GRADUATE PROGRAMS IN
BIOMEDICAL ENGINEERING

MASTER OF ENGINEERING
DOCTORAL DEGREE
GRADUATE CERTIFICATES

STEVENS.EDU/GRAD-BME
Stevens Institute of Technology’s graduate programs prepare you to be a leader in today’s biomedical engineering revolution. You’ll enjoy a flexible master’s program that combines a structured academic approach with career-focused study tailored toward your goals. You’ll benefit from our collaborations with the New York metropolitan area’s top medical centers and our partnerships with global medical device companies and government agencies. Our program leaves you poised to thrive in academia, industry, medicine and a range of newly expanding careers in biomedical engineering.

The Master of Engineering in Biomedical Engineering can be a valuable credential for students considering work in the biomedical field or a step toward professional studies in medicine, dentistry, physical therapy, law and other fields. Working engineers can pursue a degree part-time; all graduate courses are offered in the evening or on Saturday morning. The biomedical engineering graduate program fosters scholarly work while providing the flexibility to accommodate students’ interests and career goals.
Stevens’ multi-disciplinary biomedical engineering program blends advanced study in engineering, biology, life sciences, medicine, clinical applications and bioethics. Students considering work in the biomedical field will find a wealth of opportunities at:

• Medical device firms
• Hospitals
• Research facilities in educational institutions
• Regulatory and governmental bodies

TOP HIRING ORGANIZATIONS

• Becton Dickinson
• Philips Healthcare
• Medtronic
• Regeneron
• Integra LifeSciences
• Merck
• Siemens
• Stryker
• Zimmer
• CooperSurgical
• U.S. Department of Veterans Affairs
• Johnson & Johnson
The Master of Engineering requires 30 graduate credits including six required credits of core coursework. Twenty-one graduate credits of coursework can be tailored to aid a research project or professional-development goal and may include a nine-credit thesis. In lieu of the nine-credit thesis, students can elect to do a six-credit research or design project plus three credits of additional graduate coursework. Students may also take guided electives in other programs after consulting an advisor.

**CORE COURSES INCLUDE**
- Strategies and Principles of Biomedical Design
- Advanced Biomedical Engineering Lab

**ELECTIVE COURSES INCLUDE**
- Physiology Systems for Engineers
- Medical Instrumentation and Imaging
- Biomaterials
- Biomechanics
- Cardiopulmonary Mechanics
- Advanced Biomechanics
- Intro to Brain-Machine Interfaces
- Principles of Tissue Engineering
- Advanced Biomaterials
- Pathophysiology
- Nanomedicine
- Nanobiotechnology

Stevens’ biomedical engineering program lets you participate in world-class research being conducted in state-of-the-art biomedical laboratories. You’ll have opportunities to collaborate with our renowned faculty and to work with clinicians and companies while you complete your Ph.D. requirements. A number of Stevens students have developed significant intellectual property from their Ph.D. research.

Courses in the program provide important tools, but a large part of the doctoral degree is achieved through independent study, including preparation for the qualifying examination, the development of research proposals and seminars and familiarization with current scientific literature in your area of specialization.
Research at Stevens is propelled by renowned faculty, labs and research centers. With leading research programs in a range of disciplines and ten labs dedicated to biomedical engineering, students gain invaluable hands-on experience. Some research highlights:

Dr. George McConnell is studying the use of different types of deep brain stimulation (DBS) on genetically modified mice in Stevens’ Laboratory for NeuInnovation. The technique is used to treat Parkinson’s and other neuro-disorders. He is collaborating with Duke University researchers on exploring the concept of synaptic plasticity.

Dr. Ramana Vinjamuri of the Sensorimotor Control Laboratory studies brain-machine interfaces (BMIs) that control upper-limb prostheses, in particular how the brain controls complex hand movements. These studies involve application of linear and nonlinear signal processing, control and optimization methods.

Dr. Carrie Perlman of the Perlman Lab studies lung mechanics in the context of acute lung injury. The lab studies the inflation mechanics of the edematous lung. Dr. Perlman’s research seeks to inform development of novel treatment methods that reduce ventilator-induced lung injury.

**Graduate Certificate Programs**

Stevens also offers graduate certificate programs. In most cases, courses may be used toward a master’s degree. Each graduate certificate program is a self-contained, highly focused collection of courses carrying nine or more graduate credits. The selection of courses may be adapted to a student’s professional interests. Inclusion of a graduate certificate program requires pre-approval by your academic advisor.

- Biomedical Engineering
- Biomedical Chemistry
- Bioinformatics
- Biomedical Chemistry
- Chemical Biology
- Chemical Physiology
- Laboratory Methods in Chemical Biology
WHO SHOULD APPLY

We welcome applicants who have a passion for biomedical engineering and a drive to innovate. You can apply to biomedical engineering with an undergraduate degree in engineering or physics.

Application requirements include:
• Bachelor's degree, with a minimum GPA of 3.0, from an accredited institution
• Official college transcripts
• Two letters of recommendation
• Statement of purpose
• TOEFL or IELTS scores (for international students)
• A competitive GRE or GMAT score*

* Part-time students do not require GRE/GMAT.

ABOUT STEVENS INSTITUTE OF TECHNOLOGY

Stevens Institute of Technology, *The Innovation University®,* is a premier, private research university situated in Hoboken, N.J. overlooking the Manhattan skyline. Founded in 1870, technological innovation has been the hallmark and legacy of Stevens’ education and research programs for more than 145 years. Within the university’s three schools and one college, 6,600 undergraduate and graduate students collaborate with more than 290 full-time faculty members in an interdisciplinary, student-centric, entrepreneurial environment to advance the frontiers of science and leverage technology to confront global challenges. Stevens is home to three national research centers of excellence, as well as joint research programs focused on critical industries such as healthcare, energy, finance, defense, maritime security, STEM education and coastal sustainability.

ABOUT SCHAEFER SCHOOL OF ENGINEERING & SCIENCE

The Charles V. Schaefer, Jr. School of Engineering & Science (SES) is dedicated to preparing the next generation of technology leaders by offering a multi-disciplinary, design-based education. With eight departments and an intensive curriculum for undergraduates, master’s and doctoral candidates, SES is dedicated to supporting hands-on learning, research and technology transfer that provides each student with invaluable, experiential knowledge. SES is globally recognized for its world-class faculty and leading-edge research facilities.

CONTACT INFORMATION:

Office of Graduate Admissions
Stevens Institute of Technology
1 Castle Point Terrace
Hoboken, New Jersey 07030
888.STEVENS (888.783.8367)
gr
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Department of Biomedical Engineering, Chemistry and Biological Sciences
Graduate Program Director, Biomedical Engineering
Schaefer School of Engineering & Science
1 Castle Point Terrace
Hoboken, New Jersey 07030
grad-bme@stevens.edu