

Biomedical Engineering, PhD

Graduate study in biomedical engineering prepares students to use contemporary methods at an advanced level during a professional career in engineering design, development, and research.

Each student's course of study is based on individual background, career objectives, and sound academic practice. An individual program for each student may be developed from courses offered by the Roy J. Carver Department of Biomedical Engineering and other departments, particularly mechanical engineering, electrical engineering, physiology, mathematics, and biological sciences. Faculty members in the department have teaching and research expertise in cardiovascular and fluid biomechanics, musculoskeletal biomechanics, biomaterials and tissue engineering, bioinstrumentation, biosystems, biomedical imaging, biological signal analysis, bioinformatics and computational biology, pulmonary engineering, computational neuroscience, and other allied fields.

PhD programs may center on any one of the previously described areas through the choice of appropriate coursework and research topic.

Learning Outcomes

By completing the graduate curriculum in biomedical engineering, students will be able to:

- demonstrate broad knowledge of the field of biomedical engineering and deep knowledge in their specific area of study;
- communicate complex technical ideas concisely and effectively to both general and specialized audiences through verbal, visual, and written formats;
- formulate research questions, pose testable hypotheses, employ methods that enhance the reproducibility of research, and apply critical thinking skills to produce solutions to complex engineering problems that intersect with biology and human health; and
- operate with professionalism and under standards of ethical conduct.