

# NEUROSCIENCE, CERTIFICATE

Understanding the intricate correlations between neural mechanisms and behavior is an important area of contemporary scientific research. The Certificate in Neuroscience is a 4-course, 4 course unit program of study that allows you to explore biological, psychological and clinical approaches to understand the nervous system as the biological basis of behavior. You apply studies in cognitive neuroscience, neurochemistry, and psychology as a basis for a better understanding of human behavior, focusing on areas including perception, memory, motivation, and emotion.

Penn LPS Online courses in the Certificate in Neuroscience are offered on an accelerated (8-week) schedule. Courses in the certificate program are largely asynchronous with some optional synchronous sessions to be scheduled by the instructors. For more information about specific course dates, please visit the Course Schedule (<https://lpsonline.sas.upenn.edu/academics/course-schedule/>) page.

You have the option to enroll in individual courses without committing to the entire certificate, enjoying the flexibility and expertise offered by Penn LPS Online to suit your schedule and interests.

## The Certificate in Neuroscience prepares you to:

- Describe the structure and function of the vertebrate nervous system and its application to the neurobiology of behavior
- Understand the structures and functions of neurochemicals that are generated by and modulate the nervous system
- Examine the various roles played by the nervous and endocrine systems in controlling physiological processes and behavior, with a focus on sexual and parental behaviors, aggression, and ingestion
- Understand the form, function, and pathology of the adult nervous system in terms of antecedent development processes
- Critically evaluate research strategies and hypotheses in neuroanatomy, neurophysiology, neurochemistry, and neuropharmacology to understand psychiatric disorders from a biological perspective

**For more information:** <https://lpsonline.sas.upenn.edu/academics/certificates/neuroscience> (<https://lpsonline.sas.upenn.edu/academics/certificates/neuroscience/>)

## Curriculum

Certificate students and individual course takers must first complete Introduction to Neuroscience. Certificate students must complete three additional courses from the list below to earn the Certificate in Neuroscience. Students who have earned a Basic Certificate can then earn an Advanced Certificate in Neuroscience by taking an additional two NEUR courses.

Code	Title	Course Units
<b>Neuroscience Certificate</b>		
<i>Required</i>		
NEUR 1000	Introduction to Neuroscience	1
<i>Select 3 additional NEUR courses for a basic certificate *</i>		3
NEUR 1600	The Neuroscience of Music	
NEUR 2000	Behavioral Neuroscience	

NEUR 2600	Hormones,Brain,Behavior	
NEUR 2800	Autonomic Pharmacology	
NEUR 4000	Psychopharmacology	
Any course with Attribute = BCNR ( <a href="http://catalog.upenn.edu/attributes/bcnr/">http://catalog.upenn.edu/attributes/bcnr/</a> )		
<b>Total Course Units</b>		<b>4</b>

\* Students who complete the basic certificate may pursue an advanced certificate by adding two additional neuroscience courses.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2024 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.