

Engineering



About the College of Engineering

Since Drexel University's inception in 1891, the College of Engineering (CoE) has played an integral role in the success of the University. Drexel's College of Engineering is the nation's largest private engineering college and is renowned for its excellence in education and innovation. As the University's flagship college, CoE continues its proud tradition of offering a unique academic learning environment and rich research community.

The college's graduate program was nationally ranked 52 by *U.S. News & World Report's* 2009 survey of America's Best Graduate programs. Many of the college's academic departments were also recognized by *U.S. News* — the individual department rankings are as follows: Civil Engineering, 49; Computer Engineering, 57; Electrical Engineering, 60; Environmental Engineering, 43; Materials Engineering, 39; and Mechanical Engineering, 48.

Academic Departments

Chemical and Biological Engineering

Drexel's graduate Department of Chemical and Biological Engineering emphasizes engineering design and scientific analysis. The department's mission is to ensure students are versed in modern theories, cognizant of the behaviors of engineering systems, and are aware of current mathematical and engineering tools that are useful for providing solutions of issues related to chemical engineering, biochemical engineering, and materials engineering. The department offers four areas of research thrusts: biological engineering, energy and the environment, multiscale modeling and process systems engineering, and polymer science and engineering. To learn more about the Department of Chemical and Biological Engineering visit www.chemeng.drexel.edu.

Degrees Offered:

- Chemical Engineering: MS, PhD

Our Programs

The College of Engineering offers the following degrees:

- Chemical Engineering (MS, PhD)
- Civil Engineering (MS, PhD)
- Computer Engineering (MS, PhD)
- Computer Science (MS, PhD)
- Electrical Engineering (MS, PhD)
- Engineering Management (MS, Certificate)
- Environmental Engineering (MS, PhD)
- Materials Engineering (MS, PhD)
- Mechanical Engineering and Mechanics (MS, PhD)
- Software Engineering (MS)
- