

LIFE SCIENCES

Program Notes

Subject Code for Anatomy: **ANAT**

Subject Code for Biochemistry: **BCHM**

Subject Code for Cancer Research: **CANC**

Subject Code for Cardiorespiratory Science: **CRSS**

Subject Code for Drug Discovery and Human Toxicology: **DDHT**

Subject Code for Life Sciences: **LISC**

Subject Code for Microbiology and Immunology: **MICR**

Subject Code for Neuroscience: **NSCI**

Subject Code for Pathology and Molecular Medicine: **PATH**

Subject Code for Pharmacology and Toxicology: **PHAR**

Subject Code for Physiology: **PHGY**

Subject Code for Community Health and Epidemiology: **EPID**

Subject Code for Reproduction and Development: **REPD**

World Wide Web Address: www.healthsci.queensu.ca/lisbchm/life_sciences (https://www.healthsci.queensu.ca/lisbchm/life_sciences/)

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Overview

The hallmark of the Life Sciences program is a unique blend of disciplines represented by basic and clinical biomedical science departments in the Faculty of Health Sciences. These departments include Biomedical and Molecular Sciences, Public Health Sciences, and Pathology and Molecular Medicine, in collaboration with the Cancer Research Institute, the Centre for Neuroscience Studies, the Cardiac, Circulation and Respiratory Group, and the Research Group in Reproduction and Development.

The subjects that fall under the umbrella of the Life Sciences program include traditional biomedical disciplines devoted to the anatomical, biochemical, epidemiological, immunological, microbiological, pathological, pharmacological, and physiological sciences. In addition, there are Sub-plans dedicated to contemporary trans-disciplinary themes in the cardiovascular and respiratory sciences, drug development and human toxicology, cancer biology and genetics, and neuroscience.

The Department of Biomedical and Molecular Sciences is responsible for *Biochemistry Plans* (General (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments->

<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/biochemistry/biochemistry-general-science-bs/>)/Minor (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/biochemistry/biochemistry-minor-science/>) (Science), Major (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/biochemistry/biochemistry-major-science-bs-honours/>), Specialization (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/biochemistry/biochemistry-specialization-science-bs-honours/>)) and plays a primary role in the *Life Sciences Plans* (General (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-general-science-bs/>)/Minor (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-minor-science/>) (Science), Major (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-major-science-bs-honours/>), Specialization (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-specialization-science-bs-honours/>)). The Department is a unique amalgam of scientists and teachers who share a common goal: to ameliorate the consequences of disease and trauma by training the next generation of health care scientists and professionals. To meet this goal, the Department draws on the depth and breadth of the scientific expertise of its members. Contemporary courses are offered in the anatomical, biochemical, microbiological, immunological, pharmacological, and physiological sciences and in a wide range of cross-disciplinary studies (e.g. cardiovascular and respiratory sciences, drug development, cancer biology and genetics, and neuroscience). These courses are integral to the various Biochemistry and Life Sciences Plans.

Program Policies

Laboratory Safety

Departmental Safety Rules are strictly enforced. A standard white laboratory coat is required for all laboratory courses. Shoes must be closed at both heel and toe. Additional safety requirements will be described at the first laboratory in each laboratory-based course.

Access to Third and Fourth Year Courses

Students in the Life Sciences Specialization Plan (LISC-P-BSH) (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-specialization-science-bs-honours/>) will be given priority enrolment to those courses that are required to meet third- and fourth-year core and option requirements. Students in



both the Life Sciences Specialization (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-specialization-science-bs-honours/>) and the Life Sciences Major Plans (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-major-science-bs-honours/>) (LISC-P-BSH and LISC-M-BSH) should further note that a minimum cumulative GPA of 2.50 is a required prerequisite to access those fourth-year courses to complete these Plans. See Academic Regulations (<https://queensu-ca-public.courseleaf.com/arts-science/academic-regulations/#text>) **2.4** and **2.6**.

Advice to Students

Students should seek **academic counselling** from staff in the Associate Dean's office:

Course Prefix	Counsellor	Contact Information
BCHM and LISC	Katherine Rudder	lifesci@queensu.ca
BCHM and LISC	Beatriz Sugarman	biochem@queensu.ca

Students may also seek **academic counselling** from one of the counselors listed below.

Course Prefix	Counsellor	Contact Information
ANAT	Leslie MacKenzie	mackenzl@queensu.ca
BCHM	Laura van Staaldin	lmd2@queensu.ca
CANC and PATH	Christopher Nicol	nicolc@queensu.ca
CRSS	Shetuan Zhang	shetuan.zhang@queensu.ca
EPID	Ana Johnson	ana.johnson@queensu.ca
DDHT and PHAR	Nikki Philbrook	nikki.philbrook@queensu.ca
MICR	Christopher Lohans	christopher.lohans@queensu.ca
NSCI	Fernanda de Felice	fernanda.defelice@queensu.ca
PHGY	Alan Lomax	lomaxa@queensu.ca

- The Biomedical Discovery Sub-plan (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-specialization-science-bs-honours/#Biomedical-Discovery-SubPlan>) is recommended to students who wish to gain advanced laboratory experience or experiential learning in Anatomy or Epidemiology/Public Health or Immunology or Microbiology or Pathology or Pharmacology or Physiology, or Reproduction and Development.
- The Biomedical Sciences Sub-plan (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-specialization-science-bs-honours/#Biomedical-Sciences-SubPlan>) provides more

flexibility in choice of options and electives than other sub-plans, and is recommended to students who wish to obtain a wide-ranging foundation in the life sciences with opportunities for advanced study in selected topics.

The remaining four sub-plans are devoted to contemporary trans-disciplinary streams and place a high premium on laboratory-based research and seminar-based learning.

- The Cancer Sub-plan (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-specialization-science-bs-honours/#Cancer-Research>) is recommended to students who wish to proceed to graduate studies and research in Cancer Biology and Genetics. Students intending to take this sub-plan should consult the list of option courses required for completion of the program, and consider appropriate courses in Year 3.
- The Cardiorespiratory Sub-plan (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-specialization-science-bs-honours/#Cardiorespiratory-Science>) is recommended to students who wish to proceed to graduate studies and research in the cardiovascular and respiratory sciences. Students intending to take this sub-plan should complete PHGY 355 Biomedical Respiratory Physiology/3.0 in Year 3.
- The Drug Discovery and Human Toxicology Sub-plan (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-specialization-science-bs-honours/#Drug-Discovery&Human-Toxicology>) is recommended to students who are interested in enriched study in the fields of drug discovery and development as well as in mechanisms of drug and toxicant action. Students will gain advanced knowledge which will make them competitive for graduate studies and marketable in particular employment areas (e.g. government regulatory agencies and pharmaceutical companies).
- The Neuroscience Sub-plan (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-specialization-science-bs-honours/#Neuroscience>) is recommended to students who wish to proceed to graduate studies and research in the neurosciences. Students intending to take this option should complete either NSCI 323 Foundational Neuroscience/3.0 or NSCI 324 Systems Neuroscience/3.0 in Year 3. It is strongly recommended that students in this sub-plan complete both courses.

Life Sciences Major Plan (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/life-sciences/life-sciences-major-science-bs-honours/>) is recommended to students who wish to pursue

a wider range of study than is possible with the Life Sciences Specialization Plan. Access to specialized courses at the 400 level may be limited, with priority given to students in the Life Sciences Specialization Plan program.

Preparation for a Teaching Career

Students wishing to enter teaching as a career are advised to consult the Faculty of Education concerning the prerequisites for the B.Ed. program options.

Note Students enrolled in this program will be required to work with animals and tissues obtained from animals.