The Biochemistry program provides students with in-depth training in a wide range of essential topics related to fundamental cellular processes, including cellular metabolism, movement, replication, repair, and communication, and the molecular and genetic basis of infection and disease. The Biochemistry program offers opportunities for students to explore rapidly expanding fields in molecular genetics, bioengineering, and regenerative medicine through hands-on training with professors in research labs. This program also provides students with in-depth training needed to prepare them for entry into graduate programs, industry, and a wide array of careers in the biomedical sciences, education, medicine, and biotechnology.

**TOP 5 Reasons To Study Biochemistry**

1. Gain knowledge of chemical and biological processes within the human body and other organisms.
2. Work directly in our laboratories to become familiar with all types of equipment.
3. Build specific skills that employers are looking for in the industry.
4. Learn from top professors, who conduct research on cancer, reproductive health, and infection and disease.
5. Our internship program (QUIP) offers a range of careers to explore and companies to learn from.

**2023-24 Plan Thresholds**

Thresholds are made on a competitive basis and are updated annually. To see the thresholds for all programs as well as the latest information, please visit quartsci.com/planselection.

Interested in finding out how to augment your degree with Experiential Learning? Learn what opportunities and resources are available for you on the Experiential Learning website. You can also reach out to the team directly at asc.el@queensu.ca.

**TOP ALUMNI JOBS**

- 5% of alumni work in **GOVERNMENT**
- 11% of alumni work in **PHARMACEUTICALS**
- 17% of alumni work in **HEALTH CARE**
- 40% of alumni work in **EDUCATION & RESEARCH**

**Alumni Story**

“Biochemistry is a program designed to challenge you but is incredibly rewarding. The courses, especially lab-based courses, teach you desirable skills that are highly transferable, such as data analysis and common biochemistry techniques. For students interested in research, I highly recommend doing a 4th year specialization project - it was this project that made me want to stay for a masters and PhD degree! Although the courses on this Major's Map may seem like a lot, balance your degree with fun electives and extracurricular clubs to make the most of your university experience (I highly recommend the Biochemistry Department Student Council).”

-Kody Klupt, Biochemistry Specialization Grad

**Acquire Skills. Gain Experience. Go Global.**

That is a degree from Queen's.

healthsci.queensu.ca/liscbchm
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.

GET THE COURSES YOU NEED
Direct entry students (QL) will have the chance to explore the foundations of Biochemistry in biology, chemistry, math and physics along with CGG 151/3U and PATH120/3U or BCHM 102/3U in first year. Students transferring into Biochemistry in second year (QS) will have the chance to explore the foundations of Biochemistry in biology, chemistry, math and physics along with some electives. Interested in getting a head start in learning and working in a digital world? Take ASCY 110 and develop future-ready skills!

GET RELEVANT EXPERIENCE
Join teams or clubs on campus such as Let’s Talk Science and Queen’s First Aid. See the AMS Clubs Directory or the Queen’s Get Involved page for more ideas.

GET CONNECTED WITH THE COMMUNITY
Volunteer on- or off-campus with different community organizations, such as Science, Technology, and the Queen’s iGEM team. Consider becoming a tutor or mentor through the ASUS programs.

GET THINKING GLOBALLY
Prepare for work or studies in a multi-cultural environment by taking QUIC’s Intercultural Competency Certificate, and research possible immigration regulations. Speak to a QUIC advisor to get involved in their programs, events, and training opportunities.

GET READY FOR LIFE AFTER GRADUATION
Attend Majors Night to learn more about Biochemistry program. Wandering about career options? Check out Career Services. Attend Information Sessions in November and January offered by the Associate Dean, Life Sciences, Biochemistry, and Health Sciences.

2ND YEAR
Gain an understanding of the building blocks of cells, how they interact and function to sustain life, and how we can study them. Learn more about the Curriculum and Internship options. Want to make sure your academics are where you want them to be? Visit SASS (Student Academic Support Services) and the Writing Centre for some help. Develop your entrepreneurial skills by participating in the Teams: Changemaker Challenge (ASCY 200/300).

