



Bachelor of Science, 4-Year Honours in Biology

Program Planning Guide 2026/2027

Program Overview

The Bachelor of Science with Honours in Biology is intended to provide students with the opportunity to pursue a program of study in biology with grounding in the other Liberal Arts. Students will master a depth of material and methodology to prepare them for graduate study, while acquiring a breadth of experience to maintain the flexibility of thinking and approach necessary for effective participation in a fluid and progressive society and workforce. Drawing on the existing strength of St. Mary's in the Liberal Arts, students will become broadly educated, grounded, practically-minded thinkers with experience in thinking across and outside disciplinary boundaries.

This program will develop students' capacity for independent, critical thinking. A stress on connections between class experience and real-world application, incorporating realistic discovery-based laboratory experiences, will allow graduates of the program to move quickly and effectively into roles as active, productive biologists. As they grow within the program, students will develop the capacity for self-directed learning, culminating in an independent study project in their final year.

Such an education serves to well prepare students for a wide array of careers, with roles from agriculture to biomedical laboratory research, from environmental consulting to veterinary medicine. Students will be prepared for further education, whether graduate work in biology, business, education, law, or medicine.

The program will challenge students to consider the effect of science on society, and the effect of society on scientific thinking. Part of the development of a "well-educated, free human being" is ensuring that students recognize their responsibility to our community and our world, and this is a vital component of the program.

In keeping with this sense of place, the courses comprising this program are informed by the setting of St. Mary's on the edge of Fish Creek Provincial Park, and in the larger landscape of Southern Alberta. Part of any thorough education in the natural sciences must consist of basic grasp of, and appreciation for, the natural resources in which this area is so rich. Students completing a BSc in Biology at St. Mary's will be independent, capable thinkers and doers, with an eye for the natural wealth of Alberta and a sense of responsibility to the people and the world around them.

In addition to illustrating academic excellence, completion of an Honours degree indicates independent learning in the form of a senior project (BIOL 490) under the guidance of a faculty supervisor. The research experience gained in the completion of the senior project is considered an important admission criterion for graduate schools and is viewed favorably by employers and for entry into many professional programs.

Admission

Students may apply for entry into the Honours Program if they meet the following requirements:

- a cumulative GPA of 3.3 in the 60 most recent credits;
- a cumulative GPA of 3.3 in 300- and 400-level Biology courses;
- no grade below a B- in any 300- or 400-level Biology course;
- no more than one D or D+ in non-Biology courses;
- completed a minimum of 75 credits towards the B.Sc Biology degree by the deadline to apply to the Honours program on the first working day of January in the year before they graduate.

Meeting or exceeding the eligibility requirements does not guarantee admission to the Honours Program. Admission is dependent on a student's overall performance in the biology program, preparedness for research, and supervisor availability. The number of students admitted each year to the Honours Program will be limited. This means that the application process will be competitive, and not everyone who applies may be accepted. Students are strongly advised to consult with an Academic Advisor prior to submitting their application.

Program Requirements

Students are strongly recommended to meet with an academic advisor on a regular basis throughout the program. It is the student's responsibility to ensure they have met the requirements for graduation.

This planning guide is designed to help students keep track of their progress in meeting degree requirements. Course descriptions may be found in the St. Mary's University calendar.

A. Liberal Arts Core (18 credits)

- _____ ENGL 200A: *Literature in English from the Middle Ages to 1660* (3 credits)
 _____ ENGL 200B: *Literature in English from 1660 to the Present* (3 credits)
 _____ HIST 200A: *History of Ideas: Antiquity to the Reformation* (3 credits)
 _____ HIST 200B: *History of Ideas: Scientific Revolution to 20th Century* (3 credits)
 _____ PHIL 351: *Ethics* (3 credits)
 _____ RLGS 205: *Reading Biblical Texts* (3 credits)

