

# NEUROSCIENCE (NEU)

## NEU 211 Introduction to Neuroscience (3 Credits)

*Arts & Sciences*

Cross-listed with BIO 211

Foundations of neurobiology beginning with cellular neurobiology, moving on to integrative systems and ending with higher brain functions. Emphasizes understanding of nervous system operation. Lectures, discussion and demonstrations.

Shared Competencies: Scientific Inquiry and Research Skills (<https://coursecatalog.syracuse.edu/shared-competencies/scientific-inquiry-and-research-skills/>)

## NEU 223 Introduction to Cognitive Neuroscience (3 Credits)

*Arts & Sciences*

Cross-listed with PSY 223

The science of how thought processes are instantiated in the brain. Functional neuroanatomy, cognitive neuroscience methods, and cognitive neuroscience theory in broad cognitive areas such as attention, perception, memory, language, and decision-making.

Prereq: PSY 205 or PSY 209

Shared Competencies: Scientific Inquiry and Research Skills (<https://coursecatalog.syracuse.edu/shared-competencies/scientific-inquiry-and-research-skills/>)

## NEU 300 Selected Topics (1-6 Credits)

*Arts & Sciences*

Exploration of a topic (to be determined) not covered by the standard curriculum but of interest to faculty and students in a particular semester.

Repeatable

## NEU 301 Introduction to Cognitive Science (3 Credits)

*Arts & Sciences*

Cross-listed with COG 301

Concepts and methods in the study and explanation of cognition. Knowledge that underlies such abilities as vision, language use, and problem solving. How it is represented and used. Comparison of methods in different disciplines studying cognition.

## NEU 340 Behavioral Neuroscience (3 Credits)

*Arts & Sciences*

An in-depth introduction to the field of behavioral neuroscience, which develops a comprehensive understanding of how the brain and nervous system influence a wide range of behaviors, from basic physiological processes to complex cognitive functions. Topics covered include sleep, reproduction, eating, drinking, emotion, and psychological disorders.

Prereq: NEU 211

## NEU 365 Systems Neuroscience (3 Credits)

*Arts & Sciences*

This course will examine neurobiological phenomena from a systems perspective. The objective of this course is to provide a contemporary understanding of the structure and function of neural systems forming the bases for sensation, movement, emotion, and homeostasis. The course is a comprehensive survey of auditory, visual, somatosensory, motor, autonomic, limbic, and neuroendocrine systems. By the end of the course, students should have a fundamental knowledge of the anatomy, biochemistry, physiology and function of each of the systems.

Prereq: NEU 211 and NEU 223

## NEU 380 International Course (1-6 Credits)

*Arts & Sciences*

Offered through SUAbroad by educational institution outside the United States. Student registers for the course at the foreign institution and is graded according to that institution's practice. SUAbroad works with the S.U. academic department to assign the appropriate course level, title, and grade for the student's transcript.

Repeatable

## NEU 407 Advanced Neuroscience (3 Credits)

*Arts & Sciences*

Cross-listed with BIO 407

Double-numbered with BIO 607, NEU 607

Detailed analysis of the anatomy, physiology, and chemistry of the nervous system and behaviors that it mediates. Topics include: neurons and electrochemical properties of neurons, sensory and motor systems, homeostasis, sleep, consciousness, learning, and memory. Additional work required of graduate students.

Prereq: BIO 211 or NEU 211

Shared Competencies: Critical and Creative Thinking (<https://coursecatalog.syracuse.edu/shared-competencies/critical-and-creative-thinking/>)

## NEU 409 Cognitive Neuroscience of Speech and Language (3 Credits)

*Arts & Sciences*

Cross-listed with CSD 409

Double-numbered with CSD 609

Neuroanatomical and neurophysiological aspects of speech and language. Role of central and peripheral nervous system in normal speech and language activities. Additional work required of graduate students.

Shared Competencies: Critical and Creative Thinking (<https://coursecatalog.syracuse.edu/shared-competencies/critical-and-creative-thinking/>)

## NEU 490 Independent Study (1-6 Credits)

*Arts & Sciences*

Exploration of a problem, or problems, in depth. Individual independent study upon a plan submitted by the student. Admission by consent of supervising instructor(s) and the department.

Repeatable

## NEU 496 Neuroscience and Society (3 Credits)

*Arts & Sciences*

Capstone course offered by the College of Arts & Sciences for the Integrated Neuroscience major. Learn how to translate your knowledge in neuroscience from laboratory bench to neurological patients' bedside and help problems in society. Permission of instructor.

Prereq: BIO/NEU 211 or PSY/NEU 223

Shared Competencies: Critical and Creative Thinking (<https://coursecatalog.syracuse.edu/shared-competencies/critical-and-creative-thinking/>)

## NEU 499 Honors Capstone Project (1-6 Credits)

*Arts & Sciences*

Completion of an Honors Capstone Project under the supervision of a faculty member.