

# Bachelor of Engineering

## Biological Engineering



### ABOUT THE PROGRAM

Biological Engineering students combine their knowledge of life sciences with engineering principles to design and control biological processes and systems. You work independently, and in multi-disciplinary teams, with the aim of enriching lives and maintaining a sustainable environment. You will learn the foundations and build on the skills necessary to positively impact industrial process design and quality control in the agricultural, environmental, food and pharmaceutical sectors. As a biological engineering student, you will have the option to specialize your degree through elective courses in the areas of bioprocessing, biological and environmental waste management, human factors and food engineering.

### 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 in-class preparatory course, a personal connection with a Co-op Co-ordinator to assist you during the employment process, and access to senior student mentors.

### COURSE SEQUENCING

In the Biological Engineering co-op program, you will participate in five co-op work terms in addition to eight academic semesters throughout your five years at the University of Guelph. This sequencing is viewable below:

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



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## SAMPLE JOBS

Below are some examples of past Biological Engineering co-op positions.

### Continuous Improvement Analyst

This position gives you the opportunity to take responsibility for the management of a variety of projects and develop skills in critical thinking and presentation delivery. You will be involved in conducting product trials, evaluating equipment efficiencies, sampling, and consolidating data results.

### Safety, Environment and Security Technician Student

This Safety, Environment, and Security role consists of tracking energy use and implementing energy reduction projects, conducting weekly plant inspections, and facilitating health and safety programs. This includes monitoring all health and safety documentation, assisting with internal audits, and monitoring equipment.

### Laboratory Assistant

This role consists of reviewing and processing laboratory drawings, attending project meetings, and developing technical reports to the Pathogen Regulation division. This includes researching biocontainment engineering literature and reviewing mechanical drawings and specifications.

**Additional Sample Jobs:** Quality Assurance Technician, Process Development Engineer, Research Assistant, Computer Applications work, Biological Materials Processor, Relief Brewer and more.

## SAMPLE EMPLOYERS\*

- Biorem Technologies
- PepsiCo Canada
- McNeil Consumer Healthcare
- Sleeman Breweries

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

## SALARY INFORMATION Average Weekly Salary Range: \$650 - \$800\*

\*Salary ranges are shown as rates before deductions. Statistics are based on jobs held by co-op students in 2017/2018. These ranges may fluctuate on an annual basis in response to economic conditions.

## SKILLS & KNOWLEDGE ACQUIRED

- Strong laboratory techniques and computing skills
- Fundamental knowledge of engineering concepts, as well as physical, mathematical and biological sciences
- Strong independent research skills developed through the design process, management and financial feasibility analysis
- Participation in design groups develops effective problem solving communication and teamwork skills
- Well-developed attention to detail

