NEUROSCIENCE BACHELOR OF ARTS

Program Overview

The neuroscience program is nested under the direction of the Department of Psychology and Neuroscience, while maintaining strong interdisciplinary connections. The program is designed to represent the psychological and biological foundations of this growing field.

Undergraduates preparing for careers in neuroscience or related fields must have a strong scientific foundation in the natural sciences. Students studying neuroscience at Drake University will be exposed to an interdisciplinary environment through coursework in physical and life sciences, close interactions with faculty and the opportunity to participate in research projects. The interdisciplinary nature of neuroscience can be appealing to students in allied fields such as psychology and biology, thus making earning a double major or minor an attractive option.

There are many career paths available to students interested in neuroscience or related fields. Some are interested in attending graduate school to pursue a career in basic or applied research and teaching. Others may want a neuroscience background as a foundation for further training in a health care field, such as medicine, physical therapy, optometry and nursing. Still others may want exposure to neuroscience topics because of an interest in professional writing (newspaper, magazine) about the field or working in a related field such as the pharmaceutical or biotechnology industry. In all cases, students should work with their academic advisor to determine what path is best for them.

B.A. Degree Requirements

The curriculum for a B.A. in neuroscience at Drake University is described below. Completion of the program requires completion of the course requirements listed below. Students will work with their advisor to make appropriate course selections when options are available, thus the precise number of credit hours for the major will vary slightly. Core requirements may be transferred by petition.

Code	Title	Hours
General Requirements		
NSCI 001	INTRODUCTION TO NEUROSCIENCE	3
NSCI 010	RESEARCH METHODS IN NEUROSCIENCE	3
BIO 012 & 012L	GENERAL/PRE-PROFESSIONAL BIOLOGY I and GENERAL/PRE-PROFESSIONAL BIOLOGY I LAB	4
BIO 013 & 013L	GENERAL/PRE-PROFESSIONAL BIOLOGY II and GENERAL/PRE-PROFESSIONAL BIOLOGY II LAB	4
CHEM 001 & CHEM 003	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LAB	4
PSY 011	INTRODUCTORY STATISTICS [1]	4
Quantitative analysis		
Select one of the following:		3
MATH 050	CALCULUS I	
PHY 011	GENERAL PHYSICS I	
PSY 111	ADVANCED STATISTICS (with lab)	
CS 065	INTRODUCTION TO COMPUTER SCIENCE I	
Behavioral Labs		
Select one of the following:		4
PSY 120 & PSY 121	CONDITIONING AND LEARNING LAB and CONDITIONING AND LEARNING	
PSY 123	BIOLOGICAL BASIS OF BEHAVIOR	
PSY 125	COGNITIVE PSYCHOLOGY	
PSY 126	COMPARATIVE PSYCHOLOGY	
PSY 133	PSYCHOLOGICAL ASSESSMENT	
Basic Biology		
Select one of the following:		3
BIO 105	INTRODUCTION TO GENETICS	
BIO 129 & 129L	MAMMALIAN PHYSIOLOGY and MAMMALIAN PHYSIOLOGY LAB	
BIO 165	CELL BIOLOGY	
CHEM 130 & CHEM 131	BIOCHEMISTRY I: FUNDAMENTALS and BIOCHEMISTRY I: FUNDAMENTALS LAB	
Behavioral Neuroscience		
Select one of the following:		3
BIO 107/ NSCI 127/PSY 127	BEHAVIOR GENETICS	
NSCI 126	NEUROCHEMISTRY	
PHAR 119	TOPICS IN NEUROPHARMACOLOGY	
Systems Neuroscience		
Select one of the following:		3
PHIL 130	MINDS, BRAINS, AND COMPUTERS	
NSCI 150	FUNCTIONAL NEUROANATOMY	
NSCI 152	NEUROBIOLOGY OF LEARNING & MEMORY	
Related Elective Courses		
Select two of the following, at least one upper-division:		6
BIO 101	COMPARATIVE ANATOMY OF VERTEBRATES	
BIO 114 & 114L	EVOLUTION and EVOLUTION LAB	
BIO/CS 116	BIOINFORMATICS	
BIO 127 & 127L	HISTOLOGY and HISTOLOGY LAB	
BIO/PHY 132	MEDICAL BIOPHYSICS	
CS 167	MACHINE LEARNING	
PSY 028	DRUGS AND BEHAVIOR [2]	
PSY 060	PRINCIPLES OF BEHAVIOR	
PSY 076	ABNORMAL PSYCHOLOGY	
PSY 122	SENSATION AND PERCEPTION	
PSY 128	HORMONES AND BEHAVIOR	
PSY 148	PSYCHOLOGY OF DEVELOPMENTAL DISABILITIES	
PSY 176	ADVANCED PSYCHOPATHOLOGY	
NSCI 090/91/190/19	INDEPENDENT STUDY	
NSCI 151	HISTORY OF NEUROSCIENCE	
NSCI 195	SPECIAL TOPICS SEMINAR	
NSCI 198	RESEARCH SEMINAR	
PHIL 140	NEUROSCIENCE AND THE LAW	
Capstone		
Select one of the following with the prior approval of both the advisor and instructor:		3

	NSCI 190C INDEPENDENT STUDY CAPSTONE	
	or NSCI 191C INDEPENDENT STUDY CAPSTONE	
	NSCI 192C INTERNSHIP CAPSTONE	
	NSCI 151 HISTORY OF NEUROSCIENCE	
	NSCI 198 RESEARCH SEMINAR	
Total Hours		**47**

1 BIO 140 BIOLOGY RESEARCH AND STATISTICAL METHODS , HSCI 060 STATISTICS IN HEALTH SCIENCES, or both STAT 071 STATISTICS I and STAT 072 STATISTICS II may substitute for PSY 011 INTRODUCTORY STATISTICS.

2 This course cannot substitute for PHAR 119 TOPICS IN NEUROPHARMACOLOGY

Note: Students must pass NSCI 001 INTRODUCTION TO NEUROSCIENCE, NSCI 010 RESEARCH METHODS IN NEUROSCIENCE, and PSY 011 INTRODUCTORY STATISTICS (or its substitutes) with a “C” or better (not a C-) to major in Neuroscience and to enroll in any upper level courses for which these are prerequisites

Internships, research or independent study courses will be awarded CR/NC grade, and still count towards the program requirements.