Twin Cities Campus

Integrative Biology and Physiology M.S.

Integrative Biology and Physiology

Medical School

Link to a list of faculty for this program.

Contact Information:
Department of Integrative Biology and Physiology, Jackson Hall 6-125, 321 Church Street S.E., Minneapolis, MN 55455 (612-625-5902; fax: 612-625-5149)
Email: ibpdept@umn.edu
Website: http://physiology.med.umn.edu/graduate-program/

- Program Type: Master's
- Requirements for this program are current for Fall 2020
- Length of program in credits: 30 to 32
- This program does not require summer semesters for timely completion.
- Degree: Master of Science

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.

Note: Students enter the Twin Cities Integrative Biology and Physiology MS program only for exceptional reasons.

The Twin Cities graduate program has a cardiovascular emphasis, although other areas of specialization are represented.

The program includes faculty and corresponding research laboratories from the Department of Integrative Biology and Physiology and also the Departments of Medicine; Surgery; Neuroscience; Neurosurgery; Biochemistry, Molecular Biology, and Biophysics; Pharmacology; Physical Medicine and Rehabilitation; Kinesiology; and Animal Science.

Program Delivery

This program is available:

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

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

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

- TOEFL
  - Internet Based - Total Score: 79
  - Internet Based - Writing Score: 21
  - Internet Based - Reading Score: 19
  - Paper Based - Total Score: 550
- IELTS
  - Total Score: 6.5
- MELAB
  - Final score: 80

Key to test abbreviations(TOEFL, IELTS, MELAB).

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

Program Requirements

Plan A: Plan A requires 22 major credits, 0 credits outside the major, and 10 thesis credits.The final exam is written and oral.

Plan B: Plan B requires 30 major credits and 0 credits outside the major.The final exam is oral. A capstone project is required.
Capstone Project: The Plan B project, completed under the direction of an IBP faculty member, focuses on an aspect of Physiology.

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 2.80 is required for students to remain in good standing.

Twin Cities campus: Students complete the MS degree only under exceptional circumstances.

Required Coursework (15 credits)
Take PHSL 8232 in conjunction with PHSL 5101. Take PHSL 8294, on an S/N grade basis, at least twice for 2 credits.

ANSC 5702 - Cell Physiology (4.0 cr)
PHSL 5101 - Human Physiology (5.0 cr)
PHSL 8232 - Critical Reading of Journal Articles in Physiology (2.0 cr)
PHSL 8294 - Research in Physiology (1.0 - 18.0 cr)

Molecular Biology and Genetics Coursework (3 credits)
Select at least 3 credits chosen from the following in consultation with the advisor.
BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
BIOC 4332 - Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression (4.0 cr)
BIOC 6021 - Biochemistry (3.0 cr)
BIOL 4003 - Genetics (3.0 cr)
BIOL 4004 - Cell Biology (3.0 cr)
GCD 5036 - Molecular Cell Biology (3.0 cr)

IBP Seminar Series (4 credits)
Take PHSL 5096 at least 4 times for a minimum of 4 credits.
PHSL 5096 - Integrative Biology and Physiology Research Advances (1.0 cr)

Plan Options

Plan A
Take at least 10 master's thesis credits.
PHSL 8777 - Thesis Credits: Master's (1.0 - 18.0 cr)

-OR-

Plan B
Electives
Select elective credits in consultation with the advisor to meet the minimum course credit requirement. Coursework may include the following courses:
NUTR 8620 - Advances in Nutrition (2.0 cr)
PHSL 5197 - Stress Physiology (1.0 - 3.0 cr)
PHSL 5701 - Physiology Laboratory (1.0 - 2.0 cr)
PHSL 8242 - Professional Skills Development for Biomedical Scientists (2.0 cr)
PUBH 6450 - Biostatistics I (4.0 cr)
PUBH 6451 - Biostatistics II (4.0 cr)
STAT 5021 - Statistical Analysis (4.0 cr)