Biomedical engineering is one of the fastest growing occupations in the health care field today. The demand for the life-enhancing technologies and innovative medical products that biomedical engineers create is expected to increase dramatically, particularly as the 77 million baby boomers enter their 60s and beyond. The aging of the boomer generation is also likely to spark developments in the care of the elderly that will require the expertise of biomedical engineers.

Biomedical engineers work alongside doctors, nurses, and other medical caregivers to develop and improve such devices as magnetic resonance (MR) scanners, computer-aided tomography (CAT) scanners, ultrasound machines, artificial knee and hip replacements, cardiac pacemakers and artificial hearts, electro-surgical and laser-surgery instruments, electrocardiogram machines, defibrillators, and dialysis equipment, among many others.

Biomedical engineers combine a sound foundation in engineering with a working knowledge of the life sciences. These two areas together enable biomedical engineers to design procedures and devices that assist in the diagnosis and treatment of disease and injury, make medical testing less intrusive, enhance the quality of life for people with disabilities, and otherwise improve the practice of medicine.

The Curriculum

Lawrence Technological University’s biomedical engineering program combines intensive course work in engineering with a strong background in biology, chemistry, physiology, instrumentation, and other subjects pertinent to the medical field.

Students benefit from presentations given by researchers, industry and health care professionals, and consultants, and they study the “best practices” for the industry, such as responsible conduct in research, the protection of human subjects, and professional behavior. They also complete several entrepreneurial courses and a three-semester design project sequence that allows them to combine theory and practice.

The program’s goal not only is to provide students with the skills needed for positions in biomedical engineering, but also to prepare them for positions in traditional areas of engineering as well. The program may also provide excellent preparation for those who wish to go on to medical school or for working professionals who, for a variety of reasons, require expertise in biomedical engineering.

The Bachelor of Science in Biomedical Engineering degree requires a total of 132 credit hours, which may include advanced courses from the mechanical engineering, electrical engineering, or natural sciences departments. Students can choose from three concentrations to complete their course work: biochemical, bioelectrical, and biomechanical.

CURRICULUM

Your 132-credit-hour program consists of:

- Humanities (with emphasis on leadership) 19
- Communications, Math, Basic Science 44
- Concentrations:
  - Biochemical Science 15
  - Engineering 13
  - Biomedical Engineering 38
  - Electives 3
  - Bioelectrical Engineering 32
  - Biomedical Engineering 34
  - Electives 3
  - Biomechanical Engineering 29
  - Biomedical Engineering 34
  - Electives 6

Total 132
“In biomedical engineering, students can work on interdisciplinary projects. My senior project was sponsored by a company to design and build a concept model of a medical device.”

Jeffrey Ziemba

Why Lawrence Tech’s Biomedical Engineering Program?

- It’s the only undergraduate biomedical engineering program in the metropolitan Detroit area.
- Courses are offered both during the day and in the evening, making it convenient for working professionals. In fact, the program can be completed entirely in the evening.
- Lawrence Tech’s theory and practice approach combines extensive laboratory experience with opportunities for co-op positions and internships in hospitals, healthcare institutions, and the medical equipment industry.
- The coordination of programs makes it easy to earn a dual degree in either biomedical and electrical engineering or biomedical and mechanical engineering.

Getting Started

The Bachelor of Science in Biomedical Engineering program is open to qualified high school graduates. It is also appropriate for professionals working in the medical field who have completed an undergraduate degree in a related field, such as biology, and who want to expand their engineering knowledge, and working professionals who would like to earn an undergraduate degree to enhance their career opportunities.

For more information, visit ltu.edu/engineering/biomed.asp or contact Lawrence Tech’s Office of Admissions at 800.CALL.LTU or admissions@ltu.edu.

Graduates with a degree in Biomedical Engineering have many career options:

- Governmental regulatory agencies (Food and Drug Administration, Environmental Protection Agency, etc.)
- Health care institutions
- Hospitals
- Medical equipment manufacturing companies
- Public and private research institutions

Lawrence Technological University produces leaders with an entrepreneurial spirit and a global view. That's why most Lawrence Tech students are employed within a month of graduating. Your benefits:

- Leadership Program that helps you develop the marketable skills that employers seek
- Leadership Portfolio that enhances your diploma – and your resume
- 12:1 student-faculty ratio
- Faculty with current industry experience
- Fully loaded high-powered laptop or tablet computer provided
- Schedules that work for you, with convenient day, evening, weekend, or online classes
- Hi-tech, wireless 102-acre campus that’s commuter friendly, with recreation, housing, and meal service options
- Financial-aid, co-op, and internship opportunities
- Proactive career placement services

Explore over 80 undergraduate, master’s, and doctoral programs in Colleges of Architecture and Design, Arts and Sciences, Engineering, and Management.