608	Laboratory in Animal Behavior Research	4 SH
PSY U610	Laboratory in Psycholinguistics	4 SH
PSY U612	Laboratory in Cognition	4 SH
PSY U622	Laboratory in Sensation and Perception	4 SH
PSY U924	Directed Study	4 SH
PSY U970	Junior/Senior Honors Project 1	4 SH

BEHAVIORAL NEUROSCIENCE EXPERIENTIAL EDUCATION REQUIREMENT

Complete one of the following three options:

Option 1: Practical and Reflective Experience

Complete a practical experience and a reflective experience:

PRACTICAL EXPERIENCE

Complete one research co-op, research internship, research-oriented directed study, or study abroad.

REFLECTIVE EXPERIENCE

Complete one of the following capstones, seminars, or directed studies:

BIO U701	Biology Capstone	4 SH
BIO U954	Experiential Education Directed Study	4 SH
PSY U650	Seminar in Clinical Case Study	4 SH
PSY U652	Seminar in Ethics in Psychology	4 SH
PSY U656	Seminar in Psychobiology	4 SH
PSY U934	Independent Study	4 SH
PSY U951	Experiential Education Directed Study	4 SH

Option 2: Honors Project

Complete two semesters of a biology or psychology honors project:

BIO U970	Junior/Senior Honors Project 1	4 SH
with BIO U971	Junior/Senior Honors Project 2	4 SH
PSY U970	Junior/Senior Honors Project 1	4 SH
with PSY U971	Junior/Senior Honors Project 2	4 SH

Option 3: Directed Study

Complete two semesters of directed study with a final oral presentation or written report. Both semesters must be in the same lab:

BIO U924	Directed Study	4 SH
PSY U924	Directed Study	4 SH

BEHAVIORAL NEUROSCIENCE MAJOR CREDIT REQUIREMENT

Complete 83 semester hours for the major.

Due to overlap in course content, double majoring in behavioral neuroscience and psychology or behavioral neuroscience and biology is not permitted. Also, there is no minor offered in behavioral neuroscience.

GENERAL ELECTIVES

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION

If elected

UNIVERSITY-WIDE REQUIREMENTS

128 total semester hours required

Minimum 2.000 GPA required