

Neuroscience

The Neuroscience PhD Program at UC Berkeley is a unique, diverse PhD training program that offers intensive, integrated training in multiple areas of neuroscience research.

The program includes approximately 65 training faculty from different campus departments, with expertise ranging from molecular and cellular neuroscience to systems and computational neuroscience to human cognitive neuroscience.

We provide a highly interdisciplinary, intellectually dynamic training environment of coursework, research training, professional development, and mentoring, within a strong research program that produces fundamental advances in knowledge and novel techniques.

Admission to the University

Applying for Graduate Admission

Thank you for considering UC Berkeley for graduate study! UC Berkeley offers more than 120 graduate programs representing the breadth and depth of interdisciplinary scholarship. The Graduate Division hosts a complete list (<https://grad.berkeley.edu/admissions/choosing-your-program/list/>) of graduate academic programs, departments, degrees offered, and application deadlines can be found on the Graduate Division website.

Prospective students must submit an online application to be considered for admission, in addition to any supplemental materials specific to the program for which they are applying. The online application and steps to take to apply can be found on the Graduate Division website (<https://grad.berkeley.edu/admissions/steps-to-apply/>).

Admission Requirements

The minimum graduate admission requirements are:

1. A bachelor's degree or recognized equivalent from an accredited institution;
2. A satisfactory scholastic average, usually a minimum grade-point average (GPA) of 3.0 (B) on a 4.0 scale; and
3. Enough undergraduate training to do graduate work in your chosen field.

For a list of requirements to complete your graduate application, please see the Graduate Division's Admissions Requirements page (<https://grad.berkeley.edu/admissions/steps-to-apply/requirements/>). It is also important to check with the program or department of interest, as they may have additional requirements specific to their program of study and degree. Department contact information can be found here (<https://guide.berkeley.edu/archive/2024-25/graduate/degree-programs/>).

Where to apply?

Visit the Berkeley Graduate Division application page (<http://grad.berkeley.edu/admissions/apply/>).

Admission to the Program

Applicants to the program should have a bachelor's degree from a four-year college and at least one year of laboratory experience. The Graduate Record Examination (GRE) General Test is

optional. For more information on our program requirements go to: <https://neuroscience.berkeley.edu/grad/admissions> (<https://neuroscience.berkeley.edu/grad/admissions/>).

Normative Time Requirements

Normative Time to Advancement

Normative time to advancement is 2 years.

Step I: Lab Rotations and Presentations, First Year Classes

During the first year of graduate study, each neuroscience graduate student spends three 10-week periods performing research projects in different faculty laboratories. Rotations allow students to identify the laboratory in which their thesis research will be performed. The goal is also to expose students to different techniques and approaches in neuroscience and to provide training in experimental design, critical analysis of data, and presentation of research findings. Rotation research is graded and receives academic credit. This is accomplished by enrolling in NEU 291A/B, a year-long course, during the rotation year. Also during the first-year students take NEU 210A/B Methods & Career Skills Classes which introduce a broad range of modern neuroscience research methods in didactic lectures and provide advising in initial career skills. NEU 210A (Fall) includes a survey of cutting-edge research methods, advising on how to choose a thesis mentor, training in scientific rigor and reproducibility, and an introduction to the use and misuse of statistics in neuroscience research. NEU 210B (Spring) includes in-depth training on how to give a top-notch scientific talk, advising on how to write effective research papers, and on scientific project management. Additional classes taken during the first year in the program include: at least 2 Foundational Requirement courses, NEU 294 our "Brain Lunch" seminar (more on these below), as well as MCELLBI 293C "Responsible Conduct in Research". MCELLBI 293C is taken during the spring of their first year to ensure that research trainees receive ample training in Responsible Conduct in Research, and to gain an understanding of federal, state, and UC Berkeley policies and resources available to further support their research endeavors.

Step II: Second Year Classes, QUALIFYING EXAM

Students in the second year of study have been placed in a thesis lab and begin enrolling in NEU 292 Neuroscience Graduate Research and NEU 295 Neuroscience Research Review under their research mentor each semester. They additionally complete their Foundational Requirement courses and enroll in NEU 294 our "Brain Lunch" seminar (more on these below). In the Fall of their second year, students begin their professional development in teaching Neuroscience courses which includes enrolling in a one semester 300-level pedagogy course (more on teaching below).

