Neuroscience Courses

**NSCI:4353 Neurophysiology: Cells and Systems  3-4 s.h.**
Physiological properties of nerve cells, nervous systems; axonal conduction, synaptic transmission, sensory transduction, integrative processes, higher functions. Prerequisites: (BIOL:2753 or BIOL:3253) and (MATH:1460 or MATH:1380 or MATH:1550 or MATH:1850) and (PHYS:1511 and PHYS:1512) or (PHYS:1611 and PHYS:1612). Same as BIOL:4353.

**NSCI:5161 Undergraduate Research in Neuroscience  arr.**
Experimental research under faculty supervision.

**NSCI:5210 Fundamentals of Behavioral Neuroscience  3-4 s.h.**
Concepts, methods, and findings in behavioral and cognitive neurosciences; emphasis on principles of neuroscience, sensation, motivation, emotion. Same as PSY:5210.

**NSCI:5212 Foundations in Behavioral and Cognitive Neuroscience  4 s.h.**
Concepts, methods, and findings in behavioral and cognitive neurosciences. Prerequisites: BIOL:3253 or PSY:5210 or NSCI:5210. Same as PSY:5212.

**NSCI:5365 Seminar: Neuropsychology and Neuroscience arr.**
Clinical neuropsychology and cognitive neuroscience: cutting-edge research from scientific journals, case presentations in clinical neuropsychology, and current research. Same as NEUR:5365, PSY:5365.

**NSCI:5653 Fundamental Neurobiology  3 s.h.**
Neurobiology from molecular/cellular to systems levels, including cell biology of the neuron; membrane electrophysiology; synaptic transmission and plasticity, functional neuroanatomy, peripheral and CNS sensory systems, peripheral and CNS motor systems, autonomic systems, emotion, memory, sleep, language, attention and cognition, neuronal development. Same as BIOL:5653, PSY:5203.

**NSCI:5658 Fundamental Neurobiology Discussion  1 s.h.**
Discussion of selected papers, including classics from neurobiology literature; coordinated with BIOL:5653 lecture material. Same as BIOL:5658, PSY:5204.

**NSCI:5753 Developmental Neuroscience  1 s.h.**
Neural induction and nervous system patterning; neurogenesis, axon, and dendrite outgrowth and targeting; synapse formation, specificity, refinement; mechanisms of neuronal cell death; myelination; neural stem cells; introduction to cellular, molecular, and genetic techniques in studies of neural development. Prerequisites: BIOL:5653. Same as BIOL:5753.

**NSCI:6209 Steroid Receptor Signaling  1 s.h.**
Structure-function relationship and genomic and nongenomic actions of the steroid hormone receptor family; basis for actions of novel new ligands on these receptors. Offered spring semesters of even years. Same as MPB:6209, PCOL:6209.

**NSCI:6240 Topics in Cognitive Neuroscience  1-3 s.h.**
Key topics in the neural basis of human cognition; research literature. Recommendations: graduate courses in basic neuroscience and cognitive psychology. Same as NEUR:6240.

**NSCI:6250 Functional Magnetic Resonance Imaging  2-3 s.h.**
Basic physics principles of functional magnetic resonance imaging and approaches to data acquisition, including BOLD imaging, arterial spin labeling, and magnetic source imaging; data analysis strategies; paradigm design and development.

**NSCI:6265 Neuroscience Seminar  0-1 s.h.**

**NSCI:7235 Neurobiology of Disease  3 s.h.**
Broad, thematic understanding of disease mechanisms in neurological disorders.

**NSCI:7301 Directed Study in Neuroscience  arr.**

**NSCI:7305 Neuroscience Research  arr.**
Requirements: neuroscience graduate standing.