Biochemistry

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

add a CERTIFICATE

- Data Analytics
- Disability and Physical Activity
- Employment Relations
- Entrepreneurship, Innovation and Creativity
- French for Professionals
- Geographic Information Science
- Global Action and Engagement
- Indigenous Languages and Cultures
- International Studies
- Media Studies
- Sexual and Gender Diversity
- Urban Planning Studies

QUartsci.com/certs

Acquire Skills. Gain Experience. Go Global.

That is a degree from Queen's.

healthsci.queensu.ca/liscbchm

2023-2024

Biochemistry MAJOR MAP

BACHELOR OF SCIENCE (HONOURS): SPECIALIZATION , MAJOR, MINOR

Queen's UNIVERSITY

	1ST YEAR	2ND YEAR	3RD YEAR	4TH OR FINAL YEAR
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 CISC 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 ASCX 150 and develop future-ready skills!	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 Certificates 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 Dean's Changemaker Challenge (ASCX 200/300).	Receive in-depth exposure to all areas of 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.	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 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 ASCX 400 and develop your consulting and project-management 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.	Consider taking more responsibility within clubs or extracurriculars, like Queen's LifeBeat Newspaper. Look into summer jobs by talking to the department or Career Services about work through SWEP or NSERC. Consider entrepreneurial opportunities via programs like the Queen's Innovation Centre Summer Initiative (QICSI). Consider volunteering at Student Wellness Services or other health centers.	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 (QICSI) and the Summer Company program. Consider applying 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. Participate in Inquiry @ Queen's undergraduate student conference.
GET CONNECTED WITH THE COMMUNITY	Volunteer on- or off-campus with different community organizations, such as Science Rendezvous and the Queen's iGEM Team. Consider becoming a tutor or mentor through the ASUS programs.	Get involved with the BCHM Student Council. Connect with professors at socials or attend speaker events. Start or continue volunteering with organizations such as Médecins Sans Frontières (Doctors Without Borders) or Canadian Undergraduate Conference on Healthcare (CUCOH).	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.	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.
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.	Is an exchange in your future? Start thinking about where you would like to study abroad. Apply in January for a third year exchange through the International Programs Office.	Build your intercultural competence by getting involved with other cultures or by practicing and improving your language skills.	International students interested in staying in Canada can speak with an International Student Advisor.
GET READY FOR LIFE AFTER GRADUATION	Attend Majors Night to learn more about Biochemistry program. Wondering 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.	Explore different careers of interest in the Career Services Information Area. For more information, connect with alumni on LinkedIn and Career Cruising. Attend Canadians Studying Medicine Abroad hosted by the Associate Dean, Life Sciences, Biochemistry, and Health Sciences.	Start focusing on areas of interest. Research education requirements for careers of interest. If needed, prepare to take any required tests (like the MCAT or GMAT) and get help thinking about grad school from Career Services.	Apply to jobs or future education, or make plans 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.

CONSIDER A 12-16 MONTH QUIP INTERNSHIP

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 quantitative problems
- Oral and written communication to write and summarize reports, along with giving oral presentations
- Time and resource management
- Work experience to help identify careers of interest

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.

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.

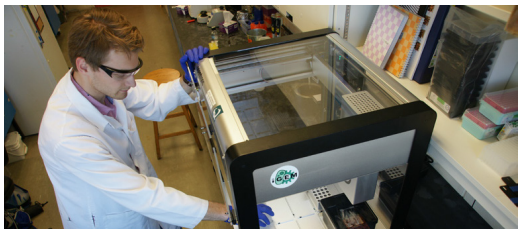
Biochemistry

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.



Queen's UNIVERSITY ARTS AND SCIENCE

Faculty of Health Sciences
Botterell Hall, Room 815
18 Stuart Street
613-533-2900
healthsci.queensu.ca/liscbchm

QUIP QUEEN'S UNDERGRADUATE INTERNSHIP PROGRAM

START DATES	POSITIONS	WORK TERMS
in May, September, or January	are paid and full-time	are 12-16 months long

PROGRAM OVERVIEW

- Graduate with a "Professional Internship" degree
- Learn about current advances, practices and technologies in business and industry.
- Test drive a career, earn a competitive salary, and get real world experience.

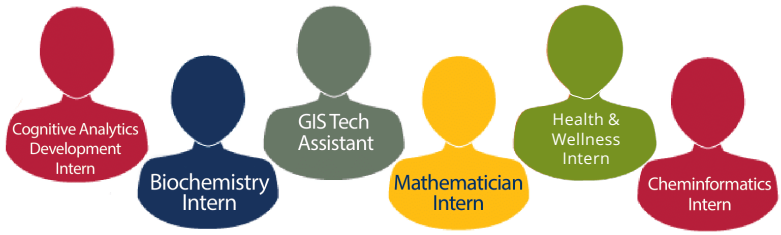
ELIGIBILITY

- 2nd or 3rd Year Students
- Minimum GPA of 1.9

WHY QUIP?

- Gain a year of career-related work experience.
- Build network connections.
- Receive support from Queen's staff in job search and during internship.

SAMPLE PAST INTERNSHIPS



For more information, contact quip@queensu.ca or visit the Program Website.

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.