Biomedical Engineering

Globally, biomedical engineers contribute to improving access to effective, safe, quality and affordable medicines, medical technologies and devices through the development of new innovative solutions. Biomedical engineers apply their knowledge of analytical and design principles to the development, testing and analysis of novel and improved medical treatments and devices.

Where do Biomedical Engineers Work?

Biomedical engineers work in a variety of organizations, including:

- Medical research facilities
- Medical device and instrument companies
- Pharmaceutical companies
- Biotechnology firms

Explore Our Biomedical Curriculum

Grades 3-5:

Kidney Filtering

The Artificial Bicep

Biohazard Protection Design Project: Suit Up!

Grades 6-8:

Saving a Life: Heart Valve Replacement

Prosthetic Party: Build and Test Replacement Legs

Designing Medical Devices to Extract Foreign...

Grades 9-12:

Artificial Heart Design Challenge

Help Bill! Bioprinting Skin, Muscle and Bone

Designing a Robotic Surgical Device

Biomedical engineering spans many disciplines, but is generally broken into a few subfields:

math, physics, chemistry, design, human biology, anatomy, physiology, biomechanics, neuroscience and bioethics

What do Biomedical Engineers Study?

Biomedical engineers work to design, build and test medical equipment. They meet with physicians, patients, or other clinical partners to take measurements, collect data and learn about a user's needs. They will research different materials to use in new equipment and manufacturing techniques to make equipment light and efficient. A biomedical engineer may use computer programs to model how new equipment works, analyze results, and draft reports and presentations to share key findings. Biomedical engineers learn to design diagnostic tools, medical devices, artificial organs and prosthetics.

TeachEngineering STEM curriculum for k-12