Biomedical Engineering

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.

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 to 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.

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The 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
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