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 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

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
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:
PHT U301 Gross Anatomy 4 SH
with PTH U302 Lab for PTH U301 1 SH
PHT 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 5 SH
- **BIO U924** Directed Study 4 SH
- **BIO U970** Junior/Senior Honors Project 1 4 SH
- **PSY U602** Experiments in Learning 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