



Twin Cities Campus

Neuroscience Ph.D.

Neuroscience

Medical School

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Neuroscience, 6-145 Jackson Hall, 321 Church Street SE, Minneapolis, MN 55455 (612-626-6474; fax: 612-626-6460)

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Website: <http://www.neuroscience.umn.edu>

- Program Type: Doctorate
- Requirements for this program are current for Fall 2019
- Length of program in credits: 51
- This program requires summer semesters for timely completion.
- Degree: Doctor of Philosophy

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

Neuroscience is an interdisciplinary field of inquiry. The objects of this inquiry, the brain and nervous system, are sufficiently complex and unique among biological systems to require experimental and analytical approaches that cross the traditional boundaries of molecular and cell biology, behavioral biology, biochemistry, genetics, pharmacology, physiology, and psychology. In some instances, neuroscientific inquiry may also encompass computer science, information processing, engineering, physics, and mathematics.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

Special Application Requirements:

Applicants are required to take the GRE General Test. Students whose native language is not English are required to take the TOEFL and obtain a minimum score of 625 (paper) or 107 (Internet); or obtain 6.5 on the IELTS examination. There are no minimum GPA or GRE score requirements to apply.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 107
 - Paper Based - Total Score: 625
- IELTS
 - Total Score: 6.5

The preferred English language test is Test of English as Foreign Language

Key to [test abbreviations](#)(GRE, TOEFL, IELTS).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

21 credits are required in the major.

6 credits are required outside the major.

24 thesis credits are required.

This program may be completed with a minor.



Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 2 semesters must be completed before filing a Degree Program Form.

The neuroscience PhD curriculum begins in the summer session with the intensive laboratory course in cellular and molecular neurobiology (NSC 5551), held at the Itasca Biological Station and Laboratories.

The core curriculum continues on the Twin Cities campus with NSC 5461, 5561, 5661, and 8211. While taking these courses, students explore research opportunities in the faculty's laboratories and thereby select a thesis advisor.

Students will also participate in journal clubs (NSC 8320) to discuss work in the field of Neuroscience. Elective courses totaling 6 credits are required and selected in consultation with the advisor.

Students with sufficient background and previous course experience may apply for a waiver of specific requirements. A student, if they so choose, must take at least 12 elective credits to receive a minor (typical minors include cell biology, physiology, statistics, and psychology). Students are also expected to participate in teaching neuroscience and to attend the weekly colloquiums, as well as neuroscience seminars and sessions devoted to professional development. Students are strongly encouraged to attend seminars in other areas and departments that may interest them.

Summer - First Year

NSC 5551: Cell & Molecular Neurobiology Lab at Itasca (4 cr)

Fall - First Year

NSC 5461: Cellular & Molecular Neuroscience (4 cr)

NSC 5561: Systems Neuroscience (4 cr)

NSC 8321: Career Skills and Understanding Responsibilities as a Neuroscientist (0.5 cr)

Spring - First Year

NSC 5661: Behavioral Neuroscience (3 cr)

NSC 8211: Developmental Neurobiology (3 cr)

NSC 8320: Neuroscience Seminar Series Journal Club (Section 2) (1 cr)

NSC 8321: Career Skills and Understanding Responsibilities as a Neuroscientist (0.5 cr)

Fall - Second Year

NSC 8321: Career Skills and Understanding Responsibilities as a Neuroscientist (0.5 cr)

Spring - Second Year

NSC 8320: Neuroscience Seminar Series Journal Club (Section 2) (1 cr)

Electives

During the course of PhD studies, take at least 6 credits of electives. Electives are chosen in consultation with the advisor.