During the spring semester of Year 2, students complete an oral qualifying exam. The examination has three parts: Research Proposal, Related Research Areas, and Foundational Questions in Neuroscience. The research proposal is in the form of a written, NIH-style grant proposal, which is turned in to the committee, and then defended orally. Related Research Areas are identified cooperatively by the student and his/her committee prior to the exam, and are chosen to be complementary to the main research proposal subject. These areas are examined orally. The Foundational Questions in Neuroscience are designed to test broad knowledge in Neuroscience. These are a published list of questions, the same for all students, that are available upon entry to the program. These questions are designed to test basic common knowledge of neuroscience facts and principles, and a subset of them are examined orally during the qualifying exam. During the

exam, students must demonstrate the ability to recognize fundamentally important research problems, propose relevant experimental approaches, and display comprehensive knowledge of appropriate disciplinary areas and related subjects. Students must pass the qualifying examination before advancing to doctoral candidacy.

Normative Time in Candidacy

Normative time in candidacy is 3 years.

Step III: Dissertation

Students undertake research for the PhD dissertation under a four-person committee in charge of their research and dissertation. Students do original research using a wide variety of cutting-edge neuroscience methods. During this time, students must meet at least annually with their thesis committee to discuss dissertation progress, review experimental results, set goals, and ensure students are adhering to appropriate timelines to completion. The students then write a dissertation based on the results of their research.

During their time in candidacy, students continue to enroll in NEU 292 Neuroscience Graduate Research and NEU 295 Neuroscience Research Review under their research mentor each semester and complete any remaining course requirements.

STEP IV: Dissertation Presentation/Formal Exit Seminar

There is no formal defense of the completed dissertation. However, Neuroscience students are required to publicly present a thesis seminar about their dissertation research in their final year. On completion of the research and approval of the dissertation by the committee, the students are awarded the doctorate.

Total Normative Time

Total normative time is 5 years.

Curriculum

Pedagogy, Rotations, Ethics, & Seminar Courses

Students must take all of the following courses. Pedagogy, Rotations, and Ethics courses are taken in year 1. Brain Lunch Seminar is taken in Years 1, 2, and 4.

Pedagogy courses

NEU 210A	Neuroscience Research Design and Analysis	1
NEU 210B	Neuroscience Career Skills	1

Rotations

NEU 291A	Neuroscience Introduction to Research	4-12
NEU 291B	Neuroscience Introduction to Research	4-12

Ethics in Research

MCELLBI 293C	Responsible Conduct in Research	1
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Brain Lunch Seminar

NEU 294	Neuroscience Graduate Student Presentation Seminar	1
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All students are required to enroll in the Brain Lunch seminar for 1 semester in each of Years 1 and 2, and again in Year 4 (see "Presentations" under "Required Professional Development" below)

Graduate Research and Research Review

Beginning in the second year after placement in a faculty research lab, students enroll in the following two courses under their research mentor each semester until they graduate.

NEU 292	Neuroscience Graduate Research (Neuroscience 3-12 Graduate Research)	
NEU 295	Neuroscience Research Review	2

Foundational courses: One Graduate Course in Each category

Students can either take one graduate-level course from each category, or three graduate level courses from two areas, plus a selected advanced undergraduate course from a third area. Graduate level courses are numbered 200 and above. Advanced undergraduate courses are numbered 100-199. They are taken in years 1–2. Courses offered will vary depending on the semester. The courses below are samples of courses that fulfill the area requirements.

1. Cellular, Molecular and Developmental Neuroscience

Choose one:

MCELLBI 160	Course Not Available	4
MCELLBI 166	Course Not Available	3
MCELLBI 230	Advanced Cell and Developmental Biology	4
MCELLBI 231	Advanced Developmental and Stem Cell Biology	4
MCELLBI 240	Advanced Genetic Analysis	4
NEU 260/	Course Not Available	3
MCELLBI C261		

2. Circuits, Systems, and Computational Neuroscience

Choose one:

INTEGBI 139	The Neurobiology of Stress	4
MCELLBI 236	Advanced Mammalian Physiology	5
NEU 250	Circuit and Systems Neuroscience	3
PSYCH 210B	Proseminar: Cognition, Brain, and Behavior	3
VIS SCI 260C	Introduction to Visual Neuroscience	3
VIS SCI 265	Neural Computation	3

3. Cognition, Brain, and Behavior

Choose one:

