

Biomedical Engineering

BACHELOR OF SCIENCE IN

Lawrence Technological University's Bachelor of Science in Biomedical Engineering combines intensive course work in engineering with a strong background in biology, chemistry, physiology, instrumentation, and other subjects pertinent to the medical field. Designed for high school graduates as well as working professionals with a degree in a related field, the biomedical engineering program can prepare you for one of the fastest growing occupations in the health care field today.



Biomedical students prepare the bioreactor they constructed to begin growing an anterior cruciate ligament (ACL), which is often used in reconstructive knee surgery.

The demand for the life-enhancing and innovative medical technologies and services that biomedical engineers create is expected to increase dramatically, particularly as the 77 million baby boomers enter their 60s and beyond. The aging of this 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 technologies as magnetic resonance imaging (MRI), computer-aided tomography (CAT), ultrasound, artificial knees and hips, and tissue engineering, as well as 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.

Why Biomedical Engineering at Lawrence Tech?

As a biomedical engineering student at Lawrence Tech, you're exposed to the University's signature "theory and practice" approach to learning. Extensive laboratory work and opportunities for co-op positions and internships in hospitals, health care institutions, and the medical equipment industry provide valuable hands-on experiences, and dedicated faculty bring current industry knowledge and cutting-edge research to the classroom. You'll gain additional insight from presentations given by researchers, industry and health

care professionals, and consultants who study the "best practices" in the industry, such as responsible conduct in research, protection of human subjects, and professional behavior. Building on the entrepreneurial mindset, you'll also complete a two-semester design project sequence that can further prepare you to enter a competitive

workforce or to pursue advanced engineering or medical degrees.

At Lawrence Tech, you'll benefit from engaging classes in a high-tech learning environment. Laptop computers, provided to all undergraduates, allow you access to valuable industry-standard software – a unique benefit valued up to \$15,000. You are also exposed

CURRICULUM

Your 132-credit-hour program consists of:

Humanities (with emphasis on leadership)	19
Communications and Math	25
Science	24
General Engineering	8
Biomedical Engineering (with emphasis on bioelectronics, biomechanics, biomaterials, and biofluids)	47
Electives (engineering or life sciences)	9
Total Credit Hours	132



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

- Governmental regulatory agencies
(Food and Drug Administration,
Environmental Protection Agency, etc.)
- Hospitals
- Medical device companies
- Medical schools
- Pharmaceutical companies
- Public and private research institutions
- Universities

“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

to the University’s Leadership Program, integrated into all undergraduate curricula, preparing you with the marketable skills that employers seek.

Lawrence Tech’s program can position you for a career in biomedical engineering, as well as in the traditional areas of engineering. It can also offer excellent preparation for working professionals who require expertise in biomedical engineering.

The BS in Biomedical Engineering requires 132 credit hours, focused on the areas of biomechanics, bioelectronics, biomaterials, and biofluids. The curriculum also includes advanced courses from the biomedical engineering, mechanical engineering, electrical engineering, and natural sciences programs. In addition, the coordination of programs at Lawrence Tech makes it easy to earn a dual degree in either biomedical and electrical engineering or biomedical

and mechanical engineering. Designed to accommodate your busy schedule, classes are offered both during the day and in the evening.

Admission

The Bachelor of Science in Biomedical Engineering program is open to qualified high school graduates. It is also appropriate for those 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 for working professionals who would like to enhance their career opportunities.

Getting Started

For more information, visit www.ltu.edu/engineering/biomed.asp or contact Lawrence Tech’s Office of Admissions at 800.225.5588 or admissions@ltu.edu.

GET MORE. DO MORE.

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 and the earning power of a Lawrence Tech bachelor’s degree ranks in the top third of all U.S. universities. 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
- High-end personal computer customized with all needed software – a benefit, valued up to \$15,000, unique in Michigan and nationally
- Schedules that work for you, with convenient day, evening, weekend, or online classes
- High-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 100 undergraduate, master’s, and doctoral programs in Colleges of Architecture and Design, Arts and Sciences, Engineering, and Management.

