

Biotechnology Technologist – Industrial Microbiology

Program Code: 3622
3632 (co-op)

Program Length: 2 years/4 semesters (3622)
3 years/7 semesters (3632)

Credential: Ontario College
Advanced Diploma

Start: Fall,

Campus: Centennial Science and
Technology Centre

bio@centennialcollege.ca

Program Overview

Qualified college or university graduates gain direct admission into this two-year program, and receive their technologist diploma in four semesters.

Learn scientific principles, techniques and skills to work in industrial microbiology. Specialized study is also included in biotechnology applications, biochemistry, microbial genetics, clinical and environmental microbiology.

Combine theory and technical practice with many opportunities to enhance experience. Project work, in consultation with faculty, helps you develop skills in research, laboratory techniques, report writing and presentation.

You will learn to:

- isolate, enumerate and identify microorganisms from many types of samples (water, soil, air, your body, and food, pharmaceutical and cosmetic products)
- perfect your aseptic techniques
- accurately calibrate and use a range of instruments such as pH and BOD meters, Gas Chromatographs, spectrophotometers (regular/IR/UV), HPLC's, centrifuges, PCR thermocyclers, Gel electrophoresis equipment etc.
- prepare microbiological media and reagents; culture pathogenic microbes; and design and perform advanced microbiology and microbial genetics experiments
- use microorganisms to assay pharmaceutical products
- isolate DNA ; perform gel electrophoresis and PCR (polymerase chain reaction) on samples

CO-OP

This program offers an optional co-op component. Academically-qualified students enhance their education by working two to three terms as paid employees in their field. The experience not only allows you to put classroom learning into practice, but also provides valuable contacts for future careers.

BENEFITS

CAREER OUTLOOK

Besides laboratory work, graduates may choose to use their knowledge in product development, production and sales. The organizations our graduates work for include:

- Hermann Laue Spice Company
- Apotex Inc.
- Agropur – Division Natrel
- MAXXAM Analytics
- bioMerieux Canada Inc.
- Griffiths laboratories
- Cosmetica laboratories Inc.

PROGRAM HIGHLIGHTS

- national accreditation improves the mobility of graduates anywhere in Canada and abroad
- apply for certification through OACETT (Ontario Association of Certified Engineering Technicians and Technologists) to use one of the following professional designations CET (Certified Engineering Technologist) or ASCT (Applied Science Technologist)
- standard and specialized equipment (e.g. autoclaves, incubators, PCR thermocyclers and gel electrophoresis equipment)
- eight ultra-modern labs and lecture facilities
- complete a three-year program in two years (plus time spent in co-op placements)

DEGREE COMPLETION

- qualified graduates are granted access the Honours BSc programs at the University of Toronto - Scarborough or Ryerson University with pre-arranged transfer credits.
- qualified graduates are also eligible for direct entry into local Ontario and other provincial university degree programs. Contact us for the most recent agreements.

CTAB NATIONALLY ACCREDITED PROGRAM

The Biotechnology Technologist – Industrial Microbiology program has met the national technology accreditation requirements established by the Canadian Council of Technicians and Technologists (CCTT) and, as such, has received national accreditation status by the Canadian Technology Accreditation Board (CTAB).

RECOGNITION AS A CERTIFIED ENGINEERING TECHNICIAN/TECHNOLOGIST



OACETT (The Ontario Association of Certified Engineering Technicians and Technologists) recognizes the Biotechnology Technologist – Industrial Microbiology program as meeting all the academic requirements for certification in the Technologist category.

ADMISSION REQUIREMENTS

Applicants to Fast-track programs must submit an official transcript demonstrating proof of successful completion of a post-secondary diploma or degree program in related chemistry/biology or engineering area.

NON-ACADEMIC REQUIREMENTS

- transcript and resumé review may be required
- English and/or math skills assessment may be required

For information on the admission process, please see p. 14.

Notes:

1. Because admission numbers are limited, possessing the minimum requirements does not ensure admission to the program.
2. Students will be required to take a microbiology laboratory preparation/college orientation course offered before semester 3 to prepare

CO-OP REQUIREMENTS

- minimum 2.5 GPA and a C grade in COMM-170/171 is required to qualify for COOP-221 and subsequent co-op work-placements
- departmental academic standards for co-op eligibility also apply

PROGRAM OUTLINE

Semester 3

BI-207	Microbiology Project 1*
BI-208	Food Microbiology*
CH-121	Organic Chemistry*
CH-207	Analytical Chemistry*
ENGL-250	Communication For Technology
COMM-170/171	College Communications 2

Semester 4

BI-206	Microbiology Project 2*
BI-209	Pharmaceutical Microbiology*
CH-203	Food Chemistry*
CH-222	Biochemistry 1*
GNED-500	Global Citizenship: From Social Analysis to Social Action
COOP-221	Employment Replacement (3632)

Co-op Work Term 1 (3632)

Co-op Work Term 2 (3632)

Semester 5

BI-302	Microbial Genetics
BI-303	Microbiology Project 3
BI-312	Applications of Biotechnology
CH-302	Biochemistry 2

Co-op Work Term 3 (3632)

Semester 6

BI-304	Environmental Microbiology
BI-305	Advanced Biotechnology
BI-307	Microbiology Project 4
BI-308	Systematic Microbiology

*minimum C-grade required for entry into semester 5.