BIOTECHNOLOGY
Specialization, Bachelor of Science (Honours) degree PLAN

Sample Year by Year

1ST YEAR
- BIOL 102/3.0
- BIOL 103/3.0
- BIEM 112/6.0
- MATH 121/6.0 or MATH 120/6.0 or MATH 123/3.0 and MATH 124/3.0
- 12.0 units of electives

2ND YEAR
- BIOL 205/3.0
- BIOL 206/3.0
- BCHM 218/3.0
- BIOL 243/3.0 or STAT 269/3.0
- 6.0 units from CHEM at the 200 level or above; BIOL 334/3.0
- BIOL 207/3.0 and BIOL 208/3.0 or 6.0 units from BCHM 270/3.0, MICR 221/3.0, MICR 270/3.0, PHAR 270/3.0, PHGY 215/3.0, PHGY 216/3.0
- 6.0 units of electives

3RD YEAR
- 6.0 units from BIOL 339/3.0, BIOL 344/3.0, BIOL 341/3.0
- BIOL 330/3.0
- BIOL 331/3.0 or BIOL 402/3.0
- BIOL 403/3.0 or BIOL 404/3.0
- 12.0 units of BTEC options
- 3.0 units of electives

4TH YEAR
- 3.0 units from BIOL 350/3.0, BIOL 354/3.0, BIOL 509/3.0, BIOL 510/3.0
- 12.0 units of BTEC options or BIOL 537/12.0 or BIOL 541/12.0
- 6.0 units of BTEC options
- 9.0 units of electives

Note that degree requirements are revised regularly. The most current requirements, including course lists and options, are available in the Academic Calendar at: Quartsic.com/academic-calendar

The four-year Biotechnology (BTEC) degree plan is a Specialization Plan with a focus on this highly active and rapidly changing area of applied research. The plan balances conceptual and practical learning experiences at a broad range of scales of biological organization — from microbes to ecosystems — embracing the diversity of life forms that can be used to improve agriculture, medicine and the environment, among other things.

16% of alumni work in HEALTH CARE
13% of alumni work in BUSINESS & LAW
10% of alumni work in GOVERNMENT & NON-PROFIT
35% of alumni work in EDUCATION

"The Queen’s Biology program was very well-rounded and definitely played a major role in helping to get where I am today. Not only did I learn a lot from the courses, but I also had the opportunity to do an independent research project and spend a summer doing fieldwork at Queen’s University Biological Station."
-Sharon Zhang, BScH ’13

2018-19 thresholds
1.9 cGPA PENDING LIST
NO AUTOMATIC ACCEPTANCE

*Thresholds are made on a competitive basis and are updated annually. For the latest information please visit Quartsic.com

Queens University
Faculty of Arts and Science
Bioscience Complex
116 Barrie Street
613-533-4100
biology.queensu.ca
**BIOTECHNOLOGY SPECIALIZATION MAP**

### 1ST YEAR

- **GET THE COURSES YOU NEED**
  - In first year you will have the chance to explore the foundations of Biology in biology, chemistry, geography and geology along with some electives. See the back page for specific courses to consider.
  - Attend **Majors Night** in the Winter term to learn more about plan options.

- **GET RELEVANT EXPERIENCE**
  - Join teams or clubs on campus such as **Queen’s First Aid**, the Queen's Association for Technology in Medicine and Biology (QATMB), and the Queen's Genetically Engineered Machine Team (QGEM) and the Queen's Synthetic Biology Organization (QSYNBO). 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 **Queen’s Health Outreach**, **Let’s Talk Science**, and **Women in Science & Engineering at Queen’s University** (WISE).

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

- **GET READY FOR LIFE AFTER GRADUATION**
  - Grappling with program decisions? Go to **Majors Night** or get some help considering career options from Career Services.
  - Build your transferable skills in time management, problem-solving, writing and more with **Student Academic Success Services**.

### 2ND YEAR

- **GET THE COURSES YOU NEED**
  - Start going deeper into the discipline of Biology, while considering a minor and/or certificate such as **French for Professionals**, **FRENCH**. Attend Degree + in the Fall term to 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.