B. Special Requirements (15 credits)

- _____ 3 credits in Mathematics (MATH 211 or MATH 249)
 _____ BIOL 315: *Biostatistics* (3 credits)
 _____ 3 credits in Physics
 / BIOL 490: *Honours Project* (6 credits)

C. Introductory Science Core (21 credits)

- _____ BIOL 231: *Introduction to Biology I*
 _____ BIOL 233: *Introduction to Biology II*
 _____ CHEM 201: *General Chemistry I*
 _____ CHEM 203: *General Chemistry II*
 _____ CHEM 351: *Organic Chemistry I*
 _____ CHEM 353: *Organic Chemistry II*
 _____ BCEM 393: *Introduction to Biochemistry*

D. Senior Biology Core (21 credits)

- _____ BIOL 311: *Principles of Genetics*
 _____ BIOL 313: *An Introduction to Ecology and Evolution*
 _____ BIOL 331: *Introduction to Cellular and Molecular Biology*
 _____ BIOL 341: *Introductory Microbiology*
 _____ BIOL 411: *Genetics*
 _____ BIOL 413: *Ecology*
 _____ BIOL 415: *Evolution*

E. Biology Electives (15 credits)**Two courses of the following (6 credits):**

- _____ ANPH 301: *Human Anatomy and Physiology I*
 _____ ANPH 303: *Human Anatomy and Physiology II*
 _____ BIOL 361: *Plant Biology*
 _____ BIOL 375: *Invertebrate Zoology*
 _____ BIOL 377: *Vertebrate Zoology*
 _____ BIOL 381: *Mycology*

120-Credit Honours Degree**Junior/Senior Requirements**

72 credits must be taken at the **300- or 400-level**.

Directed Studies

Students are allowed a **maximum of 9.0 credits hours** of directed studies in their degree program.

Program Standing

Must maintain the following requirements in order to graduate:

- maintain a minimum cumulative GPA of 3.3;
- maintain a cumulative GPA of 3.3 in 300 and 400- level Biology courses;
- have no grade below a B- in any 300 or 400-level Biology course;
- have no more than one D or D+ in non-Biology courses;
- complete BIOL 490 with a minimum grade of B;
- satisfactorily participate in the senior project conference at StMU

Residence Requirement

All students must complete at least **60 credits** at St. Mary's University. A minimum of 27 credits in Biology must be completed at StMU, including **BIOL 490**.

Graduation

In final year of study, an *Application to Graduate* must be submitted by October 1.

This guide is for your convenience only and should not replace the St. Mary's University Calendar, which is the final authority regarding degree program requirements and academic regulations.

And three courses from the following, or any other courses listed above not taken to fulfil that category (9 credits):

- _____ BIOL 317: Marine Biology Field School
- _____ BIOL 417: Tropical Ecology Field School
- _____ BIOL 431: Cellular & Molecular Biology
- _____ BIOL 433: Immunology
- _____ BIOL 441: Microbiology
- _____ BIOL 451: Biological Conservation
- _____ BIOL 480: Laboratory Experience Internship
- _____ SCIE 399: Directed Studies in Science

F. Minor Program Requirements (18 credits) *if not pursuing a minor, take 18 credits of electives instead.

- Of the following 30 credits, **15 credits must be outside of Science** (ASTR, BCEM, BIOL, CHEM, CPSC 215, HMKN 205, MATH, PHYS, SCIE)
- BIOL 205, 305, 307, MATH 205, STAT 213 and STAT 217 are not open for credit for B.Sc. Biology majors
- At least 9 credits of a minor must be taken at the 300 or 400 level
- At least 9 credits of a minor must be completed at St. Mary's University

Minor (if applicable): _____

- _____ (3 credit)
- _____ (3 credit)
- _____ (3 credit)
- _____ (3 credit)
- _____ (3 credit)
- _____ (3 credit)

G. Electives (12 credits) *be attentive to Jr./Sr. requirements

- _____ elective: _____ (3 credit)
- _____ elective: _____ (3 credit)
- _____ elective: _____ (3 credit)
- _____ elective: _____ (3 credit)