Biochemistry
MAJOR MAP

Succeed in the workplace

What employers want

The Canadian Council of Chief Executives list the top 6 skills sought by employers as:
1. People skills
2. Communication skills
3. Problem-solving skills
4. Analytical abilities
5. Leadership skills
6. Industry-specific knowledge

Take the time to think about the unique skills you have developed at Queen’s, starting with the skills list here for ideas. Explaining your strengths with compelling examples will be important for applications to employers and further education. For help, check out the Career Services skills workshop.

What can I learn studying BIOCHEMISTRY?

- Knowledge of the chemical and biological processes within the human body and other organisms
- Understanding of organic, analytical and physical chemistry and biology (genetics)
- Understanding of general physics and mathematics
- Ability to use statistics and computer programs for data processing
- Familiarity with a laboratory environment and ability to troubleshoot laboratory equipment and instruments
- Knowledge of quality control and safety regulations
- Quantitative skills to solve quantitative problems
- Oral and written communication to write and summarize reports, along with giving oral presentations
- Time and resource management

Get the help you need

Queen’s provides you with a broad range of support services from your first point of contact with the university through to graduation. At Queen’s, you are never alone. We have many offices dedicated to helping you learn, think and do.

Ranging from help with academics and careers, to physical, emotional, or spiritual resources – our welcoming living and learning environment offers the programs and services you need to be successful, both academically and personally, and Queen’s wants you to succeed! Check out the Student Affairs website for available resources.

Get to know BIOCHEMISTRY

Biochemistry in the 21st century will continue to uncover the biochemical basis for life. Emerging knowledge in biochemistry will help to unravel the molecular basis for diseases such as cancer and hypertension, and in turn lead to the development of new tools for disease detection and new therapies for treatments and cures.

The biochemist applies the basic principles of chemistry, mathematics, physics, and biology to the study of cellular processes; thus a good grounding in these subjects is an integral part of the program. Biochemistry at Queen’s offers a wide scope of diverse topics ranging from molecular genetics and structural biology to the functional basis of enzymes, hormones, and vitamins. These biochemistry courses incorporate an understanding of specific organisms, as well as organ systems such as musculoskeletal and cardiovascular.

The cooperative program in Biochemistry is an option that provides paid work placements totalling 12 months in industry, business, research institutes or government labs providing contacts and experience in the workplace. Participating in the cooperative program requires up to an additional year of study. Biochemistry students in the Specialization plan will undertake 4th year research projects in topics as diverse as protein structure and enzyme function, along with supporting courses.

Queen’s ADMISSION

Students apply to Queen’s Science (QS) through the OUAC (Ontario Universities Application Centre) website (ouac.on.ca). Secondary School prerequisites include English 4U, Advanced Functions 4U, Calculus and Vectors 4U, plus two of Biology 4U, Chemistry 4U, or Physics 4U.

Degree OPTIONS

Bachelor of Science (Honours)
Major/Mins/Specilization in Biochemistry
Bachelor of Science (General)
Internship option available

Course HIGHLIGHTS

The first two years of study in the Biochemistry program involve courses in general chemistry, organic chemistry, mathematics and biology, the latter giving also a first introduction to biochemical themes. The first full complement of courses in biochemistry are offered in the third year program, together with an extensive laboratory course. The fourth year is devoted almost entirely to biochemistry, covering some of the latest advances, and including a large proportion of advanced laboratory experience.

That is a degree from Queen’s.
quartsci.com

“A comprehensive program with a modern experimental approach to science.”

How to use this map

Use the 5 rows of the map to explore possibilities and plan for success in the five overlapping areas of career and academics. The map just offers suggestions – you don’t have to do it all. To make your own custom map, use the My Major Map tool.

A balanced approach leads to long-term success. While you will learn a lot from your studies, taking time to get relevant experience outside of the classroom, build your network, and gain international experience, will position you to be more competitive in your job search or grad school applications.

Get started thinking about the future now – where do you want to go after your degree? Having tentative goals (like careers or grad school) while working through your degree will be important for applications to employers and further education. Sometimes that discovery happens fairly quickly, and for other students it takes some work and time before the “ah-ha!” happens – either way your first year at Queen’s will be a great experience.

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BACHELOR OF SCIENCE (HONOURS) (SPECIALIZATION, MAJOR, MINOR) | BACHELOR OF SCIENCE (GENERAL) | BACHELOR OF ARTS (HONOURS) (MINOR)

2016 - 2017

GET THE COURSES YOU NEED

GET RELEVANT EXPERIENCE

GET CONNECTED WITH THE COMMUNITY

GET THINKING GLOBALLY

GET READY FOR LIFE AFTER GRADUATION

1ST YEAR

In first year take BIOL 102, 103, CHEM 112, MATH 120 or 121, PHYS 106 or 104 or 117.

Each Science Plan will have several required first-year courses, including minors. For details see the Arts and Science Academic Calendar.

Want to enhance your degree? Consider a certificate in Academic Writing or explore other certificates available.

2ND YEAR

In second year take BCHM 218, CHEM 211, 212, 222, 223, STAT 263.

Biochemistry students must meet minimum GPA requirements in their core courses to proceed to fourth year courses, which are listed on the unit website.

Please see the Academic Calendar to ensure you are taking the correct courses.

3RD YEAR

Complete all Plan requirements/core courses. Meet the minimum grade requirements for fourth year BCHM courses.

Take BCHM 313, 315, 316, 317. Specialization students must also take 3.0 units from another 300-level lab.

Need help mapping all of your core, option, supporting and elective courses (including those not listed above) to make sure you will have what you need to complete your degree? Use the Course Mapping Tool on the Arts and Science website.

4TH OR FINAL YEAR

Specialization students must take BCHM 411, 411, 421, 422, 432, 442. Majors must take BCHM 410, 411, 432, 441.

By fourth year you should be working on your remaining option and elective courses. Make sure to map your minor and / or certificate(s) as well.

Apply to graduate in SOLUS.

Consider applying to our unique 8 month biochemistry co-op program to a 12-16 month QUIP internship between your third and fourth year.

Investigate requirements for full-time jobs or other opportunities related to careers of interest.

Assess what experience you’re lacking and fill in gaps with volunteering, clubs, or internships – check out the Career Services skills workshop for help.

Consider joining professional associations like the Canadian Society for Biochemistry and Molecular Biology and the International Union of Biochemistry and Molecular Biology.

Join groups on LinkedIn reflecting specific careers or topics of interest in Biochemistry.

Prepare for work or studies in a multi-cultural environment by taking QUIC’s Intercultural Competency Certificate, and research possible immigration regulations.

International students interested in staying in Canada can speak with an International Student Advisor.

Apply for program options that are needed for other adventures. Get help from Career Services with job searching, resumes, interviews, grad school applications, or other decisions. Attend Town Hall meetings offered by the Associate Dean and provide input into the Program.

Where could I go after graduation?

Academia

Agricultural sciences

Biomedical engineering

Biototechnology

Business

Dentistry

Education

Epidemiology

Food science and technology

Forensic science

Forestry

Genetics

Graduate studies

Journalism

Law

Medicine

Nutrition & dietetics

Pharmacy

Pharmaceuticals

Public health

Medical research

Sales, retail and wholesale

Textile industry

Veterinary medicine

Some careers may require additional training.

Visit careers.queensu.ca/majormaps.html for the online version with links!