NEU - NEUROSCIENCE

NEU 205 Introduction to Neurobiology (3 Credit Hours)
Introduction to Neurobiology NEU 205 (and NEU 205L) describes how the nervous system works from a molecular and cellular perspective. The course covers such topics as ion transport and membrane potentials, synaptic transmission and plasticity, and stimulus transduction. Special emphasis is placed on seminal and recent neuroscience research as examples of fundamental concepts.
Academic Level: Undergraduate
Corequisites: NEU 205L

NEU 205L Intro to Neurobiology Lab (1 Credit Hours)
Academic Level: Undergraduate
Corequisites: NEU 205

NEU 210 The Brain:Exam of Nervous Sys (4 Credit Hours)
This is an in depth examination of the mammalian nervous system, emphasizing the structural and functional organization of the human brain. Topics include the function of nerve cells, synaptic transmission, sensory systems, control of movement and speech, learning and memory, emotion, and diseases of the brain.
May be repeated for credit.
Academic Level: Undergraduate
Corequisites: NEU 210L

NEU 210L The Brain:Exam/Nerv Sys Lab
Academic Level: Undergraduate
Corequisites: NEU 210

NEU 300 Neuroscience Internship (3-12 Credit Hours)
An internship is a high impact learning experience where knowledge and theory derived from students' program of study are integrated with shadowing, volunteering or paid employment with a private company, not-for-profit organization or government agency toward the intentional development of transferable knowledge, skills and abilities and practical application of professional competencies. The semester prior to the internship, the internship coordinator assists students with preparing their application materials and searching and applying for neuroscience-related internships within the local community, stateside or abroad, as well as in defining learning objectives, educational and career goals, and professional deliverables to be met throughout the course of training and practice. During the semester of the internship course, under the mentorship of a dedicated professional who has the education and/or background and expertise of the students' discipline of study, students immerse in a remote, hybrid or in-person professional setting. Through guidance, support and regular feedback from the mentor and internship course instructor, students strive to satisfactorily learn and practice their internship position and achieve their learning objectives. Students follow a course curriculum including: 40 contact hours at the host site per credit hour registered; participation in classes; timely completion of homework assignments in support of student learning outcomes, professional readiness and career exploration; and end of semester evaluations. Internships culminate in a letter grade determined by the above criteria.
Academic Level: Undergraduate
Enrollment limited to students with the UG Internships attribute.

NEU 306 Behavioral/Cognitive Neuro (3 Credit Hours)
This is an in depth examination of the mammalian nervous system, emphasizing the structural and functional organization of the human brain. Topics include the sensory systems, control of movement and speech, motivation, learning and memory, emotion, cognition, and diseases of the brain. This is a required course for the neuroscience major and an elective for the animal behavior and psychology majors.
Academic Level: Undergraduate
Corequisites: NEU 306L

NEU 306L Behavioral/Cognitive Neuro Lab (1 Credit Hours)
Academic Level: Undergraduate
Corequisites: NEU 306

NEU 320 Principles of Neurobiology (3 Credit Hours)
Students in this course will learn how the nervous system works from a molecular and cellular perspective. The course covers in detail such topics as ion transport and membrane potentials, synaptic transmission and plasticity, and stimulus transduction. Special emphasis is placed on seminal and recent neuroscience research as examples of fundamental concepts.
May be repeated for credit.
Academic Level: Undergraduate

NEU 374 Medical Neuroanatomy (4 Credit Hours)
This course examines the structure and function of the human central and peripheral nervous system, with a particular focus on the medical conditions that result due to injury or dysfunction to particular nervous system structures. Initial topics include cellular physiology, nervous system development, nervous system anatomy, vascular components, and protective structures. This is followed by more specific study of various nervous system processes, principally those involving sensation and movement. Labs and case studies are integrated with the lecture throughout the semester. The purpose of the lab exercises is to introduce students to anatomical models of the nervous system, so that they may strengthen their understanding of nervous system anatomy. The case study learning activities mimic scenarios that may arise in the medical setting and involve solving problems related to the more difficult concepts in the course.
Academic Level: Undergraduate

NEU 410 Neurobiology of Mental Illness (3 Credit Hours)
This course is a comprehensive and interdisciplinary analysis of mental disorders such as schizophrenia, bipolar disorder, major depression, and the anxiety disorders. Topics include clinical molecular genetics, structrual brain pathology, in vivo imaging and neurocircuitry, post mortem analysis, neurochemistry, cognition and behavior, and pharmacotherapy.
Academic Level: Undergraduate
Enrollment is limited to students with a program in Neuroscience.

NEU 495 Neuroscience Lab Research (1-9 Credit Hours)
The goal of the course is to offer practice in devising scientific hypotheses, conducting experiments to test these hypotheses and analysis of the results of these experiments. By being personally responsible for research progress, students will learn the scientific method and gain experience in scientific communication. Along with experimental research, another part of this course will be a journal club. Assigned readings may be very recent or foundational readings from the past. Journal clubs are common in graduate schools and medical schools and are one of the best ways to become scientifically knowledgeable in a topic. In this case, the topic will be the field of research in which you are engaged. The discussion of journal articles will enhance your understanding of the greater scientific context of the laboratory research you are undertaking.
May be repeated for credit.
Academic Level: Undergraduate
Enrollment is limited to students with a program in Neuroscience.

Enrollment limited to students with the UG Research attribute.

NEU 506 Behavioral & Cognitive Neuro (4 Credit Hours)
This is an in-depth examination of the mammalian nervous system, emphasizing the structural and functional organization of the human brain. Topics include the sensory systems, control of movement a d speech, motivation, learning and memory, emotion, cognition, and diseases of the brain.
Academic Level: Graduate

NEU 520 Principles of Neurobiology (3 Credit Hours)
Principles of Neurobiology describes how the nervous system works from a molecular and cellular perspective. The course covers in detail such topics as ion transport and membrane potentials, synaptic transmission and plasticity, and stimulus transduction. Special emphasis is placed on seminal and recent neuroscience research as examples of fundamental concepts. Graduate students will complete an especially rigorous research paper presentation assignment.
Academic Level: Graduate
Enrollment is limited to Graduate level students.