3RD YEAR
Receive in-depth exposure to all areas Biochemistry and Molecular Biology. Cell Biology, including extensive hands-on laboratory experience. Meet with an Academic Advisor in the Life Sciences and Biochemistry Program Office to make sure you are on track and have planned out your courses for next year.

4TH OR FINAL YEAR
In fourth year you will develop skills of inquiry on advancing biochemical applications in industry and academia, and explore governmental regulations and ethics in research practice and information dissemination to the public. SSP students will have the chance to participate in an honours thesis project that can lead to a Graduate School or a future career in Medicine, Health Research, or Biotechnology, to name a few. Interested in working on a real-world problem with an actual client? Take ASCY 490 and develop your consulting and project-management skills.

What will I learn?
A degree in Biochemistry can equip you with valuable and versatile skills that employers seek, such as:

- Knowledge of the chemical and biological processes within the human body and other organisms
- Understanding of organic, analytical, and physical chemistry and biology (genetics)
- Ability to use statistics and computer programs for data processing
- Familiarity with a laboratory environment and ability to troubleshoot laboratory equipment and instruments
- Quantitative skills to solve scientific problems
- Oral and written communication to write and summarize reports, along with giving oral presentations
- Time and resource management
- Work experience to help identify career interests

Where can I go?
A degree in Biochemistry can take your career in many directions. Many students choose to continue their academic inquiry with a Master’s degree. Our students are equipped with a strong foundation for careers in:

- Agricultural sciences
- Biotechnology
- Business
- Drug development
- Epidemiology
- Genetic counseling
- Health administration
- Food science and technology
- Law
- Medicine
- Nutrition & dietetics
- Public health
- Veterinary medicine

Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.

Consider a 12-16 MONTH QUIP INTERNSHIP
Investigate requirements for full-time jobs or other opportunities related to careers of interest. Assess what experience you’re lacking and fill gaps with volunteering, clubs, or internships. Explore different careers of interest in Biochemistry. Talk to Career Services about work through ASCY 490 and develop your consulting and project-management skills.

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.

Volunteer during the summer, work in a laboratory, or apply for an external summer research opportunity. Consider entrepreneurial opportunities via programs like the Queen’s Innovation Centre Summer Initiative (QSSI) and the Summer Company program. Consider applying to a 12-16 month QUIP internship between your third and fourth year.

Go to conferences such as the Canadian Undergraduate Conference on Healthcare if interested. Do targeted networking with alumni working in careers of interest by joining the LinkedIn group Queen’s Connects. Connect with professors at events or workshops hosted by the DSC.

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Visit the ASCY 200/300 website for more information and contact the Associate Dean and provide input into the Program.

Consider volunteering at Médecins Sans Frontières (Doctors Without Borders) or Canadian Society for Biochemistry and Molecular Biology. Many students choose to continue their academic inquiry with a Master’s degree. Our students are equipped with a strong foundation for careers in:

- Agricultural sciences
- Biotechnology
- Business
- Drug development
- Epidemiology
- Genetic counseling
- Health administration
- Food science and technology
- Law
- Medicine
- Nutrition & dietetics
- Public health
- Veterinary medicine

Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.
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 can help with short-term decisions about courses and experiences, but also help you keep motivated for success.

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. Queen's wants you to succeed! Check out the Student Affairs website for available resources.

Why study in Kingston?

For 175 years, our community has been more than a collection of bright minds – Queen's has attracted students with an ambitious spirit. Queen's has the highest retention rates, the highest graduation rates, and one of the highest employment rates among recent graduates. We are a research intensive university focused on the undergraduate experience. The BBC has identified Kingston as one of the GREATEST UNIVERSITY TOWNS in the world – and it is often awarded the safest city in Canada. It is a university city at the core; just a quick drive to Toronto, Montreal, Ottawa and even New York. A university with more clubs per capita than any other university in Canada, and a city with more restaurants per capita than any other city in North America – you will have the experience of a lifetime at Queen's – and graduate with a degree that is globally recognized among the best.