



Life Science That Works

Microscopic organisms, including bacteria, yeast, molds and viruses, are the most abundant forms of life on earth. These organisms play vital roles in our ecosystems as well as within the human body. Students come to learn about the complex interaction of these organisms such that some microorganisms cause disease while others produce antibiotics that remedy disease. At Guelph, an in-depth understanding of the role of microbiology in industrial processes, the production of food, environmental issues and in biological and medical research, provides students with a complete education and an option to specialize in an area of emphasis.

University of Guelph Advantage

The University of Guelph Department of Molecular and Cellular Biology has a reputation for cutting-edge research in areas such as antibiotic resistance, vaccines and immunization, microbial ecology and viruses.

Areas of emphasis include:

- Industrial Food Microbiology
- Environmental Microbiology
- Molecular Microbiology
- Pathogenic Microbiology

Our co-op process responds to your needs. Employers can post, interview and hire throughout the semester and our students are available for 4, 8, or 12 month work terms. The **Experience Guelph** hiring tool makes hiring Guelph co-op students easy!

Student Strengths

- Public health studies and research
- Quality control laboratory work in food, pharmaceutical and brewing plants
- Molecular biology research in hospitals
- Food safety analysis and policy setting

Microbiology Course Sequencing

YEAR	FALL (SEPT-DEC)	WINTER (JAN-APRIL)	SUMMER (MAY-AUG)
ONE	<ul style="list-style-type: none"> • INTRODUCTION TO MOLECULAR AND CELLULAR BIOLOGY • GENERAL CHEMISTRY I • ELEMENTS OF CALCULUS I • PHYSICS FOR LIFE SCIENCES • 1 LIBERAL EDUCATION ELECTIVE 	<ul style="list-style-type: none"> • DISCOVERING BIODIVERSITY • GENERAL CHEMISTRY II • PHYSICS FOR LIFE SCIENCES II • BIOLOGICAL CONCEPTS OF HEALTH • 1 LIBERAL EDUCATION ELECTIVE 	OFF
TWO	<ul style="list-style-type: none"> • INTRODUCTION TO BIOCHEMISTRY • INTRODUCTION TO CO-OPERATIVE EDUCATION • INTRODUCTION TO MICROBIOLOGY • FOUNDATIONS IN MOLECULAR BIOLOGY AND GENETICS • STATISTICS I • 1 LIBERAL EDUCATION ELECTIVE 	<ul style="list-style-type: none"> • STRUCTURE AND FUNCTION IN BIOCHEMISTRY • METHODS IN MICROBIAL CULTURE AND PHYSIOLOGY • MOLECULAR BIOLOGY OF THE CELL • 1 ELECTIVE • 1 LIBERAL EDUCATION ELECTIVE 	WORK TERM ONE
THREE	<ul style="list-style-type: none"> • MICROBIAL CELL BIOLOGY • MICROBIAL DIVERSITY AND ECOLOGY • 2 ELECTIVES OR RESTRICTED ELECTIVES • MICROBIAL PHYSIOLOGY AND GENETICS 	<ul style="list-style-type: none"> • LABORATORY METHODS IN MOLECULAR BIOLOGY • ADVANCED METHODS IN MICROBIOLOGY • 2 ELECTIVES OR RESTRICTED ELECTIVES 	WORK TERM TWO
FOUR	WORK TERM THREE	WORK TERM FOUR	OFF
FIVE	<ul style="list-style-type: none"> • 5 ELECTIVES/RESTRICTED ELECTIVES (MAY INCLUDE RESEARCH PROJECT IN MOLECULAR AND CELLULAR BIOLOGY I) 	<ul style="list-style-type: none"> • 5 ELECTIVES/RESTRICTED ELECTIVES (MAY INCLUDE RESEARCH PROJECT IN MOLECULAR AND CELLULAR BIOLOGY) 	

BASED ON THE 2022/23 UNDERGRADUATE CALENDAR

PLEASE SEE THE CURRENT UNDERGRADUATE CALENDAR FOR MORE INFORMATION