

# NEUROSCIENCE (NEUR)

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## **NEUR 101. Introduction to Neuroscience. 1 Credit.**

**Offered Summer Session Only; Lecture hours:3**

An introduction to ideas, concerns, methods and applications in the field of neuroscience as students explore ways that our growing understanding of the nervous system intersects with technology, medicine, and law to impact human existence. Prerequisite: permission of the instructor. Only for BCCSP students.

## **NEUR 217. Psychopharmacology. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:4**

Psychopharmacology, the study of drugs that affect behavior, begins with an appreciation for neurochemical, pharmacological and behavioral principles in order to understand actions and effects of therapeutic compounds and addictive substances, the two major categories of psychopharmacological drugs. Prerequisite: PSYC 100 or permission of the instructor. Crosslisted as PSYC 217.

## **NEUR 248. Developmental Psychobiology. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

Addresses development in humans from conception through adolescence with some comparative analysis with non-humans. Emphasis on both normal and atypical cognitive, neuropsychological and neurobiological development. Prerequisite: PSYC 100. Crosslisted as PSYC 248.

## **NEUR 253. Cellular and Molecular Neurobiology. 1 Credit.**

**Offered Fall Semester Only; Lecture hours:3,Lab:3**

In this course, we will cover the molecular and cellular mechanisms that drive neuronal function, and include topics such as excitable membrane physiology, synaptic transmission, plasticity and learning. The laboratory provides an evaluation of laboratory techniques relevant to neuroscience and analysis of papers. Crosslisted as BIOL 375.

## **NEUR 254. Behavioral Neuroscience. 1 Credit.**

**Offered Spring Semester Only; Lecture hours:3,Recitation:1**

Study of the the functions of the nervous system underlying behavioral, psychological, and cognitive processes in humans and animals. This course assumes prior knowledge in the fundamentals of cellular/molecular neuroscience. Prerequisite: NEUR 253.

## **NEUR 305. Neurodevelopmental Disorders. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

Examines the genomic, neural, and environmental bases that underlie the development of children with developmental disabilities, including autism spectrum disorders, intellectual disabilities, and specific genetic/genomic syndromes. Takes a developmental psychopathology perspective, highlighting the reciprocal nature of the study of typical and atypical development. Prerequisites: NEUR 248/PSYC 248 and instructor permission. Crosslisted as PSYC 305 and PSYC 605.

## **NEUR 310. Neurophysiology of Wellbeing. 1 Credit.**

**Offered Occasionally; Lecture hours:3,Recitation:1**

We will investigate the neurophysiological systems involved in wellbeing and stress including the autonomic nervous system, the gut-brain axis, and the endocrine system. For this investigation, we will read, analyze, and discuss primary and secondary literature on these topics. Crosslisted as PSYC 341 and PSYC 641.

## **NEUR 312. Biopsychology of Appetite and Obesity. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

Reading and discussion of scholarly research on the neural, physiological, and endocrine signals that influence the psychology of appetite, food reward, eating behavior, and obesity in humans and animal models. Prerequisite: PSYC 250 or NEUR 254. Crosslisted as PSYC 312 and PSYC 612.

## **NEUR 313. Researching Behavioral Neuroscience. 1 Credit.**

**Offered Both Fall and Spring; Lecture hours:3**

Following a general orientation to behavioral genetics and pharmacology using mice, we will conduct group experiments. Each student will then develop and conduct an independent research project. Prerequisites: PSYC 215 or MATH 216 and PSYC 250 or NEUR 254 or permission of instructor. Crosslisted as NEUR 613 and PSYC 313 and PSYC 613.

## **NEUR 321. Neuroethics. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

Students will consider ethical, moral, legal and social implications that come from a growing ability to understand, predict and change human behavior. In a seminar format we'll consider right and wrong use of neuroscientific knowledge in clinical settings, law and criminal justice, national defense, economics, business and education. Crosslisted as PSYC 321 and PSYC 621.

## **NEUR 332. Developmental Neurobiology. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3,Other:3**

Developmental neurobiology with a laboratory section. Topics include: neural cell identity determination and differentiation; axon growth and target selection; formation and plasticity of neural connections; behavioral development. Prerequisites: BIOL 203 and BIOL 204 and permission of the instructor. Crosslisted as BIOL 332 and BIOL 632.

**NEUR 344. Developmental Brain Research. 1 Credit.**

**Offered Spring Semester Only; Lecture hours:3; Repeatable**

Students learn a variety of assessment techniques in developmental neuropsychology and neuroscience (including EEG) and conduct quantitative research culminating in written and oral reports. Crosslisted as PSYC 344 and PSYC 644 and NEUR 644. Prerequisite: permission of the instructor.

**NEUR 360. Honors Thesis. 1 Credit.**

**Offered Both Fall and Spring; Lecture hours:Varies,Other:15; Repeatable**

Prerequisite: permission of the department and permission of the instructor.

**NEUR 368. Social Neuroscience. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3,Other:1**

Study of the brain basis of social behaviors such as bonding and attachment, parental behavior, play, social cognition, and the benefits of social support. We will investigate what is known about social function in the brains of species that have evolved to be social species, including humans. Crosslisted as PSYC 368 and PSYC 668.

**NEUR 399. Undergraduate Research. .5-2 Credits.**

**Offered Either Fall or Spring; Lecture hours:Varies,Other:Varies; Repeatable**

Research on any aspect of neuroscience. Research topics may be posed by students or faculty. Prerequisite: permission of the instructor.

**NEUR 3NT. NEUR Non-traditional Study. 1-2 Credits.**

**Offered Fall, Spring, Summer; Lecture hours:Varies,Other:Varies**

Non-traditional study course in neuroscience. Prerequisite: permission of the instructor.

**NEUR 400. Senior Seminar in Neuroscience. 0 Credits.**

**Offered Spring Semester Only; Lecture hours:.5,Other:.5**

NEUR majors may elect to attend a lecture series in the fall or spring semester to satisfy the Culminating Experience requirement. Students will prepare written reactions to each seminar, graded as pass/fail. Prerequisites: senior status and NEUR majors and permission of the instructor.