

SOMEONE WILL ENGINEER A SOLUTION TO A HEALTH CARE PROBLEM AFFLICTING MILLIONS

Where engineering meets human health and medicine

Biomedical engineering combines engineering principles and methodology with physical, chemical and mathematical sciences to solve problems in biology, medicine, behavior and health.

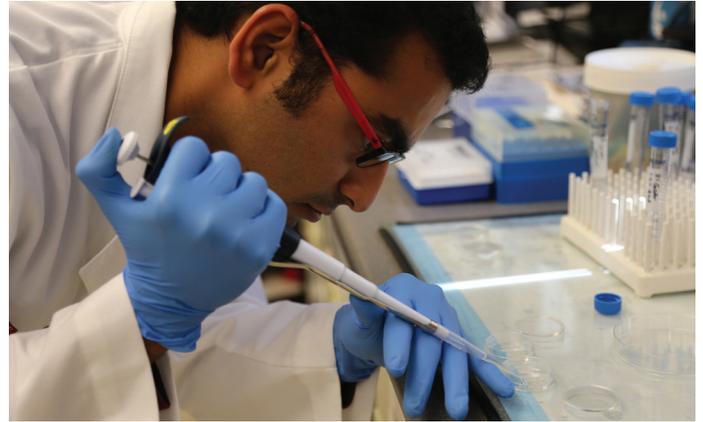
Biomedical engineering at Ohio State

The Department of Biomedical Engineering (BME) provides state-of-the-art training in the application of engineering principles and design to solve challenges in human health and medicine. Accredited by the Engineering Accreditation Commission of ABET, abet.org, our Biomedical Engineering Program brings together the biological and engineering sciences into one unique engineering discipline. Ohio State's curriculum features creativity, numerical modeling and simulation, technical communication and hands-on labs. Our courses can lead to research in the department's focus areas that include cardiology/pulmonary disease, musculoskeletal disease, cancer, eye disease, regenerative medicine, dental disease, neurological disease and others.

At Ohio State, we emphasize an interdisciplinary, hands-on approach to learning and solving problems. Students benefit from our close ties to other engineering departments, the biological sciences, and the colleges of medicine, dentistry and veterinary medicine.

Senior biomedical engineering students team up for a yearlong course to learn how to design a product or device. Teams have tackled diverse challenges, from developing devices to aid the disabled to working with NASA and local companies to create devices that improve lives and meet market needs. These projects have been funded in part by the National Institutes of Health and National Science Foundation.

Admission to the program is competitive and is determined at the end of the first year. Decisions are based on grades for courses completed during the first year and essay questions. Currently, the average GPA for incoming BME majors is over 3.5.



Where will a biomedical engineering degree take you?

Biomedical engineering graduates are prepared to pursue advanced study leading to careers in research and professional practice in biomedical engineering or health care, including medicine, dentistry, veterinary medicine and other fields.

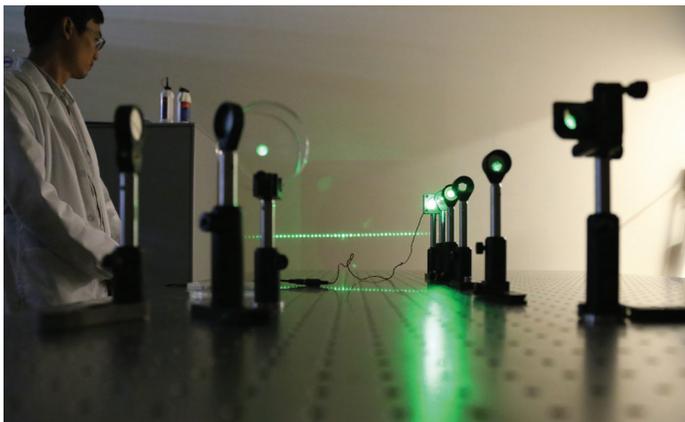
They also are employed by pharmaceutical industries, government agencies, biomedical product companies, medical center labs and emerging high-tech industries.

Due to their multidisciplinary backgrounds, biomedical engineers have diverse technical interests, often acting as liaisons between engineering and clinical communities.

Solving society's challenges through research

Research opportunities abound for undergraduates who are ready to employ engineering problem-solving outside of the classroom. You can explore applications in cardiopulmonary,





musculoskeletal, visual and endocrine systems, and cancer research. Areas under investigation include nanotechnology for cell transplants, microfabrication of biodegradable polymers for drug delivery, design of virtual bone dissection simulations, biomechanics of tissue (bone, eye), magnetic resonance imaging and spectroscopy, corneal topography, understanding mechanoregulation/mechanosignaling in vascular cells/tissues, and biocompatibility of novel implant materials. Faculty plus more than 50 graduate faculty members across campus offer extensive mentoring opportunities in all aspects of research.

Senior design project

We believe it's critical to provide our students with the tools and hands-on experience of seeing how engineering principles are implemented in the real world. All biomedical engineering students are required to complete a yearlong senior design project where they work in teams to engineer solutions to clinical or technical problems. Teams present their completed projects to peers, faculty and industry representatives. They also participate in and have won many awards at the college-wide Engineering Design Showcase.

BME domains

Our faculty-designed distinctive courses fully integrate topics in engineering and medicine that are the pathway to advanced-level courses and allow for substantial focus in a domain of interest. The Department of Biomedical Engineering offers junior-level domain courses in bioimaging, biomaterials, biomechanics, biomedical micro- and nano-technology, biotransport, and molecular, cellular and tissue engineering.

Become a Buckeye engineer

Ohio State's College of Engineering ranks among the top 20 public engineering programs nationally and among the top

five universities in industry-financed research. With more than 300 faculty members and 10,000 students, the college is Ohio's premier engineering school. Undergraduate students can choose from 14 degree programs, while our more than 40 research centers and laboratories provide extensive research opportunities. Our academic environment combines challenging class work with experiential learning—resulting in an education that can take you anywhere.

Frequently asked questions

Where is BME located?

The Department of Biomedical Engineering is located in Bevis Hall on Ohio State's West Campus, adjacent to the student parking lots. You can drive to class and park nearby!

What classes do I need to major in biomedical engineering?

To major in BME, you must have completed the following pre-major semester course work: Math 1151, 1172; Physics 1250; Chemistry 1210, 1220; Engineering 1181, 1182. Major applications are accepted at the end of spring semester.

What is the minimum GPA to major in BME?

While we do not have a specific GPA requirement, our admissions are competitive based on a capacity of 80 sophomores.

What if I'm interested in BME, but majoring in something else?

We also offer a minor in biomedical engineering. The BME minor requires four courses and can be completed alongside any Ohio State major. Learn more at bme.osu.edu/minor.

Is it possible to pursue biomedical engineering while being pre-med?

Yes, BME is an excellent pre-med major. Many of the required pre-med classes are part of our curriculum. If you are preparing for medical school with BME, plan for one additional organic chemistry class and possibly one additional biology in your curriculum.

CONTACTS

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