

BACHELOR OF SCIENCE IN **BIOMEDICAL ENGINEERING**

groundbreaking DISCOVERIES

WHY BIOMEDICAL ENGINEERING?

The field of biomedical engineering encompasses a broad range of topics, all of which focus on the interface between biology, medicine and engineering. Biomedical engineers use engineering skills to design devices or develop methods that interface with biological or medical systems to benefit society. For example, biomedical engineers might be involved in the design of artificial organs, development of new methods to detect or treat cancer, production of devices to measure biological agents, or creation of ways to obtain the controlled release of drugs. Biomedical engineers work in many exciting new areas that directly affect the lives of countless people. The predicted job growth is currently greater than any other engineering field.

WHAT DO BIOMEDICAL ENGINEERS DO?

Biomedical engineers work at the cutting edge of research and industry, and frequently address clinical, diagnostic and therapeutic applications of engineering. Biomedical engineers may be involved in diagnostic imaging of tissues, engineering surfaces to ensure compatibility of implants with the body, the development of new materials for interaction with living systems, or the creation of new sensors for monitoring biological systems.

HOW DO I BECOME A BIOMEDICAL ENGINEER?

Students enter UMaine's biomedical engineering B.S. program with a strong interest in science and problem solving. The curriculum provides thorough training in the fundamentals of engineering and the biological sciences. Employing this knowledge base, students develop the skills to engineer solutions to real-world problems. During their course of study, students are actively involved in engineering projects mentored by individual faculty.

new FRONTIERS

WHERE DO GRADUATES END UP?

The B.S. degree is suitable for entry-level engineering careers and as preparation for graduate-level study in engineering or scientific disciplines. The degree also serves as an excellent foundation for admission to medical school. For students who wish to pursue advanced postgraduate studies in this area, UMaine also offers Master of Science and Ph.D. degrees in biomedical engineering.

WHY UMAINE?

UMaine offers a unique program of study that provides high-quality undergraduate education to prepare students for employment or graduate education in fields associated with clinical, therapeutic and diagnostic applications of biomedical engineering. Students are given instruction in the instrumentation and techniques employed to analyze biological systems and processes. They are introduced to the challenges and methodologies associated with manipulating biological and medical systems, and are exposed to current and future applications of biomedical engineering. The size of the program allows students to receive individual attention, with many opportunities for direct interaction and discussion with faculty members. Additionally, UMaine's College of Engineering offers a five-year B.S.-MBA degree with the Maine Business School, as well as a minor in engineering leadership and management.



FOR MORE INFORMATION, CONTACT:

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CO-OPS AND INTERNSHIPS

UMaine faculty help place students in industrial internships in leading research and diagnostics companies throughout New England. Placement with these companies typically takes place in the junior year of the program, and provides valuable real-world experience. Faculty also assist students in identifying summer internships at leading research institutions, both public and private. Additionally, students are encouraged to get involved in one of the numerous undergraduate research experiences in the laboratories of the department faculty. Many of these are available to students at all academic levels.

RESEARCH

UMaine biomedical engineering professors are all highly active and accomplished researchers. Current research projects include the development of nanoprobes for detection and imaging of cancer; molecular biosensors for detecting pathogens and toxins; improving

tissue-implant compatibility; the design of new bio-inspired materials for interactions with biological systems; the engineering of implants for improved wound repair; novel imaging techniques; and computational diagnostics. Undergraduates are encouraged to participate in projects such as these to gain hands-on experience in the field, either for course credit or as paid employees.

WHY ENGINEERING?

Engineers solve the most pressing problems of our time. There is always a strong demand for engineers. At UMaine, you'll work with and learn from nationally and internationally recognized innovators in their fields. You'll also be able to take advantage of our programs in leadership and management.

HOW DO I APPLY?

Visit go.umaine.edu for an application and information about academics and life at UMaine.



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succeed

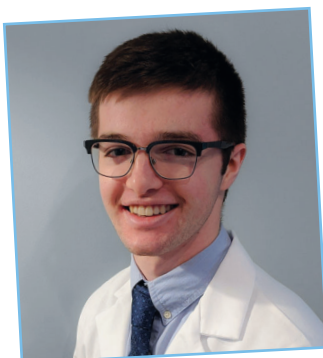


“Every semester I find myself loving biomedical engineering more and more thanks to the many opportunities I have been afforded. Doing research within the department has had a **formative effect on my passions and career goals**, while being on co-op at Northern Light Eastern Maine Medical Center this semester has provided me with fantastic experiences you can't get in a classroom. None of this would have been possible without **support from the department and its wonderful faculty and staff.**”

— Tian Morrison, Biomedical Engineering, Electrical Engineering and Math minors, Clinical Engineering Intern

“The Biomedical Engineering program at the University of Maine has provided me with the skills necessary to succeed in this field, such as **problem-solving, assiduity, diligence and values of ethical responsibility**. As an international student and a student-athlete, I have also had to develop **stronger organizational and time-management skills**, as well as interpersonal skills which were eminent to my success as an undergraduate student. The program offers multiple summer classes which is a great accommodation to incorporate a co-op experience or even graduate early. **The faculty are devoted to the students' success** and they encourage students to find their interests, which gave me the desire to pursue a graduate education.”

— Inès Khiyara, Biomedical Engineering, Environmental Engineering Minor, International Student, University of Maine Women's Swimming



“The Biomedical Engineering Department at the University of Maine has provided me with invaluable experiences, which have **solidified my passion for research and the medical field**. Even as a freshman, I was able to be a contributing member to graduate-level research, and since then, the department has sent me on trips to present my work around the country. I have found **endless support from the staff**, whom I see more as mentors as they have guided me toward internships and shadowing opportunities that fit to my goal of becoming a physician.”

— Benjamin Chasse, Biomedical Engineering, Pre-Med Concentration, Biomedical Engineering Club President, Undergraduate Researcher, Resident Assistant, Systems Engineering Intern