

*Guidelines for Neuroscience Graduate Curriculum
Updated December 1, 2008*

The major goal of the coursework guidelines is to ensure that neuroscience graduate students receive sufficiently broad training to be conversant in all areas of neuroscience while allowing focus in the area of primary research interest.

Course Requirements:

1. During the first two years in the program, students are required to take a minimum of three 3- or 4-unit graduate lecture courses (200-level) according to the Course Distribution (see below).
2. After passing the qualifying examination and advancing to candidacy, students are required to take two additional graduate topical seminars and/or lecture courses according to their specific interests. This requirement ensures students' continued involvement in the academic campus-wide community as well as further refinement and deepening of expertise.
3. During the 4th year of study, students must enroll in NEUROSC 294 and make a presentation of their thesis research.

Course Distribution:

To ensure breadth in the student's neuroscience graduate education, during the first two years in the program, the student must select courses as follows:

Option A: 3 graduate courses, one from each of the three categories A, B, C (see below).

OR

Option B: 3 graduate courses distributed across two categories, plus one upper division undergraduate course, as follows:

a. 3 graduate courses distributed across Categories A and B (i.e., two from Category A and one from Category B, or one from Category A and two from Category B), plus either Psych 117 or Psych 127;

OR

b. 3 graduate courses distributed across Categories B and C (i.e., two from Category B and one from Category C, or one from Category B and two from Category C), plus MCB 160.

Course Categories:

Category A – Cellular, Molecular & Developmental Neuroscience:

MCB 261: Advanced Cellular and Molecular Neurobiology (Spring even years)

MCB 263: Advanced Developmental Neurobiology (Spring odd years)

MCB 200: Biochemistry and Molecular Biology (Fall every year)

MCB 230: Advanced Cell Biology (Spring every year)

MCB 231: Advanced Developmental Biology (Spring every year)

MCB 240: Advanced Genetics (Spring every year)

MCB 160: Upper division undergraduate course: Introduction to Neurobiology (Every semester)

Category B – Systems & Computational Neuroscience:

IB 245 and IB 245L: Functional Neuroanatomy and Lab (Spring every year)

MCB 262: Systems/Computational Neurobiology (Fall odd years)

Psych 210B: Behavioral Neuroscience Proseminar (Spring odd years)
Psych 210C: Sensory Systems (Spring even years)
Psych C213/IB C240: Stress Effects on Brain and Behavior (Fall odd years)
Psych 290Z: Neuronal Mechanisms of Learning and Memory (Spring even years)
Vision Science 298: Neural Computation (Fall even years)

Category C – Cognition, Brain and Behavior:

Psych 210A: Cognitive Neuroscience (Fall odd years)
Psych 210D: Learning and Memory (Fall even years)
Psych 211: Hormones and Behavior
Psych 214: Functional MRI Methods (Fall every year)
Psych 240A: Proseminar: Biological, Cognitive and Language Development (Fall odd years)
Public Health C217D: Biological and Public Health aspects of Alzheimer's Disease (Spring odd years)
Psych 117: Upper division undergraduate course: Human Neuropsychology
Psych 127: Upper division undergraduate course: Cognitive Neuroscience (Fall every year)

Recommended statistical methods courses:

Psych 205: Data Analysis
EECS 221A: Linear Systems Theory
EECS 226A: Random Processes in Systems
EECS 229: Information Theory and Coding
Statistics 241A: Statistical learning theory
Statistics 248: Analysis of time series

Coursework Notes:

1. All required coursework must be taken for a letter grade and passed with a grade of B or higher.
2. Students without prior undergraduate coursework in general neurobiology are strongly encouraged to take MCB 160 in the first semester of study.
3. Students must take the three required graduate courses within the first two years in the program. This allows them to finish or be close to finishing the core course requirements prior to the Qualifying Examination. The course requirement provides the basis for the neuroscience general knowledge requirement on the Qualifying Examination.
4. NEUROSC 290, or Neuro Student Research Presentations, is a forum for first year students to present their rotation projects to the rest of the class. The course is held during the Spring semester and is required for all first year students. This course cannot be taken as an elective graduate seminar/course.
5. MCB 293C is the Ethics in Research course, also held during Spring semester and is required of all first year students who are appointed trainees on NIH Training Grants. This course cannot be taken as an elective graduate seminar/course.
6. NEUROSC 294 is a Journal Club course that can be taken any number of times for a Satisfactory/Unsatisfactory (S/U) grade. During their 4th year of study, students are required to make a presentation on the progress of their thesis work while enrolling into this course for a letter grade
7. In lieu of a thesis defense examination, students must present a thesis seminar to the neuroscience community during the semester they file their dissertation.