

# Bachelor of Science

## Biochemistry



### ABOUT THE PROGRAM

Biochemistry is the study of processes associated with living cells at the molecular level. A sophisticated knowledge of biochemistry is central to many challenges of today, from biotechnology and genetic engineering to cancer research and drug design. Areas of study include such topics as the relationship of biomolecular structure to function, a molecular-level understanding of the transport of molecules and ions across membranes, and enzymology.

### WHY CO-OP?

As a co-op student, you will gain relevant work experience, build professional networks and develop essential interpersonal skills needed to succeed in the workplace, all while getting paid and earning your university degree. Guelph's co-op program is unique due to the exceptional level of support provided, including an online preparatory course, a personal connection with Co-op Coordinators to assist you during the employment process, and access to senior student mentors.

### COURSE SEQUENCING

In the Biochemistry Co-op program, you will participate in four co-op work terms in addition to eight academic semesters throughout your five years at the University of Guelph. This sequencing is viewable at the bottom of the page.

YEAR	FALL	WINTER	SUMMER
ONE	Academic	Academic	Off
TWO	Academic	Work	Academic
THREE	Academic	Work	Work
FOUR	Academic	Academic	Work
FIVE	Academic		

YEAR	FALL	WINTER	SUMMER
ONE	Academic	Academic	Off
TWO	Academic	Work	Academic
THREE	Work	Academic	Work
FOUR	Academic	Academic	Work
FIVE	Academic		

## SAMPLE JOBS

There is a diverse selection of jobs made available to Biochemistry Co-op students, in government, academia, and the private sector within various industries. You may conduct research, participate in literature searches, assist in data collection and analysis or may work in public health in a clinical setting. Students may work in a laboratory, a hospital, and/or in an office environment. Below are some examples of positions held by Biochemistry Co-op students:

### Laboratory Assistant

The student will be part of a research group investigating compositional and nutritional properties of grains and their food products. Duties will include preparing grain samples. The student will also conduct analyses of nutrients and bioactive compounds such as protein, starch, dietary fiber, polyphenols, etc. Students will also study effects of processing on bioactive components in foods. Finally, they will report and process data.

### Quality Control Technician

Some of your responsibilities include performing analytical product evaluation using various methods to confirm product meets requirements. Tests will include moisture testing, sodium, pH, BRIX, density, total acidity, etc. Students will also perform microbiological evaluation of all products to confirm quality and food safety compliance using plates and film.

### Quality Assurance Specialist

You will be supporting the team objectives through documentation and assisting with activities related to internal departments. Your main functions will be to prepare worksheets and test procedures for the laboratory, prepare and implement standard operating procedures as well as prepare and implement the manufacturing orders for Processing Department.

Additional Sample Jobs: Product Development Chemist, Quality Control Assistant, Medical Research positions, Brewing Industry work, and more.

## SAMPLE EMPLOYERS\*

- STEMCELL Technologies Inc.
- University of Guelph, Department of Molecular and Cellular Biology
- Public Health Agency of Canada
- Wellington Brewery

\*This shows a sample of recent co-op employers, and employers will vary depending on employer recruitment needs. During a job search, students are encouraged to be actively engaged and are also supported in establishing and maintaining their own personal

## SALARY INFORMATION

Students receive compensation from their employer for co-op work terms. The rate of pay will vary depending on a number of factors including the industry, the student's program of study, and work term level. For your reference, a **Co-operative Education Salary Guide** is available on our website, which provides hourly rates (averages and ranges) for each degree program.

## ABILITIES & KNOWLEDGE ACQUIRED

- A sound knowledge of the theoretical foundations of the chemical sub-disciplines of analytical and organic chemistry as well as biochemistry and molecular biology
- Practical laboratory experience in biochemistry including enzymology and laboratory techniques in molecular biology
- Strong written and verbal communication abilities
- Teamwork and laboratory skills