

# NEUROSCIENCE CERTIFICATE

Coordinator, Nathaniel Thom

Neuroscience is the study of the brain and the nervous system structure and function. The Neuroscience certificate is housed in the department of Biological and Health Sciences and is designed to introduce students to this field through interdisciplinary coursework and research. This program has a set of core courses and has a research emphasis. It also offers a variety of courses from several departments to complete the certificate hour requirements according to the student's own interests. The certificate provides a strong undergraduate foundation for graduate training in neuroscience or psychobiology, as well as clinical psychology, psychiatry, pharmacology, or psychiatric-mental health nursing.

## Requirements

Requirements for the Neuroscience Certificate are 24 credit hours:

Code	Title	Credits
<b>Certificate Requirements</b>		
<b>Core</b>		<b>8</b>
NEUR 241	Foundations of Neuroscience <sup>1</sup>	
	or BIOL 336 Neurobiology	
NEUR 369	Neuroscience Research Techniques	
NEUR 494	Neuroscience Capstone	
<b>Electives</b>		
Select 16 credits of the following: <sup>2</sup>		16
AHS 351	Human Anatomy	
AHS 361	Integrative Human Physiology	
AHS 452	Applied Physiology	
BIOL 322	Advanced Cellular and Developmental Biology	
BIOL 331	Human Anatomy and Physiology I	
BIOL 356	Genetics	
CHEM 461	General Biochemistry	
CHEM 462	Advanced Biochemistry	
NEUR 385	Special Topics in Neuroscience	
NEUR 386	Special Topics in Neuroscience	
NEUR 495	Independent Study in Neuroscience	
PHIL 341	Nature Of Persons	
PSYC 343	Sensation & Perception	
PSYC 345	Learning	
PSYC 351	Cognition	
PSYC 371	Intro to Psychopharmacology	
<b>Total Credits</b>		<b>24</b>

<sup>1</sup> Either NEUR 241 or BIOL 336 may be towards the Neuroscience Certificate. Students will not be permitted to use both courses towards the 24 hours required for the certificate.

<sup>2</sup> Select 16 credits from the list of courses in at least 2 disciplines (and at least 8 credits from departments outside the student's major).

## Courses

### Neuroscience Courses

#### NEUR 222. The Brain: A Neuroscience Primer. (2 Credits)

This course explores how neuroscientists study the human brain and the contemporary issues that arise. Lectures and lab experiences will focus on the tools used to study and understand the brain and their impact on understanding human thought, behavior, and emotion. Morning sessions will include lectures and seminar discussions that examine how the central nervous system is understood and related cultural/philosophical issues. Afternoon sessions will involve work with neural specimens, tissue, and other neuroscience lab techniques. (Open to Wheaton College Summer Institute students only)

#### NEUR 241. Foundations of Neuroscience. (4 Credits)

This course is an overview of the basic structure and function of the nervous system. Emphasis is placed on divisions of the nervous system, neural development, cellular and molecular systems and neurophysiology. Two lectures, three hours laboratory. Lab fee.

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#### NEUR 369. Neuroscience Research Techniques. (2 Credits)

A junior/senior level course where students are trained in the use of various neuroscience research techniques and methodology. Prerequisite: NEUR 241 or BIOL 339; and PSYC 269 or BIOL 252; or consent of instructor. Additional course fee required: \$85.

#### NEUR 385. Special Topics in Neuroscience. (2 Credits)

Seminars or courses in special areas offered at discretion of the program. Prerequisites: NEUR 241 or BIOL 336 or consent of the instructor.

#### NEUR 386. Special Topics in Neuroscience. (4 Credits)

Seminars or courses in special areas offered at discretion of the program. Prerequisites: NEUR 241 or BIOL 336 or consent of the instructor.

#### NEUR 494. Neuroscience Capstone. (2 Credits)

A junior/senior level course with an interdisciplinary research component is developed as the culmination of a certificate. Students will develop a research study using tools from multiple disciplines to answer a question related to the field of neuroscience. Prerequisite NEUR 369.

#### NEUR 495. Independent Study in Neuroscience. (1 to 4 Credits)

Individual library or experimental research carried on under the supervision of a faculty member approved by the Neuroscience Program Coordinator.