Life Sciences and Biochemistry

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Life Sciences and Biochemistry

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Faculty of Health Sciences
Faculty of Arts and Science

Biology
Chemistry
Geology
SKHS
Math
Physics
Psychology

Faculty of Health Sciences

Medicine
Nursing
Rehabilitation Therapy

LISC & BCHM
Faculty of Arts And Science

1st year declared ...
Direct Entry
- Music
- Kinesiology
- Fine art
- Physical and Health Education

1st year undeclared ....
Not Direct Entry
- Social Sciences
- Life & Physical Sciences (e.g., LISC and BCHM)
- Humanities
- Languages
- Creative Arts
- Interdisciplinary Programs
**What is “Life Sciences” at Queen’s?**
This is a highly sought after undergraduate program that offers students both lecture instruction and laboratory opportunities to learn about human life. With courses ranging from the anatomy and physiology of the organs in our bodies to the bacteria and viruses that compromise organ functions to the cells that give rise to carcinomas to the drugs used to cure us of infection and disease.

**What is “Biochemistry” at Queen’s?**
This undergraduate program offers students a unique opportunity to learn about the machinery in cells that governs their shape, movement, and functional importance, as well as how this machinery is altered in response to injury and disease.
LIFE SCIENCES (LISC)

Anatomy and Cell Biology
Cancer Biology
Biochemistry
Epidemiology and Community Health
Microbiology and Immunology
Neurosciences
Pathology and Molecular Medicine
Pharmacology and Toxicology
Physiology
Etc!

BIOCHEMISTRY (BCHM)

Biochemistry
Chemistry
+ Cell Biology
Microbiology and Immunology
Pathology and Molecular Medicine
Pharmacology and Toxicology
Physiology
Etc!

Faculty who teach in LISC and BCHM are in ...

Department of Biomedical and Molecular Sciences
Department of Pathology and Molecular Medicine
Department of Public Health Sciences
+ Departments of Biology, Chemistry, Mathematics, Physics, etc
Entry into 2\textsuperscript{nd} year LISC requires:

- GPA greater than 2.0
- (automatic acceptance GPA \geq 3.2)
- Pass in 1\textsuperscript{st} year Chemistry
- No less than 27-unit load

Entry into 2\textsuperscript{nd} year BCHM requires:

- GPA greater than 2.5
- (automatic acceptance GPA \geq 2.9)
- Pass in 1\textsuperscript{st} year Chemistry
- No less than 27-unit load

Maximum combined enrolment in Sept 2018 ... 440

*Pending list* between automatic acceptance and final class list – last week of May
DEGREE PLAN:

Life Sciences – Major (Science) - Bachelor of Science (Honours)
LISC-M-BSCH

(core courses / option or supporting courses)

1st Year

BIOL 102/103
CHEM 112
MATH 121 or MATH 122
(PHYS 104, 106, or 117)

2nd Year

BCHM 218
CHEM 281/282
MICR 221
PHGY 215/216

3rd Year

No Core Courses

4th Year

No Core Courses

** taking a declared minor??
DEGREE PLAN:

Life Sciences – Specialization (Science) - Bachelor of Science (Honours)  
LISC-P-BSCH

Sub plan - Biomedical Sciences

(core courses / option and supporting courses)

1st Year
BIOL 102/103  
CHEM 112  
MATH 121 or MATH 122 (PHYS 104, 106, or 117)

2nd Year
ANAT 215/216  
BCHM 218  
CHEM 281/282  
MICR 221  
PHGY 215/216

3rd Year
BCHM 315/316 (no lab)  
or  
BCHM 310 (with lab)  
MICR 360  
(or MICR 3rd/4th level)  
STAT 263  
PHAR 340

4th Year
No core

**BCHM 218 – please note this is a pre-requisite for many upper year courses / now offered in summer term**
DEGREE PLAN:

Life Sciences – Specialization (Science) - Bachelor of Science (Honours) LISC-P-BSCH

