

# Bachelor of Science

## Biomedical Toxicology



### ABOUT THE PROGRAM

Biomedical Toxicology concentrates on the effects and mechanisms of action of toxic substances from a variety of perspectives. At Guelph, you will experience a multi-disciplinary approach to toxicology; drawing on the physical, biological, and social sciences. You will study issues such as the risk of cancer from exposure to environmental agents, including both natural and synthetic chemicals, as well as the metabolism of carcinogenic and other toxic substances, and the effects of these substances on DNA. The effects of both natural and synthetic chemicals and their movement, distribution and breakdown in the environment will also be studied.

### 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 a Co-op Coordinator to assist you during the employment process, and access to senior student mentors.

### COURSE SEQUENCING

In the Biomedical Toxicology 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 below:

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

## SAMPLE JOBS

There is a diverse selection of jobs made available to Biomedical Toxicology 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 or field environment. Below are some examples of positions held by Biomedical Toxicology co-op students:

### Research Technician

This exciting opportunity will allow you to participate in a collaborative academic research project directed towards the combined use of oncolytic viruses and immunotherapeutics to treat cancer. You will be involved in experiments designed to better understand and ultimately improve these complementary therapeutic approaches.

### Data Chemical Analyst

This federal government co-op position will focus on atmospheric chemistry data analysis. Duties may include compilation and statistical analysis, in an office setting, of atmospheric concentration data and/or data quality indicators from networks and/or special studies that monitor atmospheric concentrations of toxic substances. You may also prepare figures, tables, and summaries for inclusion in reports and/or papers.

### Regulatory & Scientific Affairs Intern

In this scientific office position, you will compile important regulatory submissions for new drugs, natural health products, and cosmetics to Health Canada for approval of new products. You will also perform ingredient reviews, research scientific articles and conduct presentations on new science and regulations to the team.

Additional Sample Jobs: Chemical Laboratory Technician, Government Policy Analyst, Regulatory Program Evaluator, Biohazard Researcher, Private Sector Consulting Assistant, and more.

## SAMPLE EMPLOYERS\*

- University of Guelph - Department of Molecular and Cellular Biology
- Focal Point Research
- Dainty Foods
- Health Canada - Pest Management Regulatory Agency

\*Sample co-op employer list only. Employers will vary depending on recruitment needs. Students are encouraged to be actively engaged during a job search by applying to various job opportunities through the Experience Guelph job posting system. In addition, students are supported in establishing and maintaining their own personal contacts.

## 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 grounding in organic, analytical, and biochemistry
- Practical laboratory experience in chemical and biological wet-bench techniques, instrumentation and sampling
- Exposure to the theories of toxic action: uptake and metabolism, risk assessment, and pesticides in the environment
- Functional aptitude in trace analysis, statistical analysis, contaminant dose response and comparative