- **GET RELEVANT EXPERIENCE**
  - Volunteering is a great way to get practical experience and build your CV towards getting Biology jobs during your degree.
  - Look into summer jobs by talking to the department or **Career Services** about work through **SWEPC or NSERC**.

- **GET CONNECTED WITH THE COMMUNITY**
  - Get involved with the Departmental Student Council (DSC). Start or continue volunteering with organizations.
  - If interested, attend conferences and talks like the **Canadian Undergraduate Conference on Healthcare (CUCOH)**.

- **GET THINKING GLOBALLY**
  - 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**.
  - Look into a **BIOL 307/317** Field Biology International Program.

- **GET READY FOR LIFE AFTER GRADUATION**
  - Explore different careers of interest by reading books in the Career Services Information Area, such as Opportunities in Biotechnology Careers. For more information check out **Career Cruising** or by finding and connecting with alumni on **LinkedIn**.

### 3RD YEAR

- **GET THE COURSES YOU NEED**
  - A chance to start grouping courses in areas of interest, or to keep it more general and explore many areas of Biology. Meet with an **Academic Advisor** to make sure you are on track and have planned out your courses for next year — for some ideas, see the back page.

- **GET RELEVANT EXPERIENCE**
  - Consider applying to research opportunities at **Queen’s University Biological Station** or through the **Biology Undergraduate Summer Awards**. Consider applying to do a 12-16 month **QUIP internship** between your third and fourth year.
  - Think about adding a **Biotechnology Diploma from St. Lawrence College** before completing your fourth year.

- **GET CONNECTED WITH THE COMMUNITY**
  - Do some targeted networking with alumni working in careers of interest by joining the LinkedIn group Queen’s Connects. Check out Career Services networking workshops.
  - Connect with professors at events or workshops hosted by the DSC.

- **GET THINKING GLOBALLY**
  - Build your intercultural competence by getting involved with other cultures or by practicing and improving your **language skills**.

- **GET READY FOR LIFE AFTER GRADUATION**
  - 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.

### 4TH OR FINAL YEAR

- **GET THE COURSES YOU NEED**
  - In fourth year you will have the chance to participate in research-based courses that can lead to **Graduate School** or to your future career path. Make sure to finish up all your courses for your degree and your optional certificate(s).

- **GET RELEVANT EXPERIENCE**
  - 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 at Queen’s undergraduate student conference**.
  - Consider joining professional associations like **Canadian Society for Molecular Biosciences**, **BIOTECanada**, and the **Canadian Society for Ecology and Evolution**.
  - Join groups on LinkedIn reflecting specific careers or topics of interest in Biology.

- **GET CONNECTED WITH THE COMMUNITY**
  - Consider applying to research opportunities at **Queen’s University Biological Station** or through the **Biology Undergraduate Summer Awards**. Consider applying to do a 12-16 month **QUIP internship** between your third and fourth year.
  - Think about adding a **Biotechnology Diploma from St. Lawrence College** before completing your fourth year.

- **GET THINKING GLOBALLY**
  - 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**.
  - Look into a **BIOL 307/317** Field Biology International Program.

- **GET READY FOR LIFE AFTER GRADUATION**
  - Explore different careers of interest by reading books in the Career Services Information Area, such as Opportunities in Biotechnology Careers. For more information check out **Career Cruising** or by finding and connecting with alumni on **LinkedIn**.

### What will I learn?
A degree in Biology can equip you with valuable and versatile skills, such as:
- Develop knowledge of biological functions
- Use laboratory equipment and instruments
- Gain hands-on experience studying biology in the field
- Comply with quality control and safety regulations
- Collect and preserve organisms
- Design experimental studies
- Present literature and research findings in posters and seminars
- Observe and make measurements
- Write, review, and summarize reports/scientific writing
- Analyze and evaluate information
- Statistical analysis of biological data
- Solve quantitative problems

### Where can I go?
A degree in Biology can take your career in many directions. Many students choose to continue their academic inquiry with a Master’s. Our students are equipped with a strong foundation for careers in:
- Agricultural Sciences
- Applied Economics
- Bioinformation
- Bioinformatics
- Fisheries science
- Government regulators
- Medical research
- Pharmaceutical sales
- Pharmacology
- Technology analysts
- Translational research

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