

# Biomedical Engineering

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The department of biomedical engineering offers research-based programs leading to Master of Science (MS) and Doctor of Philosophy (PhD) degrees, as well as an instructional-based graduate certificate in biomaterials and tissue engineering. Graduate students participate with faculty in their research, where departmental faculty have developed research activities in the following areas of specialization:

- Biomaterials, surface modification of biometallic alloys, biodegradable metallic implants, 3D-printing and additive manufacturing;
- Musculoskeletal biomechanics, human movement computer simulation, rehabilitation engineering and technology, human movement coordination;
- Cardiovascular mechanobiology, cell-tissue biophysics, instrumentation/devices to understand cell and tissue mechanobiology, identifying novel surrogate markers of diseases, gene regulation, cell and tissue engineering;
- Brain-machine interface, neural signal processing, prosthesis, cognitive neuroscience, biomechanics, rehabilitation robotics;
- Biosensors, Raman spectral analysis, peripheral artery disease muscle imaging, hyperspectral imaging, biomedical instrumentation design; and
- Flexible/Stretchable electronics for human health monitoring, human-machine interfaces via wearable electronics, fabrication of micro/nano-structures, and nano-biosensors for disease diagnostics.

Graduate students in the MS and PhD programs have access, through instruction and research activities, to the department's research and instructional facilities, which include:

- Biomaterials lab;
- Multidisciplinary human biomechanics and design lab;
- Biomedical sensors, imaging and modeling lab;
- Mechanobiology and biomedicine lab; and
- Bio-integrated electronics and systems lab.

## Programs in Biomedical Engineering

- PhD in Biomedical Engineering (<http://catalog.wichita.edu/graduate/engineering/biomedical-engineering/phd-biomedical-engineering/>)
- Master of Science in Biomedical Engineering (<http://catalog.wichita.edu/graduate/engineering/biomedical-engineering/ms-in-biomedical-engineering/>)
- Accelerated BS to MS in Biomedical Engineering (<http://catalog.wichita.edu/graduate/engineering/biomedical-engineering/accelerated-bs-ms-biomedical-engineering/>)

## Certificates in Biomedical Engineering

- Certificate in Biomaterials and Tissue Engineering (<http://catalog.wichita.edu/graduate/engineering/biomedical-engineering/certificate-biomaterials-tissue-engineering/>)

## Courses in Biomedical Engineering

- Biomedical Engineering (BME) (<http://catalog.wichita.edu/graduate/courses/bme/>)