NEUROSCIENCES (NEUROSCI)

NEUROSCI 200 Introduction to Neuroscience. Essential Concepts & Methods (2.5 Units) Fall
Instructor(s): Vikaas S 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, Laboratory

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

NEUROSCI 201A Basic Concepts in Cellular and Molecular Neuroscience (5 Units) Fall
Instructor(s): Kevin J Bender, Robert H. Edwards, Yuriy Kirichok, Lily Y. Jan, Roger A. Nicoll, Massimo P Scanziani, Vikaas S Sohal, Mark E. 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

NEUROSCI 201B Basic Concepts for Cellular and Developmental Neuroscience (4 Units) Winter
Instructor(s): Jonah R. Chan, Aimee W. 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

NEUROSCI 201C Introduction to Systems and Behavioral Neuroscience (4 Units) Spring
Instructor(s): Devanand S 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

NEUROSCI 202 Neurobiology (5 Units) Spring
Instructor(s): Vikaas S Sohal, Mark E. Von Zastrow
Prerequisite(s): NS200, NS201A, NS201B, or consent of course director.

Restrictions: None

Activities: Lecture, Laboratory

This course will include lectures on advanced 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

NEUROSCI 203 Advanced Concepts in Cellular and Molecular Neuroscience (5 Units) Winter
Instructor(s): Kevin J Bender, Robert H. Edwards, Yuriy Kirichok, Lily Y. Jan, Roger A. Nicoll, Massimo P Scanziani, Vikaas S Sohal, Mark E. Von Zastrow
Prerequisite(s): NS201A and NS201B

Restrictions: None

Activities: Seminar, Discussion

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

School: Graduate Division
Department: Neuroscience Program

NEUROSCI 204 Advanced Concepts for Cellular and Developmental Neuroscience (4 Units) Spring
Instructor(s): Jonah R. Chan, Aimee W. Kao
Prerequisite(s): NS201A and NS201B

Restrictions: None

Activities: Seminar, Discussion

An interdisciplinary introduction to advanced 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

NEUROSCI 205 Advanced Concepts in Systems and Behavioral Neuroscience (4 Units) Fall
Instructor(s): Devanand S Manoli
Prerequisite(s): NS201A and NS201B

Restrictions: None

Activities: Lecture, Seminar

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

School: Graduate Division
Department: Neuroscience Program

NEUROSCI 206 Advanced Concepts for Systems and Behavioral Neuroscience (4 Units) Winter
Instructor(s): Devanand S Manoli
Prerequisite(s): NS201C

Restrictions: None

Activities: Seminar, Discussion

An interdisciplinary introduction to advanced 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 215 Laboratory Rotation (8-12 Units) Fall, Winter, Spring, Summer
Instructor(s): Staff
Prerequisite(s): Consent of instructor.
Restrictions: none
Activities: Laboratory
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 A. 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