Duluth Campus

Integrated Biosciences Ph.D.

Swenson College of Science & Engineering
University of Minnesota Duluth

Link to a list of faculty for this program.

Contact Information:
Integrated Biosciences Graduate Program, University of Minnesota, 251 Swenson Science Building, 1035 Kirby Drive, Duluth, MN 55812 (218-726-6898; fax: 218-726-8152)
Email: ibs@d.umn.edu
Website: https://scse.d.umn.edu/integrated-biosciences

- Program Type: Doctorate
- Requirements for this program are current for Spring 2023
- Length of program in credits: 50
- This program does not require summer semesters for timely completion.
- The Integrated Biosciences Ph.D. is an All-University program delivered on the Twin Cities and Duluth Campuses. The University of Minnesota Twin Cities is the degree granting authority for the Integrated Biosciences Ph.D. program in Duluth.
- 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.

The all-university Integrated Biosciences PhD program offers three areas of emphasis: cell, molecular, and physiological (CMP) biology; chemical biology (CB0; and ecology, organismal, and population (EOP) biology.

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.

A bachelor's degree or equivalent from an accredited college or university in the biological or physical sciences or a related field.

Other requirements to be completed before admission:
Recommended undergraduate courses for applicants pursuing the Ph.D. degree include one year each of chemistry, biology, physics, calculus, and advanced chemistry. One semester (minimum) of statistics is also recommended.

EOP emphasis: one year of calculus; one semester each of ecology and evolutionary biology; and one course in two of the following subjects genetics, cell biology, biochemistry are recommended.

CMP emphasis: one year of organic chemistry; one genetics course; one cell biology course; and one biochemistry course are recommended.

CB emphasis: one year of organic chemistry; one biochemistry course; and one course in cell biology are recommended.

Special Application Requirements:
Applicants are not required to submit GRE scores as part of their application, but may submit GRE scores if they feel that the scores will enhance their application.

International and domestic applicants whose first language is not English must submit current score(s) from one of the following tests:

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
- IELTS

- Total Score: 6.5
- Reading Score: 6.5
- Writing Score: 6.5

• MELAB
- Final score: 80

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

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

26 credits are required in 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.

Use of 4xxx-level courses must be approved by both the advisor and director of graduate studies.

Required Coursework (8 credits)
Take the following courses:
IBS 8011 - Integrated Biological Systems I (3.0 cr)
IBS 8013 - Integrated Biological Systems II (3.0 cr)
IBS 8030 - IBS Research Club (1.0 cr)
IBS 8099 - The Biological Practitioner (1.0 cr)

Statistics Requirement (3 credits)
Select one of the following in consultation with the advisor:

UMTC course PUBH 6450 may also be used to satisfy this requirement.
BIOL 5809 - Ecological Statistics (3.0 cr)
STAT 4060 - Introduction to Biostatistics (3.0 cr)
STAT 5411 - Analysis of Variance (3.0 cr)
STAT 5511 - Regression Analysis (3.0 cr)

Seminar (2 credits)
Take the following:
IBS 8993 - Integrated Biosciences Graduate Seminar (2.0 cr)

Electives (13 credits)
Select 13 credits from the following in consultation with the advisor:
IBS 8012 - Integrated Evolutionary Processes (2.0 cr)
IBS 8094 - Rotations (1.0 cr)
IBS 8101 - Cellular Biochemistry (3.0 cr)
IBS 8102 - Cell, Molecular and Developmental Biology (3.0 cr)
IBS 8103 - Comparative Animal Physiology (3.0 cr)
IBS 8201 - Ecological Processes (2.0 cr)
IBS 8202 - Chemical Biology (3.0 cr)
IBS 8203 - Methods in Molecular Biosciences (2.0 cr)

Thesis (24 credits)
Take 24 doctoral thesis credits.
IBS 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)