

Biotechnology Technician – Industrial Microbiology

Program Code: 3601

Program Length: 2 years/4 semesters

Credential: Ontario College Diploma

Start: Fall

Campus: Centennial Science and
Technology Centre

bio@centennialcollege.ca

Program Overview

This nationally accredited program prepares you to work as a bench technician (in quality control/quality assurance) in the food, pharmaceutical and cosmetic industries. We provide thorough practical training in industrial microbiology as well as chemistry – analytical, organic and biochemistry. Laboratory techniques, including appropriate safety procedures, are extensively highlighted. A special feature of the program is our focus on the project approach, with independently designed microbiology projects that enhance your problem-solving and research skills.

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)
- prepare specimens for staining and become an expert light-microscopist
- become proficient in aseptic handling of materials
- accurately calibrate and use a range of instruments such as pH and BOD meters, Gas Chromatographs, spectrophotometers (regular/IR/UV), HPLC's etc.
- prepare microbiological media and reagents; culture pathogenic microbes; and design and perform your own microbiology experiments
- use microorganisms to assay pharmaceutical products

You may graduate in two years as a biotechnology technician or continue for a third year to study specialized topics such as advanced biotechnology and microbial genetics or systematic microbiology, graduating as a biotechnology technologist.

Fast-track Option

If you have a related science degree/diploma, fast forward to the accelerated options available on pages 136 and 137.

AWARDS

The Biotechnology Technician program is a repeat recipient of the Centennial College President's Academic Program Recognition Award for outstanding student satisfaction.

BENEFITS

PROGRAM HIGHLIGHTS

- national accreditation improves the mobility of graduates anywhere in Canada and abroad
- graduates may apply for certification through OACETT (Ontario Association of Certified Engineering Technicians and Technologists) to use the CTech (Certified Technician) professional designation.
- eight up-to-date laboratories and modern wireless lecture facilities
- thorough laboratory training, starting from the basics up to professional skills
- theory is combined with on-going laboratory work
- high program graduation rate and student satisfaction
- training in Occupational Health and Safety, WHMIS, GMP, HACCP – to industry standards
- qualified and caring faculty and staff provide individual attention in laboratories
- teamwork skills encouraged and developed
- qualified graduates may apply to enter the third year of the Biotechnology Technologist program

CAREER OUTLOOK

Graduates typically start their careers as quality control technicians in a broad-range of industries – food, cosmetics and pharmaceuticals and also in related government agencies

The organizations our graduates work for include:

- Kisko Products
- Hermann Laue Spice Company
- Apotex Inc.
- Agropur – Division Natrel
- Mill Street Brewery
- MAXXAM Analytics
- Campbell Soup Company
- bioMerieux Canada Inc.
- Griffiths laboratories
- Cosmetics laboratories Inc.

CTAB NATIONALLY ACCREDITED PROGRAM

The Biotechnology Technician – 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 Technician – Industrial Microbiology program as meeting all the academic requirements for certification in the Technician category.

ADMISSION REQUIREMENTS

Centennial College expects students applying for admission to certificate or diploma programs to present at minimum an Ontario Secondary School Diploma (OSSD) or equivalent or be 19 years of age or older. Possession of minimum admission requirements does not guarantee admission to the program.

ACADEMIC REQUIREMENTS

- compulsory English 12C or U, or skills assessment or equivalent
- math 11M or U or 12C or U, or skills assessment or equivalent

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

PROGRAM OUTLINE

Semester 1

BI-111	Introduction to Biological Systems
CH-101	Chemistry I
MATH-154	Microcomputer Applications for Technology
MATH-176	Mathematics 2*
COMM-170/171	College Communications 2
GNE-126	Occupational Health and Safety

Semester 2

BI-121	Microbiology
BI-122	Microbial Techniques
CH-122	Lab Instrumentation
CH-125	Inorganic Chemistry for Microbiology
MATH-186	Statistics for Applied Science*
GNE-126	General Education Elective

Semester 3

BI-207	Microbiology Project 1
BI-208	Food Microbiology
CH-121	Organic Chemistry
CH-207	Analytical Chemistry
ENGL-250	Communication for Technology
GNE-500	Global Citizenship: From Social Analysis to Social Action

Semester 4

BI-206	Microbiology Project 2
BI-209	Pharmaceutical Microbiology
CH-203	Food Chemistry
CH-222	Biochemistry 1
GNE-126	General Education Elective

Note: Students will be placed in the appropriate English level based on skills assessment results.

** Students who test at an advanced level may be accelerated directly into MATH-176 in semester 1 and MATH-186 in semester 2. Those taking MATH-140 will have the opportunity to complete MATH-186 between semesters 2 and 3.*

At A Glance

- national accreditation supports program quality and provides mobility for graduates