

BIOMEDICAL ENGINEERING



Biomedical Engineering at Drexel

Biomedical engineering synthesizes the life sciences with engineering by combining the strengths of both fields. This synthesis underlies the development of cost-effective technology for health care, including medical devices and diagnostics, pharmaceuticals, and biotechnology. Drexel's Bachelor of Science program in Biomedical Engineering prepares students to conceive, design, and develop devices and systems that improve human health and quality of life.

Drexel Co-op for Biomedical Engineering

A key part of the program is Drexel's prestigious co-operative education program, in which students alternate periods of classroom study with periods of professional work experience. Biomedical Engineering students can choose from the following:

- Five-year option, with co-op experience: includes three six-month periods of full-time employment
- Four-year option, with co-op experience: includes one six-month period of full-time employment

A Few Drexel Co-op Position Titles

- Assistant Hematologist
- Biomaterials Engineering Assistant
- Biomedical Engineering Assistant
- Rehabilitation Technician

Employers

Here are some of the companies that have hired Drexel students as co-op or full-time employees:

- Boston Scientific Corporation
- Exponent, Inc.
- Medtronic, Inc.
- Moss Rehabilitation Research Institute
- Synthes, Inc.

Potential Careers

Biomedical Engineer. Combines his or her knowledge of biology and medicine with engineering principles and practices to develop devices and procedures that solve medical and health-related problems. Conducts research to develop and evaluate systems and products such as artificial organs, prostheses, instruments, and medical information systems.

Medical Scientist. Researches diseases to improve health and medicine. Usually conducts biomedical research and development to advance the knowledge of life processes and living organisms. Also engages in clinical investigation, writes technical papers, reviews drug applications, and examines patents.

Biological Scientist. Conducts research to solve problems dealing with life processes and living organisms. Usually specializes in a facet of biology, such as microbiology or zoology. Often develops new drugs, treatments, and diagnostic tests.

Courses You'll Really Enjoy

The Body Synthetic. Introduces concepts underlying biological and engineering principles involved in the design and construction of prosthetic devices used to replace various parts of the human body.

Biomedical Ethics and Law. Explores the wide spectrum of ethical, regulatory, and legal issues facing health care practitioners and health-related research workers. Familiarizes students with the ethical and legal issues involved in their work. Helps students understand how legal and ethical decisions should be made in health-related matters, as well as what sources of help and guidance are available.

Robotics in Medicine. Provides an introduction to the use of haptics (the use of somatosensory information) in the design of robotic devices in surgery. Topics include actuators, sensors, nonportable feedback, portable force feedback, tactile feedback interfaces, and haptic sensing and control systems.

Neuroengineering. Introduces the theory of neural signaling. Students will learn the fundamental theory of cellular potentials and chemical signaling, the Hodgkin Huxley description of action potential generation, and circuit representations of neurons. Students will be able to derive and integrate equations describing the circuit as well as design computer models.

Learn More: University Catalog

Detailed course descriptions can be found online at www.drexel.edu/catalog.

Accelerated Degree Options

Accelerated degree programs, such as the BS/MD, BS/PhD in Engineering, BS/JD, and BS/MBA, enable academically qualified students to earn both a bachelor's and an advanced degree, graduating sooner than they would in traditional programs. Eligible students can be admitted to an accelerated degree program in one of two ways: apply as an incoming freshman through Undergraduate Admissions or apply to the Graduate Studies Office after completing a minimum of 90 credits. To learn more about accelerated degree options, visit www.drexel.edu/em/ug/accelerated.

For More Information

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