

NEUROSCIENCE (NEUROSCI)

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 embryo and nervous system, neurogenesis, neuronal differentiation and cell fate specification, axon guidance and wiring of neural circuits, and activity-, experience-, and sex-dependent neurodevelopment. May not receive credit for both this course and the former BIOL_SCI 304-0.

Prerequisites: BIOL_SCI 215-0 or BIOL_SCI 201-0; and NEUROSCI 202-0 or NEUROSCI 311-0 or BIOL_SCI 302-0. May not receive credit for both BIOL_SCI 215-0 and BIOL_SCI 201-0.

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

This course provides an introduction to neurobiology from an electrophysiological perspective, with an emphasis on ion channel biophysics, quantitative electrical properties of neurons, synaptic physiology, and sensory transduction. Its goal is to provide a basis for understanding how information is encoded, transmitted, and decoded in brains, as well as offer an introduction to reading scientific literature.

Prerequisite: ISP Majors Only or Neuroscience Major with permission of the Neuroscience Director of Undergraduate Studies. Some facility with simple equations and graphing is suggested.

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 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