Sub plan - Biomedical Discovery

(core courses / option and supporting courses)

1st Year
BIOL 102/103
CHEM 112
MATH 121 or MATH 122
(PHYS 104, 106, or 117)

2nd Year
ANAT 215/216
BCHM 218
CHEM 281/282
MICR 221
PHGY 215/216

3rd Year
BCHM 310 (lab)
MICR 360
(or MICR 3rd/4th level)
STAT 263
PHAR 340

4th Year
499 Research Project in ANAT, CANC, EPID, MICR, NSCI, PATH, PHAR, or PHGY
PHAR 450
DEGREE PLAN:

Life Sciences – Specialization - Bachelor of Science (Honours) LISC-P-BSCH

4 Sub plans

(core courses shown)

3rd Year
BCHM 310 (lab)
MICR 360
(or MICR 3rd/4th level)
STAT 263
PHAR 340
Combined BScH/MSc Accelerated Program

Combined BScH/MSc (Biomedical & Molecular Sciences)

The Department of Biomedical & Molecular Sciences is very excited to launch a new initiative which offers a combined program of a BScH/MSc (Biomedical & Molecular Sciences). This program offers an opportunity for students in the 4th year of their Honours program (Biomedical Discovery stream of the Life Sciences or Biochemistry programs) to take up to 2 courses in Biomedical & Molecular Sciences at the graduate level which would then allow these students to enter the graduate program with advanced standing. Research begun in the 4th year thesis project could be carried forward as a foundation for the graduate thesis, which would create an opportunity for exceptional students to complete the graduate degree within 4 terms.

Admission to the combined program is a two-step process.

Step 1:

Students will have the option to apply for admission to the combined program (permission to take graduate level courses) in the winter term of the 3rd year, in parallel with the process for admittance to the Honours year and the thesis research project. All applications will then be reviewed by the DBMS Graduate Admissions Committee.

If accepted into the combined program, in Year 4 of the BSc (Honours) program students will be permitted to take up to two 3.0 graduate level courses for a total of 3 or 6 credits towards the 12 credits required for the MSc degree. It is the student's responsibility to gain admission to these graduate courses following acceptance into the program. These courses will be counted as electives or science options towards completion of the degree requirements in the BSc (Hons) program. Only 1 of these courses may be a combined undergraduate/graduate (400/800) level course. The second (and all subsequent) graduate courses must be graduate only (800 and/or 900 level).

Step 2:

For admission to the MSc program in Biomedical & Molecular Sciences with advanced standing, students will be expected to complete the standard SGS application process, have an overall A- average in the previous 2 years of their undergraduate program, and have demonstrated significant research productivity in the 4th year thesis project. In order for the student to be granted advanced standing in the M.Sc. degree program, they must have received a final grade of at least B+ (B plus) in the graduate course(s) taken during the 4th year and meet all other requirements for admission to the MSc program in Biomedical & Molecular Sciences.

Applications:

Students should apply in writing via email to (Dr Louise Winn: winnl@queensu.ca) with a copy to the Graduate Assistant Diane Sommerfeld (diane.sommerfeld@queensu.ca) and at that time should provide a copy of their transcript, a brief description (1 Paragraph) of their research project, the name of their Project Supervisor, and identify the graduate level courses they hope to enroll in during their 4th year.
DEGREE PLAN:

Biochemistry – Major (Science) - Bachelor of Science (Honours)
BCHM-M-BSCH

(core courses / option and supporting courses)
DEGREE PLAN:

Biochemistry – Specialization (Science) - Bachelor of Science (Honours)
BCHM-P-BSCH

(core courses / option and supporting courses)
DEGREE PLAN:

Biochemistry – Specialization (Science) - Bachelor of Science (Honours) 
BCHM-P-BSCH

Cooperative program
(core courses shown)

3rd Year
BCHM 313
BCHM 315/316
BCHM 317
+ 
3.0 or 6.0 units of 300-level course with lab in 
ANAT, BIOL, BIOM, CHEM, 
LISC, PHAR or PHGY

4th Year
BCHM 411
BCHM 442
+ 
BCHM 421
(8-month placement away)
+ 
BCHM 422
(4-month period at Queen’s)
Final 4-month placement away
(Research Project + Cooperative)

5th Year
BCHM 410
BCHM 432
How about an “exit” strategy?

