SYSTEMS NEUROSCIENCE, B.S.

Seven Penn State campuses are scheduled for closure after Spring 2027: DuBois, Fayette, New Kensington, Mont Alto, Shenango, Wilkes-Barre, and York. New students are not being admitted at these campuses.

Begin Campus: Any Penn State Campus

End Campus: University Park

Program Description

The Bachelor of Science in Systems Neuroscience provides a rigorous interdisciplinary foundation in the study of the nervous system. Students will explore how the brain and nervous system function at all levels, from molecules and cells to behavior, cognition, and disease. Core coursework covers fundamental principles of neuroscience, including cellular and molecular neurobiology, neuroanatomy, and neurophysiology, and how these principles apply to neural systems that govern processes ranging from sensation and movement to behavior and complex cognition.
A special focus will be placed on understanding how neural systems are involved in neurological dysfunction and disorders. The Systems Neuroscience Major is designed to promote scholarly and professional growth.

What is Systems Neuroscience?

Systems Neuroscience is the scientific study of how the brain and nervous system operate across different levels—from molecules and cells to neural circuits, behavior, and cognition. This interdisciplinary field explores how neural systems control everything from basic sensory and motor functions to complex processes such as learning, decision-making, and emotion. It also examines how disruptions in these systems contribute to neurological and psychiatric disorders.

You Might Like This Program If...

- You are fascinated by the brain and how it gives rise to thought, behavior, and emotion.
- You want to understand how neurons and neural circuits work together to produce complex functions.
- You are interested in studying neuroscience across multiple levels—from molecules to behavior.
- You want to explore the biological basis of neurological and psychiatric conditions.
- You plan to pursue a career or advanced study in neuroscience, medicine, biomedical research, or a related health science field.