PSYCH 117	Human Neuropsychology	3
PSYCH/COG	Cognitive Neuroscience	3
SCI C127		
PSYCH C210A/	Proseminar: Cognition, Brain, and Behavior	3
NEU C241		
PSYCH 240A	Proseminar: Biological, Cognitive, and Language Development	3
PB HLTH C217D	Course Not Available	3
PB HLTH 290	Health Issues Seminars (Neuroepidemiology)	1-4
VIS SCI 262	Visual Cognitive Neuroscience	3

One course on statistical analysis or quantitative methods

Students must complete a 1-semester course in Applied Statistics in Neuroscience, or an equivalent approved course in statistics or quantitative analysis methods. This can be completed at any time prior to the semester of graduation, but is typically taken in years one-three. Students with prior appropriate coursework or whose thesis research uses substantial quantitative methods can use that prior experience to fulfill this requirement, subject to approval by the Head Graduate Adviser.

NEU 273	Applied Statistics for Neuroscience (Applied Statistics for Neuroscience)	2
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One Graduate Elective Course

Students must take one additional elective course. This can be either a graduate-level seminar or graduate-level lecture course, and can be 1 unit or more. This is typically taken in years three-four. You may also select a foundation course as an elective. Consult your thesis adviser and thesis committee to select the most appropriate course for you.

Neuroscience

NEU 242	Reinforcement Learning and Decision-making (Reinforcement Learning and Decision Making)	3
NEU C272/ MCELLBI C205/ PHYSICS C218	Modern Optical Microscopy for the Modern Biologist	3
NEU 273	Applied Statistics for Neuroscience (Applied Statistics for Neuroscience)	2
NEU 290	Seminars	1-3

Neuro-Related Seminar Courses

EL ENG 290	Advanced Topics in Electrical Engineering (Advanced Brain Imaging Methods)	1-4
LINGUIS 290A	Topics in Linguistic Theory: Syntax	3
LINGUIS 290B	Topics in Linguistic Theory: Semantics	3
LINGUIS 290D	Topics in Linguistic Theory: Pragmatics	3
LINGUIS 290E	Topics in Linguistic Theory: Phonology	3
LINGUIS 290F	Topics in Linguistic Theory: Diachronic Linguistics	3
LINGUIS 290H	Topics in Linguistic Theory: Linguistic Reconstruction	3
LINGUIS 290L	Additional Seminar on Special Topics to Be Announced	3
LINGUIS 290M	Topics in Linguistic Theory: Psycholinguistics	3
MCELLBI 290	Graduate Seminar	1
PSYCH 290E	Seminars: Perception	2
PSYCH 290H	Seminars: Developmental	2
PSYCH 290I	Seminars: Personality	2
PSYCH 290J	Seminars: Social	2
PSYCH 290K	Seminars: Clinical	2
PSYCH 290Q	Seminars: Cognition	2
PSYCH 290Z	Seminars	1-3

Psychology

PSYCH 102	Methods for Research in Psychological Sciences	4
PSYCH 111	Course Not Available	3
PSYCH 114	Biology of Learning	3
PSYCH 115	Introduction to Brain Imaging Analysis Methods	3
PSYCH 125	The Developing Brain	3
PSYCH 205	Data Analysis	3
PSYCH 208	Methods in Computational Modeling for Cognitive Science	3

Statistics

STAT 150	Stochastic Processes	3
STAT 151A	Linear Modelling: Theory and Applications	4
STAT 153	Introduction to Time Series	4
STAT 154	Modern Statistical Prediction and Machine Learning	4
STAT 158	Experimental Design	4
STAT 230A	Linear Models	4
STAT C241A	Statistical Learning Theory	3

STAT C241B	Advanced Topics in Learning and Decision Making	3
STAT 248	Analysis of Time Series	4

Mathematics

MATH 118	Fourier Analysis, Wavelets, and Signal Processing	4
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Computer Science and Programming

COMPSCI/VIS SCI C280	Computer Vision	3
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Data Science

DATASCI 281	Computer Vision	3
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Electrical Engineering

EL ENG 120	Signals and Systems	4
EL ENG 123	Digital Signal Processing	4
EL ENG 126	Probability and Random Processes	4
EL ENG 221A	Linear System Theory	4
EL ENG 226A	Random Processes in Systems	4
EL ENG 227BT	Convex Optimization	4
EL ENG 229A	Information Theory and Coding	3

Bioengineering

BIO ENG 231	Introduction to Computational Molecular and Cellular Biology	4
BIO ENG C265/ EL ENG C225E	Principles of Magnetic Resonance Imaging	4

Vision Science

VIS SCI 260A	Optical and Neural Limits to Vision	3
VIS SCI 260D	Seeing in Time, Space and Color	3

Public Health

PB HLTH 245	Introduction to Multivariate Statistics	4
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Required Professional Development

Presentations

During their fourth year of study, students are required to make a presentation on the progress of their thesis work while enrolling in NEU 294 (Neuroscience Graduate Student Presentation Seminar, also known as "Brain Lunch"), a journal club, for a letter grade.