Did you get an acceptance to medical school in your 3rd year?

Life Sciences – General (Science)
Bachelor of Science
Honours routes of Major or Specialization

Biochemistry – General (Science)
Bachelor of Science
Honours routes of Major or Specialization
Queen's Undergraduate Internship Program (QUIP)

The Queen's Undergraduate Internship Program (QUIP) provides students with a 12-16 month work experience. QUIP internships are paid, professionally supervised, career-related positions designed to offer second or third year students the opportunity to learn about current advances, practices and technologies in business and industry. The program is open to students in the Faculty of Engineering and Applied Science (domestic and international), Faculty of Arts and Science (domestic and international), School of Computing (domestic and international) and the School of Business (domestic only; not for credit). Due to the longer work term (compared to a 4-month co-op), employers are highly motivated to maximize their time and investment. This means that Internship students are offered the opportunity to manage more extensive and significant projects.

Got Questions? Come and see the QUIP Coordinator during QUIP Drop-in Advising Hour – no appointment necessary!

QUIP Drop-in Advising: Every Tuesday and Thursday from 11-12 in the Career Advising and Resources Area (Sept-April)

Eligibility

The program is open to students in the Faculty of Engineering and Applied Science (domestic and international), Faculty of Arts and Science (domestic and international), School of Computing (domestic and international) and the School of Business (domestic only - please see an academic advisor in the School of Business before registering).

- Queen’s students can participate in QUIP after their 2nd or 3rd year of studies and must be returning to complete their final academic term after the internship.
- Students must have a minimum GPA of 1.9 and the permission of your undergraduate chair to register in QUIP.
Some recent examples of possible internships ...

The Centre for Drug Research and Development in Vancouver is hiring for multiple 12-month internships to start in May 2017, such as Pharmacology Toxicology Intern, Data Integrity Intern, Biologics Screening Intern, Formulations Intern, Biologics Molecular Intern, and Screening Intern. These opportunities close on January 23.

PnuVax Biopharmaceuticals, a vaccine company in Montreal, is hiring multiple students for the 12-month role of Biotechnology Intern to start in May 2017. They are looking for students with an interest in hands-on laboratory work, attention to detail, and strong writing skills. This opportunity closes February 15.

Hydro One in Toronto is hiring 2 students for a 12-16 month internship starting in May as an Environmental Planner. They are targeting students in science disciplines related to Biology and Environmental Science. This opportunity closes on January 30.
Online Bachelor of Science

A General Bachelor of Science plan is a concentration of 48 units in one subject area and 42 units of electives taken from other subject areas. Queen's Arts and Science Online currently offers the following online Bachelor of Science degree plan:

- Bachelor of Science (General) in Life Sciences

Visit the Courses page to see the range of options for your electives. Please note that the option courses listed below may not be offered every year, and that you are not required to take all of them to complete your degree. You simply need to take just enough to meet the elective requirement in your chosen plan.

- Admission Requirements (Online Bachelor of Science)
- Life Sciences Program Plan

Upcoming Key Dates

- November 6, 2015
  Fall and Fall/Winter Exam Centre Change Deadline
- November 6, 2015
  Fall Term Academic Drop Deadline
- December 4, 2015
  Fall Term Term End

Apply

The application process for our courses is entirely online. Click on this button to get started.

Apply Now
Australia
New Zealand
United Kingdom
China, Taiwan, Hong Kong
Singapore
France
Sweden
Germany
Netherlands
Etc ...