

Biomedical Engineering Technology

Program Code: 3407

3417 (co-op)

Program Length: 3 years/6 semesters (3407)

3 years/9 semesters (3417)

Credential: Ontario College

Advanced Diploma

Start: Fall, Winter

Campus: Centennial Science and

Technology Centre

bet@centennialcollege.ca

Program Overview

In the biomedical equipment industry, engineering and scientific disciplines merge, resulting in innovations that bring progress to the health care system, and benefit the society as a whole. Firms in this industry must now meet the challenge of providing a wider range of quality products. As a result, there will be a greater need for qualified professionals. Biomedical engineering integrates various principles including electronics, computers, embedded microcontrollers, biology, medicine, health, and product engineering in the design of medical equipment, rehabilitation and health improvement devices.

In response to this growing demand for technology professionals who understand health-related fields, Centennial College is offering the Biomedical Engineering Technology program. It will prepare you for a challenging career with the latest technology, while continuing to evolve to reflect ever-growing innovations.

This program provides an optimum balance between theory and hands-on labs with ever present technical problem-solving. You can choose to participate in an optional co-op component where academically-qualified students enhance their education by working three, four-month terms as paid employees in the field. The experience not only allows you to put classroom learning into practice, but also provides valuable contacts for future careers.

Fast forward to the Fast-track options, page 135.

At A Glance

Health care technology professionals work in settings such as:

- hospitals
- medical equipment companies
- pharmaceutical companies
- rehabilitation facilities
- quality control
- sales and customer service

BENEFITS

PROGRAM HIGHLIGHTS

- instruction from biomedical industry professionals
- hands-on experience is gained with a wide range of high-tech equipment
- a strong focus is placed on hands-on labs to enhance classroom learning
- the program is part of an active student chapter of Institute of Electrical and Electronic Engineers (IEEE)
- the program has its own Biomedical Student Club
- the advanced diploma that is earned is recognized in Canada and abroad, reflecting high standards of learning
- opportunity exists for three paid co-op work terms (if in the co-op program)

EDUCATIONAL PARTNERS

Qualified graduates may be eligible to participate in an articulated program with selected universities. These partnerships allow graduates to apply academic credit towards further study.

Our partners are

- Lakehead University, engineering degree
- Cape Breton University, engineering technology degree

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.

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

CO-OP REQUIREMENTS

- minimum C grade in COMM-170/171, minimum 2.5 GPA, and minimum 80 per cent of year 1 courses required for COOP-221

GRADUATION REQUIREMENTS

- minimum 2.0 GPA required for progression to semester 5 and 6 and technology graduation

PROGRAM OUTLINE

Semester 1

EETEC-101	Electronics Shop Practices
EETEC-102	Digital Electronics 1
EETEC-103	Electric Circuits 1
EETEC-104	Technical Report Writing Tools in MS
EETEC-116	Computer Hardware & Networks
COMM-160/161	College Communications 1
MATH-170	Technology Math 2

Semester 2

CTEC-208	C/C++ Programming
EETEC-121	Electronics 1
EETEC-122	Digital Electronics 2
EETEC-123	Electric Circuits 2
COMM-170/171	College Communications 2
MATH-180	Technology Math 3
GNED	General Education Elective

Semester 3

ANAT-106	Applied Anatomy & Physiology
BTEC-211	Biomedical Engineering 1
BTEC-212	Infection Control & Microbiology
EETEC-201	Electronics 2
EETEC-204	Electronic Communication Systems
MLAB-101	Clinical Laboratory Techniques
GNED-500	Global Citizenship: From Social Analysis to Social Action
COOP-221	Employment Pre-placement (3417)

Co-op Work Term 1 (3417)

Semester 4

BTEC-221	Biomedical Engineering 2
BTEC-222	Dialysis & Water Treatment
BTEC-225	Project Design Applications
EETEC-202	Microcontrollers 1
EETEC-203	Measurement & Instrumentation
EETEC-221	Electronics 3

Co-op Work Term 2 (3417)

Semester 5

BTEC-312	Biomechanics & Rehabilitation Engineering
BTEC-313	Medical Imaging Systems
BTEC-314	Photonics Devices & Laser Treatment
EETEC-306	QA and Project Management
EETEC-222	Microcontrollers 2
EETEC-223	Control Systems 1
EETEC-224	Data Communications & Networks

Co-op Work Term 3 (3417)

Semester 6

BTEC-321	Advanced Topics in Biomedical Engineering
BTEC-325	Computer Integrated Surgery & Telemedicine
BTEC-327	Biomedical Project
EETEC-205	RF Transmission & Measurements
EETEC-324	Wireless Networks & Applications
GNED-212	Ethics in Technology and the Environment
EMPS-101	Employment Skills (3407)

Note: Student will be placed in the appropriate English and math level based on skills assessment results