Teaching

Neuroscience students are required to serve as graduate student instructors (GSIs) within the Neuroscience department for two semesters. Whenever possible, GSI assignments are determined with an eye toward student research interests. Teaching occurs during one semester of the second year and one semester of the third year. Teaching affords students supervised experience in a variety of educational situations, including labs, discussion sections, and demonstrations. GSIs also participate in record-keeping, grading, advising, and student consultations.

To help prepare students to GSI, students participate in a one day teaching conference and take an online teaching ethics course prior to teaching their first course. In addition, students enroll in a one semester pedagogy course to provide them with an orientation to the teaching strategies and methods of their discipline and to support them throughout their first semester of teaching. GSIs are evaluated by both supervising faculty and the students they teach. These evaluations become a permanent part of the student file. Deserving GSIs are nominated for the Outstanding Graduate Student Instructor Award.

Neuroscience

NEU 210A Neuroscience Research Design and Analysis 1 Unit

Terms offered: Fall 2025, Fall 2024

Professional core competency training for graduate students involved in neuroscience research at Berkeley. Includes survey of modern research methods, and professional skills including principles of experimental design and data reproducibility.

Rules & Requirements

Prerequisites: Graduate standing in the Neuroscience PhD program or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

Instructors: Feldman, Neuroscience Graduate Advisors, Guest faculty speakers

Formerly known as: Neuroscience 290A

NEU 210B Neuroscience Career Skills 1 Unit

Terms offered: Spring 2025

Professional core competency training for graduate students involved in neuroscience research at Berkeley. Includes training in giving scientific presentations, scientific writing, and project management.

Rules & Requirements

Prerequisites: Graduate standing in the Neuroscience PhD program or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 1.5 hours of seminar per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

Instructors: Feldman, Neuroscience Graduate Advisors, Guest faculty speakers

Formerly known as: Neuroscience 290B

NEU C231 Neural Computation 3 Units

Terms offered: Not yet offered

This course provides an introduction to the theory of neural computation. The goal is to familiarize students with the major theoretical frameworks and models used in neuroscience and psychology, and to provide hands-on experience in using these models. Topics include neural network models, supervised and unsupervised learning rules, associative memory models, probabilistic/graphical models, and models of neural coding in the brain.

Rules & Requirements

Prerequisites: Calculus, differential equations, basic probability and statistics, linear algebra, and familiarity with high level programming languages such as Matlab

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Letter grade.

Instructor: Olshausen

Also listed as: VIS SCI C265

NEU C241 Proseminar: Cognition, Brain, and Behavior 3 Units

Terms offered: Prior to 2007

A survey of the field of biological psychology. Areas covered are (a) cognitive neuroscience; (b) biological bases of behavior; (c) sensation and perception (d) learning and memory, (e) thought and language.

Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Letter grade.

Formerly known as: Psychology 210A

Also listed as: PSYCH C210A

NEU 242 Reinforcement Learning and Decision-making 3 Units

Terms offered: Spring 2025

The focus of the course is on weekly readings of recent papers in Reinforcement Learning and Decision-Making. The instructors have created a topical list of recent papers published in leading journals. We selected the papers because they sounded important and/or interesting. We have not necessarily read them. This should help you to not only learn about the field, but also learn to spot and critique a bad paper. Typical topics that are covered include: dopamine and temporal difference learning, model-based learning, cognitive maps in the hippocampus and beyond, economic choice, and the role of replay.

Rules & Requirements

Prerequisites: NEU 100B or equivalent undergraduate-level systems and cognitive neuroscience courses

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of seminar per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Letter grade.

NEU 250 Circuit and Systems Neuroscience 3 Units

Terms offered: Spring 2025

This is a graduate-level course on current topics in circuit and systems neuroscience. Topics include sensory coding, neural circuit computations, plasticity and learning, hippocampal function, motor control, and circuits for innate behaviors.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Letter grade.

