

NEUROSCIENCE (NEUROSCI)

NEUROSCI 202-0 Cellular and Molecular Neuroscience (1 Unit)

Introduction to principles governing nervous system function at the cellular and molecular level. May not receive credit for both NEUROSCI 202-0 and BIOL_SCI 302-0. Prerequisite: BIOL_SCI 217-0.

Natural Sciences Distro Area

NEUROSCI 206-0 Systems and Behavioral Neuroscience (1 Unit)

Introduction to the organization and function of brain systems and their role in generating behavior. May not receive credit for both this course and the former NEUROSCI 306-0/BIOL_SCI 306-0. Prerequisite: NEUROSCI 202-0 or NEUROSCI 311-0 or BIOL_SCI 302-0. *Natural Sciences Distro Area*

NEUROSCI 303-0 Molecular Mechanisms of Neuropsychopharmacology (1 Unit)

Advanced seminar focusing on molecular mechanisms and aberrations of synaptic signal transduction and drugs that target them. Prerequisite: NEUROSCI 202-0 or NEUROSCI 311-0 or BIOL_SCI 302-0.

NEUROSCI 304-0 Developmental Neurobiology (1 Unit)

Embryology and cellular/molecular mechanisms of nervous system development. Topics include patterning of the early nervous system, neurogenesis, neuronal differentiation, wiring of neural circuits, activity and experience-dependent development and sex differences in early and late development. May not receive credit for both this course and the former BIOL_SCI 304-0. Prerequisites: BIOL_SCI 215-0; and NEUROSCI 202-0 or NEUROSCI 311-0 or BIOL_SCI 302-0.

NEUROSCI 311-0 Biophysical Analysis of Neurons for ISP (1 Unit)

Emphasis on quantitative, electrophysiological studies of the nervous system at the level of single neurons. The course examines in detail the mechanisms that permit nerve cells to generate and propagate electrical signals and to communicate these signals chemically to other cells. Prerequisites: Any biology class; and ISP major or Neuroscience major may request permission.

NEUROSCI 320-0 Animal Behavior (1 Unit)

Animal behavior from the neuroscience perspective. Neurobiological bases of foraging, communication, migration, predator-prey interactions, mating, and parental care. Prerequisites: NEUROSCI 202-0 and NEUROSCI 206-0; or NEUROSCI 311-0 and NEUROSCI 206-0; or BIOL_SCI 302-0. *Natural Sciences Distro Area*

NEUROSCI 324-0 Neurobiology of Biological Clocks and Sleep (1 Unit)

General properties of sleep and circadian rhythms; how sleep and the circadian clock regulate a number of diverse activities at the cell, organ, and organism levels. May not receive credit for both this course and the former BIOL_SCI 324-0. Prerequisite: NEUROSCI 202-0 or NEUROSCI 311-0.

NEUROSCI 326-0 Neurobiology of Learning and Memory (1 Unit)

Molecular and neural bases of memory. Taught with BIOL_SCI 326-0; may not receive credit for both courses. Prerequisites: NEUROSCI 202-0 and NEUROSCI 206-0; or NEUROSCI 311-0 and NEUROSCI 206-0; or BIOL_SCI 302-0.

NEUROSCI 350-0 Advanced Neurophysiology Laboratory (1 Unit)

Learn to record electrophysiological signals (action potentials and post synaptic potentials) from living neural systems using amplifiers and recording equipment commonly found in research labs around the world. Prerequisites: NEUROSCI 202-0 and NEUROSCI 206-0; or

NEUROSCI 311-0 and NEUROSCI 206-0; or BIOL_SCI 302-0; and consent of instructor.

NEUROSCI 355-0 Neurogenetics of Behavior Laboratory (1 Unit)

Project-based laboratory investigating the genetic basis of behavior in a simple model system; molecular genetic techniques used in neurobiology. Prerequisites: NEUROSCI 202-0 and NEUROSCI 206-0; or NEUROSCI 311-0 and NEUROSCI 206-0; or BIOL_SCI 302-0.

NEUROSCI 360-0 Neuroscience of Brain Disorders (1 Unit) Survey of brain disorders such as neurodegenerative diseases, developmental disorders, narcolepsy, and migraine. Trace progress from the laboratory to the clinic, evaluate the state of knowledge and understand future directions. Strongly recommend review of basic genetics and molecular biology. Prerequisites: NEUROSCI 202-0 and NEUROSCI 206-0; or NEUROSCI 311-0 and NEUROSCI 206-0; or BIOL_SCI 302-0. *Natural Sciences Distro Area*

NEUROSCI 377-0 Neurobiology of Sensation and Perception (1 Unit)

Analysis of the key concepts underlying the neurobiological mechanisms of vision, hearing, taste, smell, touch, and pain. Neural pathways leading to perception and processing of stimuli will also be discussed. Prerequisite: NEUROSCI 202-0 or NEUROSCI 311-0 or BIOL_SCI 302-0. *Natural Sciences Distro Area*

NEUROSCI 390-0 Topics in Neuroscience (1 Unit) Special Topics in Neuroscience. Topics to be announced. Prerequisites vary. May be repeated for credit with different topic. With approval of the director of undergraduate studies, may be used to fulfill a Neuroscience elective or serve as an Allied Field course. Prerequisites: NEUROSCI 202-0 and other specific prerequisites as set by instructors.

NEUROSCI 398-0 Senior Thesis Seminar (1 Unit) Instruction in writing a scientific thesis, discussion of student projects, instructor and peer feedback on thesis drafts, and continued independent research. Open to seniors pursuing departmental honors. With the approval of the director of undergraduate studies.

NEUROSCI 399-0 Independent Study in Neuroscience (1 Unit)

Supervised laboratory or methods research with a faculty member. With approval of the director of undergraduate studies.