

# NEUR - NEUROSCIENCE

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## NEUR200 Introduction to Neuroscience (3 Credits)

In an evolutionary sense, the job of the nervous system is to produce, control, and coordinate behaviors that help an animal survive and reproduce. Neuroscience is the study of how the nervous system does that. Provides a broad introduction to neuroscience, always keeping the behavioral consequences in view.

**Prerequisite:** Minimum grade of C- in BSCI170.

**Cross-listed with:** PSYC202.

**Credit Only Granted for:** PSYC309U, NEUR200, PSYC202 or PSYC301.

**Formerly:** PSYC309U.

## NEUR238 Special Topics in Neuroscience Student Initiated Courses (1 Credit)

Student Initiated Course (STIC) in Neuroscience. Course will be student initiated and taught in a "journal club" style under close supervision of a faculty mentor. Student instructor and faculty mentor must generate proposal and have approval of the Neuroscience Program to offer a NEUR238 STIC. NEUR238 cannot be applied to the degree requirements of any neuroscience major.

**Repeatable to:** 5 credits if content differs.

## NEUR305 Neural Systems and Circuits (3 Credits)

Overview of the fundamental principles underlying the systems and circuits of the human nervous system, with a focus on cognitive processes and how these systems interact. Students will engage in the analysis of case studies, apply their knowledge of the neural circuitry to explain everyday phenomena, hypothesize ways to further investigate the nervous system, and propose how knowledge of neural circuits can be used in human society and the resulting implications.

**Prerequisite:** Minimum grade of C- in MATH120 or higher MATH course; and a minimum grade of C- in NEUR200 or BSCI353; or equivalent.

## NEUR306 Cellular and Molecular Neuroscience (3 Credits)

Students will gain an appreciation of neuroscience as the nexus of chemistry, physics, and biology. Additionally, they will gain an understanding of how: both individual and networks of neurons function as variable electrical circuits; our nervous systems transduce signals from the outside world and sets-off molecular cascades; the behavior of a neuron can be changed and or remain the same in response to changing variables. Techniques used to study the nervous system at a cellular and molecular level will be discussed.

**Prerequisite:** 1 course with a minimum grade of C- from NEUR200, BSCI207, BSCI330 or BSCI331.

**Corequisite:** Must have completed or be concurrently enrolled in PHYS132 or equivalent course.

**Cross-listed with:** BSCI353.

**Credit Only Granted for:** NEUR306 or BSCI353.

## NEUR329 Instructional Assistance Practicum (1-3 Credits)

Students serve as instructional assistants in selected undergraduate neuroscience courses. Roles and responsibilities and pre/co-requisites are determined on a course- specific basis and approved by the Program Curriculum Committee.

**Repeatable to:** 9 credits.

**Additional Information:** Course not acceptable toward major requirements in the Neuroscience.

## NEUR379 Special Topics: Research in Neuroscience (1-3 Credits)

Research and/or integrated reading in a topic related to neuroscience, under the direction and close supervision of a member of the University of Maryland faculty.

**Recommended:** At least a 3.0 neuroscience track GPA and no records of academic misconduct.

**Restriction:** Permission of Neuroscience Program.

**Repeatable to:** 12 credits.

## NEUR398 Neuroscience Honors Seminar (1 Credit)

This seminar provides an opportunity for the honors students to share their research projects and sharpen their communication skills through presentations, discussions, and peer-review thesis writing. Guest speakers will be invited to provide additional information and insights into various topics in professional development practice, graduate school info and application, etc.

**Prerequisite:** NEUR200.

**Corequisite:** NEUR379, NEUR479, or equivalent research credit with instructor permission.

**Repeatable to:** 4 credits.

## NEUR405 Neuroscience Laboratory (4 Credits)

Students will utilize neurophysiological techniques to examine fundamental principles of neurons and neural circuits. This course will reinforce content from prerequisite NEUR courses. Students will also strengthen skills in experimental design and scientific writing.

**Prerequisite:** NEUR306 or BSCI353; and PHYS132.

**Recommended:** NEUR305.

**Cross-listed with:** BSCI455.

**Credit Only Granted for:** PSYC401, NEUR405, BSCI455 or BSCI454.

## NEUR479 Advanced Research in Neuroscience (1-3 Credits)

Research and/or integrated reading in neuroscience under the direction and close supervision of a faculty member.

**Prerequisite:** Complete at least 3 credits of NEUR379 (or equivalent) with the same faculty member as NEUR479 credit.

**Recommended:** Minimum neuroscience track GPA of 3.0.

**Restriction:** Permission of the Neuroscience Program.

**Repeatable to:** 12 credits.