Formerly known as: Molecular and Cell Biology C262/Neuroscience C262

NEU C260 Molecular and Cellular Neurobiology 3 Units

Terms offered: Fall 2025, Fall 2024, Fall 2015

This course covers molecular and cellular aspects of cellular excitability (including membrane potential, action potential generation, spike propagation, and ion channel structure and function), synaptic transmission and plasticity, and sensory systems. Primary reading material will be research papers. We will provide references to textbook chapters for background and review. This will be an interactive course in which you will be expected to be an active participant.

Rules & Requirements

Prerequisites: NEU 100A or equivalent undergraduate-level molecular and cellular neuroscience course

Credit Restrictions: Students will receive no credit for NEU C260 after completing MCELLBI 260, or MCELLBI C261.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Letter grade.

Formerly known as: Molecular and Cell Biology C260/Neuroscience C260

Also listed as: MCELLBI C260

NEU 271 Functional MRI Methods 2 Units

Terms offered: Fall 2025

This graduate course will provide a complete introduction to the theoretical and practical skills needed to conduct human functional MRI experiments. Topics to be covered include: MRI physics, BOLD signals and functional imaging, data preprocessing, data analysis and interpretation. The course will consist of lectures, practical lab sessions, and group work. Some sessions will take place in the Henry J. Wheeler Brain Imaging Center, where students will learn how to conduct their own MRI experiments.

Rules & Requirements

Prerequisites: The course is open to all graduate students who are potential or current users of fMRI, and to others working in fMRI labs (upon permission of the instructor)

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Letter grade.

NEU C272 Modern Optical Microscopy for the Modern Biologist 3 Units

Terms offered: Fall 2025, Spring 2025, Fall 2024, Fall 2023

This course is intended for graduate students in the early stages of their thesis research who are contemplating using modern microscopy tools as part of their work. It endeavors to cut through the confusion of the wide array of new imaging methods, with a practical description of the pros and cons of each. In addition to providing an intuitive physical understanding how these microscopes work, the course will offer hands on experience with cutting-edge microscopes where students will be able to see firsthand how different imaging modalities perform on their own samples, and where they will be able to access computational tools for the visualization and analysis of their data.

Rules & Requirements

Credit Restrictions: Students will receive no credit for MCELLBI 205 after completing MCELLBI 205, or MCELLBI 205. A deficient grade in MCELLBI 205 may be removed by taking MCELLBI 205, or MCELLBI 205.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Letter grade.

Instructors: Betzig, Ji

Formerly known as: Molecular and Cell Biology 205

Also listed as: MCELLBI C205/PHYSICS C218

NEU 273 Applied Statistics for Neuroscience 2 Units

Terms offered: Not yet offered

This intermediate-level statistics class is tailored for PhD students in neuroscience and related fields, emphasizing a collaborative learning approach. Led by a GSI with faculty oversight, students actively engage in discussions, presentations, and exercises. The course focuses on understanding statistical methods' applications, assumptions, and limitations in neuroscience research, as well as their implementation in Python. Covering traditional statistics and data modeling, students learn to analyze data and design experiments effectively. It's a dynamic format that requires students' active participation and commitment to reading and practical exercises.

Rules & Requirements

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

NEU 290 Seminars 1 Unit

Terms offered: Fall 2025, Spring 2025, Fall 2024

Course that focuses on topical subjects in specific fields of neuroscience.

Rules & Requirements

Repeat rules: Course may be repeated for credit without restriction. Students may enroll in multiple sections of this course within the same semester.

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of seminar per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Letter grade.

Formerly known as: Neuroscience 299

NEU 291A Neuroscience Introduction to Research 4 - 12 Units

Terms offered: Fall 2025, Fall 2024

Closely supervised, intensive laboratory experimental research under the direction of an individual faculty member. For first-year neuroscience graduate students, this course will provide an introduction to experimental methods and research approaches in the different areas of neuroscience. Course sequence includes 3 ten-week laboratory rotations spread out over the fall and spring semesters. Credit and grade to be awarded upon completion of the full sequence.

Rules & Requirements

Prerequisites: Graduate standing in the Neuroscience PhD program or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 12-36 hours of laboratory per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Letter grade. This is part one of a year long series course. A provisional grade of IP (in progress) will be applied and later replaced with the final grade after completing part two of the series.

