

NEUROSCIENCES (NEUROSCI)

NEUROSCI 200 Introduction to Neuroscience. Essential Concepts & Methods (2.5 Units) Fall

Instructor(s): Vikaas Sohal

Prerequisite(s): There are no prerequisites, but permission of instructor in charge is required.

Restrictions: This course is intended for entering first year Ph.D. students in the Neuroscience program. Others may be admitted as space permits.

Activities: Lecture

This course will include lectures on basic methods used for neuroscience research, laboratories that demonstrate these methods and conferences that discuss their applicability and caveats. The course is designed to prepare our entering students for laboratory rotations and the core course. The material presented should also help them understand seminars and journal clubs.

School: Graduate Division

Department: Neuroscience Program

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? Yes

Course Grading Convention: P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? No

NEUROSCI 201A Basic Concepts in Cellular and Molecular Neuroscience (5 Units) Fall

Instructor(s): Kevin Bender, Robert Edwards, Lily Jan, Roger Nicoll, Massimo Scanziani, Vikaas Sohal, Mark Von Zastrow

Prerequisite(s): None.

Restrictions: This course is required for first year Neuroscience students. It is open to additional students as space allows and with the approval of the instructor.

Activities: Lecture, Seminar

An interdisciplinary introduction to fundamental aspects of nervous system function including neurocytology, neuroanatomy, electrical excitability, synaptic transmission, signal transduction, genetics, and neurodevelopment.

School: Graduate Division

Department: Neuroscience Program

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? No

Course Grading Convention: Letter Grade

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? No

NEUROSCI 201B Basic Concepts for Cellular and Developmental Neuroscience (4 Units) Winter

Instructor(s): Jonah Chan, Aimee Kao

Prerequisite(s): None

Restrictions: None

Activities: Seminar, Discussion

Introduction to fundamental aspects of nervous system development, including patterning, neuronal specification and function, glial cells of the nervous system, and application-based molecular/cellular neuroscience methods.

School: Graduate Division

Department: Neuroscience Program

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? No

Course Grading Convention: Letter Grade

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? No

NEUROSCI 201C Introduction to Systems and Behavioral Neuroscience (4 Units) Spring

Instructor(s): Devanand Manoli

Prerequisite(s): NS201A and NS201B or consent of course director.

Restrictions: None.

Activities: Lecture

An overview of basic cell biology and neural development. Topics will include membrane trafficking, neuronal cytoskeleton, axon guidance, synapse formation, cell cycle, neuronal cell fate determination, neuronal stem cells, and patterning of the vertebrate brain.

School: Graduate Division

Department: Neuroscience Program

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? No

Course Grading Convention: Letter Grade

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? No

NEUROSCI 215 Laboratory Rotation (8-12 Units) Fall, Winter, Spring, Summer*Instructor(s):* Staff

Prerequisite(s): Consent of instructor.

Restrictions: none

Activities: Lab science

A laboratory rotation course to familiarize new departmental graduate students with various approaches to neurobiological research.

School: Graduate Division**Department:** Neuroscience Program**May the student choose the instructor for this course?** Yes**Does enrollment in this course require instructor approval?** No**Course Grading Convention:** Letter Grade**Graduate Division course:** Yes**Is this a web-based online course?** No**Is this an Interprofessional Education (IPE) course?** No**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** Yes**Repeat course for credit?** Yes**NEUROSCI 219 Special Topics in Basic and Translational Neuroscience (3 Units) Fall, Winter, Spring***Instructor(s):* Staff

Prerequisite(s): None. Completion of first year curriculum in Neuroscience or another experimental biology graduate program is helpful, but not essential.

Restrictions: Neuroscience graduate students, other graduate and professional students with interest in neuroscience. Permission from instructor is required.

Activities: Lecture, Independent Study

Each course offering will focus on the literature of a current important area of Neuroscience research. Students will be expected to read assigned papers critically before class and to present and discuss papers in class. Students will also be expected to write and present a brief research proposal based upon their reading. Topics in molecular, cellular, developmental, systems & computational neuroscience, and neurological & behavioral disorders will be covered in separate course offerings.

School: Graduate Division**Department:** Neuroscience Program**May the student choose the instructor for this course?** Yes**Does enrollment in this course require instructor approval?** No**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)**Graduate Division course:** Yes**Is this a web-based online course?** No**Is this an Interprofessional Education (IPE) course?** No**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** Yes**Repeat course for credit?** Yes**NEUROSCI 220 Neuroscience Journal Club (1 Units) Fall, Winter, Spring***Instructor(s):* Staff

Prerequisite(s): None

Restrictions: None

Activities: Seminar

Pertinent papers from the recent neuroscience literature are read and discussed. Each student must participate regularly and present one paper per quarter.

School: Graduate Division**Department:** Neuroscience Program**May the student choose the instructor for this course?** Yes**Does enrollment in this course require instructor approval?** No**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)**Graduate Division course:** Yes**Is this a web-based online course?** No**Is this an Interprofessional Education (IPE) course?** No**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** Yes**Repeat course for credit?** Yes**NEUROSCI 221 Current Topics in Neuroscience (1 Units) Fall, Winter, Spring***Instructor(s):* Zachary Knight

Prerequisite(s): None.

Restrictions: Neuroscience graduate student, or permission from instructor.

Activities: Seminar

Students will become familiarized with cutting-edge experimental findings in cellular, molecular, and systems neuroscience by attending the formal Neuroscience Seminar series, meeting and discussing related papers, and meeting with the speaker. Students will be expected to critically analyze new results and put them in context of published literature. Course meets for 10 weeks spread out over 3 quarters. Offered every year.

School: Graduate Division**Department:** Neuroscience Program**May the student choose the instructor for this course?** No**Does enrollment in this course require instructor approval?** No**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)**Graduate Division course:** Yes**Is this a web-based online course?** No**Is this an Interprofessional Education (IPE) course?** No**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** Yes**Repeat course for credit?** No

NEUROSCI 248 Analysis of Neural and Behavioral Data (3 Units) Winter

Instructor(s): Loren Frank

Prerequisite(s): NS201A and 201B or consent of course director. Previous Matlab experience strongly suggested

Restrictions: None.

Activities: Lecture, Independent Study

Lectures, critical discussions, and problem solving using Matlab, a mathematical and data visualization program. Topics may include: probability, descriptive statistics, binomial and poisson processes, analysis of spike trains, and analysis of dynamic neural and behavioral data. Problem sets include statistical analysis and simulation of neural and behavioral data. Previous Matlab experience strongly suggested. Offered every two years beginning Spring 2004

School: Graduate Division

Department: Neuroscience Program

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? No

Course Grading Convention: Letter Grade

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? No

Repeat course for credit? Yes

NEUROSCI 250 Research (1-8 Units) Fall, Winter, Spring, Summer

Instructor(s): Staff

Prerequisite(s): Consent of instructor.

Restrictions: None

Activities: Independent Study, Project, Lab science

Dissertation research.

School: Graduate Division

Department: Neuroscience Program

May the student choose the instructor for this course? Yes

Does enrollment in this course require instructor approval? No

Course Grading Convention: P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? Yes