

### **Duluth Campus**

## **UMD Integrated Biosciences M.S**

*Swenson College of Science & Engineering*

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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](mailto:ibs@d.umn.edu)

Website: <http://www.d.umn.edu/ibs>

- Program Type: Master's
- Requirements for this program are current for Fall 2016
- Length of program in credits: 30
- This program requires 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.

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The all-University integrated biosciences graduate program offers study toward the master of science (M.S.) degree under Plan A (coursework and original thesis). The program has three areas of emphasis: cell, molecular, and physiological (CMP) biology emphasis, chemical biology (CB) emphasis, and ecology, organismal, and population (EOP) biology emphasis.

Approved graduate course credits from the University of Minnesota Duluth Integrated Biosciences M.S. may be counted in common with the University of Minnesota Twin Cities campus Integrated Biosciences doctoral program (<http://policy.umn.edu/education/gradcreditdegree> see 2.b.).

## **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.

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: 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](#)(GRE, 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 20 major credits, up to null credits outside the major, and 10 thesis credits. The final exam is oral.

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.

In addition to coursework and thesis credits, students must conduct original research, and write and successfully defend a thesis.

### Required Coursework (11 cr)

- IBS 8011 - Integrated Biological Systems I (3.0 cr)
- IBS 8012 - Integrated Evolutionary Processes (2.0 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)
- STAT 4060 - Introduction to Biostatistics (3.0 cr)
  - or STAT 5411 - Analysis of Variance (3.0 cr)
  - or STAT 5511 - Regression Analysis (3.0 cr)

### Thesis (10 cr)

Must be taken for 10 credits.

- IBS 8777 - Thesis Credits: Master's (1.0 - 18.0 cr)

### Electives (9 cr)

Elective coursework outside of IBS courses may be taken with prior approval from the Director of Graduate Studies in consultation with the student's advisor.

Take 9 or more credit(s) from the following:

- IBS 8020 *(Inactive)* (1.0 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)