

BEHAVIORAL NEUROSCIENCE (NEUR)

NEUR 305 | CELLULAR AND MOLECULAR NEUROSCIENCE

Units: 3 Repeatability: No

Prerequisites: PSYC 342 with a minimum grade of C- and BIOL 242 with a minimum grade of C- and BIOL 242L and BIOL 240 with a minimum grade of C- and BIOL 240L

This course will discuss fundamental concepts in neuroscience, including the structure and function of the nervous system in humans and animals, brain cell biology, the biophysics of membrane potential, action potential generation and propagation, cell signaling, neurotransmitter systems, and neural circuits.

NEUR 310 | BEHAVIORAL NEUROSCIENCE

Units: 3 Repeatability: No

Prerequisites: NEUR 305 with a minimum grade of C- and BIOL 242 with a minimum grade of C- and BIOL 242L and BIOL 240 with a minimum grade of C- and BIOL 240L

This course will explore the biological basis of human and animal behavior, with a focus on neural structures and function. Topics will include neural cell physiology, neurotransmitters and receptors, the development of the nervous system, sensory and motor systems, and the biological bases of learning and memory.

NEUR 372 | CLINICAL NEUROSCIENCE

Units: 3 Repeatability: No

Non-Core Attributes: Community Engagement

Prerequisites: PSYC 342

The goal of this course is to extend our understanding of the nervous system to the examination of the biological dimensions of neurological diseases and disorders. Students will have the opportunity to apply basic knowledge about the nervous system in order to make sense of actual clinical case studies. Topics will explore normal and abnormal functioning of the nervous system related to sensory and motor systems, language, vision, physiology, hormones and circadian rhythms, development, and neurodegeneration.

NEUR 411 | BEHAVIORAL NEUROSCIENCE OF SLEEP

Units: 3 Repeatability: No

Prerequisites: PSYC 342

We spend about a third of our lives asleep, but know little about sleep in comparison to other vital behaviors. Even though many questions remain, a fair amount of detail has been discovered through research and medical cases. In this class, we'll learn about the different stages of sleep and their accompanying characteristics, the brain areas and neural chemicals involved, control processes, sleep disorders, as well as the functions of sleeping and dreaming.

NEUR 470 | ADVANCED RESEARCH METHODS BEHAVIORAL NEUROSCIENCE CAPSTONE

Units: 4 Repeatability: No

Core Attributes: Advanced writing competency, Advanced Integration, Oral communication competency

Prerequisites: (FYW 150 or CORE 2CFYW) and PSYC 101 and (PSYC 230 with a minimum grade of C- or PSYC 300 with a minimum grade of C-) and PSYC 260 and PSYC 342 and NEUR 310 (Can be taken Concurrently)

In the capstone course, senior Behavioral Neuroscience majors will integrate what they have learned in their previous classes. In this particular class, we will take a more hands-on approach by conducting neuroanatomy, behavioral and neurophysiology experiments. In addition to these experimental modules we will explore behavioral neuroscience by reading and critiquing empirical literature and the methodology used to investigate issues in behavioral neuroscience. The course will involve the discussion and application of research methods and statistics concepts through course content and the completion of a research project (extensive reading of the empirical literature, designing an experimental study, and collecting and analyzing data); writing and revising a scientific research paper; and orally communicating the project in a presentation.

NEUR 475 | RESEARCH METHODS IN CONDITIONING AND LEARNING

Units: 3 Repeatability: No

Prerequisites: PSYC 101 and (PSYC 230 with a minimum grade of C- or PSYC 300 with a minimum grade of C-) and PSYC 260 and PSYC 332

NEUR 475 will provide the opportunity for psychology and behavioral neuroscience majors to gain hands-on experience with laboratory techniques in learning. In this 3-unit course, students will study the empirical literature and methodology used to investigate issues in learning in a seminar-style setting. Additionally, students will have the opportunity to practice the research methods and statistical concepts through a series of laboratory modules in classical conditioning, operant conditioning, and spatial navigation using human and nonhuman animal subjects. Students enrolled in NEUR 475 and PSYC 475 will meet together for reading, discussion, and laboratory activities. NEUR 475 will NOT include the major research project or oral presentation, and students will not earn the core attributes of advanced writing. The option of NEUR 475 is provided for students who would like to gain experience with research methodology in human and non-human animal learning, but who plan to complete their core requirements elsewhere. Students may not receive credit for taking both NEUR 475 and PSYC 475.

NEUR 492 | MAJOR FIELD TEST

Units: 0 Repeatability: No

As part of the department's assessment program, each graduating senior is required to take a major field test in psychology and senior exit survey. A student who fails to do so may be restricted from graduating.

NEUR 494 | SPECIAL TOPICS IN BEHAVIORAL NEUROSCIENCE

Units: 0.5-4 Repeatability: Yes (Repeatable if topic differs)

Prerequisites: PSYC 342 with a minimum grade of D+

The purpose of this course is to provide the advanced undergraduate student with an opportunity to explore a variety of contemporary topics in behavioral neuroscience. These will be in-depth investigations on subjects of special interest to the instructor. Course may be repeated with different topics. Junior standing; additional prerequisites vary with topic and/or instructor.

NEUR 496 | RESEARCH EXPERIENCE

Units: 1-2 Repeatability: Yes (Can be repeated for Credit)

Non-Core Attributes: Experiential

Experience in serving as a researcher in a project conducted by a faculty member. By invitation. May be repeated for a maximum of six units. P/F only.

NEUR 499 | INDEPENDENT STUDY

Units: 1-3 Repeatability: Yes (Can be repeated for Credit)

Prerequisites: NEUR 310

Library, laboratory, or field research of the student's own design conducted under faculty supervision. A written application and final report are required. Senior standing preferred.