

BACHELOR OF SCIENCE (HONOURS), MAJOR IN BIOLOGY

At a Glance

Faculty

www.kpu.ca/science (<http://www.kpu.ca/science/>)

Area of Study:

www.kpu.ca/science/biology (<http://www.kpu.ca/science/biology/>)

Academic Level:

Undergraduate

Credential Granted:

Baccalaureate Degree (Honours)

Start Date:

Fall (September)

Spring (January)

Summer (May)

Intake Type:

- Open

Minimum Credits Required:

140

Curriculum Effective Date:

01-Sep-2022

Description

The B.Sc. Major in Biology is a foundational degree program strongly grounded in scientific methodology and practical skills. The structure and breadth of courses offered is designed to equip graduates with a high level of competency in the knowledge, skills and experience necessary for competitive entry into the workforce in a wide range of fields. Graduates will also be well prepared for entry into a professional school or graduate studies program.

Central to this program is the provision of a lab intensive experience where students learn first-hand, the appropriate use of equipment and techniques to investigate living organisms and how they function. Upper level courses build upon the core knowledge and skills developed in 1st and 2nd Year, allowing the exploration of more advanced biological concepts and practical techniques. This culminates in a community focused research or directed studies project which requires students to apply the knowledge and skills they have learned.

Important Notes:

- First and second year courses required in the program are normally available on both Richmond and Surrey campuses.

- Elective courses are not offered every year. Students are encouraged to plan their courses carefully and to see a degree advisor for guidance.

Who Studies Biology?

This degree program will appeal to individuals with a passionate interest in living organisms and how they function. Whether entering from high school, other post-secondary institutions or returning from the workforce to study, this program will appeal to anyone who shares a concern for the future of humanity and the welfare of our planet and who is seeking a career that can make a difference.

Students who are successful in this program are likely to be self-motivated, have a strong work ethic and have well developed oral and written communication skills.

Requirements

Admission Requirements

The Faculty's Admission Requirements, which consist of KPU's undergraduate English Proficiency Requirement (<https://calendar.kpu.ca/admissions/english-proficiency-requirements/>), apply to this program.

Declaration Requirements

Students intending to graduate with this Faculty of Science and Horticulture degree must declare the credential by the time they complete 60 credits of undergraduate coursework. At the time of declaration, the student must satisfy all of the following requirements:

In good academic standing with the University
Completion of a minimum of 24 credits of undergraduate coursework, including the following:

- 3 credits of ENGL at the 1100 level or higher
- BIOL 1110 with a minimum grade of "C"
- BIOL 1210 with a minimum grade of "C"
- CHEM 1110 with a minimum grade of "B" or CHEM 1210 with a minimum grade of "C"
- MATH 1120 with a minimum grade of "C" or MATH 1130 with a minimum grade of "C"
- PHYS 1101 with a minimum grade of "C" or PHYS 1120 with a minimum grade of "C"

Curricular Requirements

All students must meet the following minimum requirements:

- In addition to ENGL 1100, complete 3 credits from courses designated as Writing Intensive.
- 120 credits from courses at the 1100 level or higher.
- 45 credits from courses at the 3000 level or higher, including 9 credits at the 4000 level.
- 18 credits of breadth electives (see Electives below) including at least 3 credits from a course at the 3000 level or higher. These must include:
 - at least 12 credits from courses that are offered outside the Faculty of Science & Horticulture; and
 - up to 6 credits from courses offered within the Faculty of Science & Horticulture other than BIOL, CHEM, MATH, and PHYS.

- Cumulative GPA of 2.0 or higher.
- At least 50% of all courses for the BSc, and at least 66% of upper-level courses for the BSc, must be completed at KPU.

Enrolment in the Biology Honours program requires the permission of the Biology Department. In order to be considered for the Honours program, students must typically have a record of exceptional academic performance, including a minimum Grade Point Average of 3.0

The Bachelor of Science (Honours), Major in Biology degree requires the completion of a minimum of 140 credits, including the following specific course requirements.

Note: Some courses are only offered once per year. Please refer to the course timetable and speak with an Academic Advisor when planning.

Year 1		Credits
BIOL 1110	Introductory Biology I	4
BIOL 1210	Introductory Biology II	4
CHEM 1110	The Structure of Matter	4
CHEM 1210	Chemical Energetics and Dynamics	4
ENGL 1100	Introduction to University Writing	3
MATH 1130	Calculus for Life Sciences I ¹	3
MATH 1230	Calculus for Life Sciences II	3
PHYS 1101	Physics for Life Sciences I	4
PHYS 1102	Physics for Life Sciences II	4
Select three credits of ENGL at the undergraduate level		3
Credits		36
Year 2		Credits
BIOL 2320	Genetics	4
BIOL 2321	Cell Biology	4
BIOL 2322	Ecology	4
BIOL 2421	Cellular Biochemistry	3
CHEM 2320	Organic Chemistry I	4
CHEM 2420	Organic Chemistry II	4
MATH 2335	Statistics for Life Sciences	3
Select nine credits of Electives (p. 2)		9
Credits		35
Year 3		Credits
BIOL 3110	Animal Behaviour	4
BIOL 3215	Zoology	4
BIOL 3165	Conservation Biology	3
BIOL 3180	Life Science Research Methods	3
BIOL 3225	Biology of Plants	4
BIOL 3320	Molecular Genetics	4
BIOL 3321	Advanced Cell and Molecular Biology	4
Select three credits of BIOL at the undergraduate level		3
Select six credits of Electives (p. 2)		6
Credits		35
Year 4		Credits
BIOL 4140	Animal Physiology	4
BIOL 4150	Evolutionary Biology	3
BIOL 4235	Marine Biology	3
BIOL 4245	Developmental Biology	4
BIOL 4990	Honours Thesis Project 1	4
BIOL 4995	Honours Thesis Project 2	4
Select 12 credits of Electives (p. 2)		12
Credits		34
Total Credits		140

¹ MATH 1120 may be used as a substitute for MATH 1130

Electives

As part of this program, students are required to complete 27 credits of electives. These must satisfy the General Requirements for 18 credits of breadth as stated above. The following courses are recommended as electives:

Code	Title	Credits
ANTH 3242	A Survey of the Primates	3
ASTR 1105	Basic Astronomy	3
ASTR 3111	Exploring Stars & Galaxies	3
BIOL 2330	Microbiology	4
BIOL 3330	Microbiology II	4
BIOL 4260	Human Neural, Excretory and Endocrine Systems	4
BIOL 4320	Human Genetics	3
CHEM 2315	Analytical Chemistry	4
CHEM 3310	Physical Chemistry	4
CPSC 1100	Introduction to Computer Literacy	3
EDUC 4100	Post University Transition	3
ENVI 2305	Environmental Toxicology	3
ENVI 2405	Environmental Legislation	3
ENVI 3112	Environment and Society	3
HSCI 3225	Nutrition	3
HORT 3310	Entomology	3

Credential Awarded

Upon successful completion of this program, students are eligible to receive a **Bachelor of Science (Honours), Major in Biology**.