BEHAVIORAL NEUROSCIENCE COURSES (NEUR)

Courses

**NEUR 305 | CELLULAR AND MOLECULAR NEUROSCIENCE**
Units: 3
Prerequisites: BIOL 190 and BIOL 225 and BIOL 225L and PSYC 101 and PSYC 230 and PSYC 342
This course explores the major areas of cellular and molecular neuroscience with a strong focus on basic principles of cellular neuroscience, including the biophysical basis of the membrane potential, action potential generation and propagation, axon guidance, neuronal cell biology, synapse formation and neural plasticity. At the molecular level the course will delve into structure of ion channels and receptors and molecular mechanisms underlying these cellular processes.

**NEUR 310 | BEHAVIORAL NEUROSCIENCE**
Units: 3
Prerequisites: BIOL 190 and BIOL 225 and BIOL 225L and PSYC 101 and PSYC 230 and PSYC 342
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 410W | ADVANCED RESEARCH METHODS / LABORATORY IN BEHAVIORAL NEUROSCIENCE**
Units: 3
Prerequisites: ENGL 121 and PSYC 101 and PSYC 230 and PSYC 260 and PSYC 342 and NEUR 310 (Can be taken Concurrently)
This course is designed to provide in-depth, hands-on experience with the concepts, methods, and techniques used in behavioral neuroscience research, including anatomical and histological methods, and surgical and pharmacological manipulations. Written project reports, as well as a literature review and research proposal, will be required.

**NEUR 470 | ADVANCED RESEARCH METHODS BEHAVIORAL NEUROSCIENCE CAPSTONE**
Units: 4 Repeatability: No
Prerequisites: ENGL 121 and PSYC 101 and PSYC 230 and PSYC 260 and PSYC 342 (Can be taken Concurrently) and NEUR 310
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, APA style research paper; and orally communicating the project in a presentation.

**NEUR 492 | MAJOR FIELD TEST**
Units: 0
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 (NEUR 492). A student who fails to do so may be restricted from graduating.

**NEUR 494 | SPECIAL TOPICS IN BEHAVIORAL NEUROSCIENCE**
Units: 3-4 Repeatability: Yes (Repeatable if topic differs)
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)
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.