

What is a clinical engineer?

*"A **Clinical Engineer** is a professional who supports and advances patient care by applying engineering and managerial skills to healthcare technology." -ACCE Definition,*

"Professionals who are qualified by education and/or registration to practice engineering in the health care environment where technology is created, deployed, taught, regulated, managed or maintained related to health services"- IFMBE CED Definition

Clinical engineers work in hospitals, medical device companies, government or regulatory bodies or as consultants. You can find out more about this profession by reviewing organization websites associated to the profession below.

What is the M.Eng Biomedical Engineering with concentration in Clinical Engineering Program?

The Ottawa-Carleton Institute for Biomedical Engineering (OCIBME) offers a M.Eng Biomedical Engineering with concentration in Clinical Engineering degree. OCIBME is a multi-disciplinary institute combining academic resources from Carleton University and University of Ottawa as well as medical expertise from a number of well-established hospitals and medical research institutions.

The 2-year M.Eng Biomedical Engineering with concentration in Clinical Engineering degree provides students with a foundation for a career in Clinical Engineering. Students take courses in Biomedical Instrumentation, Medical Imaging Modalities, Introduction to Biomedical Engineering, Clinical Engineering and Fundamentals of Policy I: Policy Analysis, complete an 8-month practicum/internship designed by Certified Clinical Engineers and complete a Clinical Engineering project under the mentorship of a Professional Engineer.

What is the Clinical Engineering internship?

The Clinical Engineering (CE) Internship is an 8-month placement for M.Eng students enrolled in the BME program. It provides students an in-depth, rigorous, clinical experience that builds on the engineering expertise gained in the classroom. The primary objectives of the internship are to provide:

- Opportunity to apply engineering principles to healthcare in the hospital environment.
- Exposure and understanding of the hospital environment.
- Experience working with hospital staff, including administrators, clinicians, technologists, etc.

Currently participating hospitals include the:

- University of Ottawa Heart Institute (Ottawa, ON),
- The Ottawa Hospital (Ottawa, ON),
- The Children's Hospital of Eastern Ontario (Ottawa, ON),
- The University Health Network (Toronto, ON) and
- Lower Mainland Biomedical Engineering (Metro Vancouver, BC).

These internships occur with the supervision of qualified staff in the Healthcare Technology Management departments at these hospitals. The students work as Clinical Engineering Interns, familiarizing themselves with the healthcare environment and typical clinical engineering duties and projects. The student has a pre-determined work schedule and is treated as a department employee with accountability and assigned responsibilities.

The internship includes a stipend.

To learn more about the program, please reach out to Fabio Variola, Director, University of Ottawa, email: fabio.variola@uottawa.ca or Yuu Ono, Associate Director, Carleton University, email: yuuno@sce.carleton.ca

Prospective students are encouraged to learn more about the partner hospital's Health Technology Management Departments by visiting their websites or contacting the personnel noted below.

University of Ottawa Heart Institute (UOHI)	The Ottawa Hospital (TOH)	Lower Mainland (LM) Biomedical Engineering	The Children's Hospital Of Eastern Ontario (CHEO)
https://www.ottawaheart.ca/students-trainees/nursing-and-allied-health-training/clinical-engineering-training	Joel Brose, MEng. P.Eng. Manager, Biomedical Engineering Services Email: jbrose@toh.ca	Alice Casagrande Cesconetto, P. Eng., M.Eng., Regional Engineering Team Leader Email: alice.casagrande@vch.ca Link: Lower Mainland Biomedical Engineering	Andrew Ibey, MEng. P.Eng. CCE Manager, Clinical Engineering, Email : aibey@cheo.on.ca

Where are graduates working now?

There have been 12 graduates of the program in the past 10 years. Most graduates seek jobs in clinical engineering departments in hospitals, but some are employed by independent service organizations, equipment-planning firms, or medical equipment manufacturers in clinical technology management, technology support, quality or design roles.

Which school should I apply to for the Clinical Engineering Concentration?

You can apply to either school, the program is jointly offered by the University of Ottawa and Carleton University.

- [M.Eng. Biomedical Engineering with Concentration in Clinical Engineering – OCIBME \(carleton.ca\)](#) :

Information about requirements and courses from each university can be obtained here:

- [University of Ottawa](#) and [Carleton University](#)

How do I get admitted?

The selection process will be conducted during the summer. The students who are admitted into the MEng program and expressed their interest in the CE concentration will be contacted in the early summer for the instruction of the selection process. The admission to the CE program is selective and competitive, and a limited number of the MEng students are admitted into the CE program each year.

Clinical Engineering Organizations

				
American College of Clinical Engineering	The Canadian Medical and Biological Engineering Society	The Clinical Engineering Society of Ontario	The Global Clinical Engineering Alliance	The International Federation of Medical and Biological Engineering Clinical Engineering Division
www.accenet.org	www.cmbes.ca	www.ceso.on.ca	www.globalcea.org	www.ced.ifmbe.org