Formerly known as: Neuroscience 291A

NEU 291B Neuroscience Introduction to Research 4 - 12 Units

Terms offered: Spring 2025

Closely supervised, intensive laboratory experimental research under the direction of an individual faculty member. For first-year neuroscience graduate students, this course will provide an introduction to experimental methods and research approaches in the different areas of neuroscience. Course sequence includes 3 ten-week laboratory rotations spread out over the fall and spring semesters. Credit and grade to be awarded upon completion of the full sequence.

Rules & Requirements

Prerequisites: Graduate standing in the Neuroscience PhD program or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 12-36 hours of laboratory per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Letter grade. This is part two of a year long series course. Upon completion, the final grade will be applied to both parts of the series.

Formerly known as: Neuroscience 291B

NEU 292 Neuroscience Graduate Research 3 - 12 Units

Terms offered: Fall 2025, Spring 2025, Fall 2024

For graduate students in neuroscience in their second or later years. Individual research under faculty supervision. In this course each graduate student conducts basic thesis and dissertation research after successful completion of the first-year laboratory rotation, Neuroscience 291A-291B. Laboratory work provides the basis for students' thesis research, preparation for the preliminary examination, and continued progress toward completion of Ph.D. dissertation.

Rules & Requirements

Prerequisites: Graduate standing in the Neuroscience PhD Program; advanced approval from instructor

Repeat rules: Course may be repeated for credit without restriction. Students may enroll in multiple sections of this course within the same semester.

Hours & Format

Fall and/or spring: 15 weeks - 9-36 hours of laboratory per week

Summer: 10 weeks - 13.5-54 hours of laboratory per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Letter grade.

Formerly known as: Neuroscience 292

NEU 294 Neuroscience Graduate Student Presentation Seminar 1 Unit

Terms offered: Spring 2025, Fall 2024

This course provides a holistic approach to graduate neuroscience education, with a focus on three key areas: 1) Improving research presentation skills: Fourth and fifth-year students present seminars on their dissertation research, emphasizing conceptual organization, data presentation, and summarization. 2) Exploring current neuroscience topics: Faculty speakers discuss advanced technical methods, analytical techniques, and preparing grant applications. 3) Seminar readiness: Students engage with seminar speakers during class sessions, reviewing articles authored by upcoming speakers and related publications.

Rules & Requirements

Prerequisites: Graduate standing in the Neuroscience PhD program or consent of instructor

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of seminar per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Letter grade.

Formerly known as: Neuroscience 294

NEU 295 Neuroscience Research Review 2 Units

Terms offered: Fall 2025, Spring 2025, Fall 2024

For graduate students in neuroscience in their second or later years. Two hours of seminar per week which complements the individual laboratory work under faculty supervision. Seminar will review current scientific literature and discuss original research performed by faculty, postdoctoral fellows, scientists, and graduate students in individual faculty laboratories.

Rules & Requirements

Prerequisites: Graduate standing in the Neuroscience PhD program or consent of instructor

Repeat rules: Course may be repeated for credit without restriction. Students may enroll in multiple sections of this course within the same semester.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of seminar per week

Summer:

6 weeks - 5 hours of seminar per week

8 weeks - 3.5 hours of seminar per week

10 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

Formerly known as: Neuroscience 293

NEU 296 Neuroscience Colloquium 0.0 Units

Terms offered: Prior to 2007

Meetings for the presentation of original work by faculty, visiting lecturers, postdoctoral fellows, and graduate students.

Hours & Format

Fall and/or spring: 15 weeks - 1.5 hours of colloquium per week

Additional Details

Subject/Course Level: Neuroscience/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

NEU 375 Pedagogy for NEU Graduate Student Instructors 2 Units

Terms offered: Not yet offered

This course will introduce you to effective teaching methods that you can use in the courses you will be teaching this year. Through readings, discussions and demonstrations, you will learn how to engage and motivate students, facilitate active participation, plan a class period, and write exam or practice problems. Emphasis will be placed on science education literature and proven practical techniques. We will also provide support and solutions for dealing with difficult situations that may come up during your first semester of teaching.

Rules & Requirements

Prerequisites: Appointment as Graduate Student Instructor or consent of instructor

Hours & Format

Fall and/or spring: 10 weeks - 1 hour of seminar per week

Additional Details

Subject/Course Level: Neuroscience/Professional course for teachers or prospective teachers

Grading: Offered for satisfactory/unsatisfactory grade only.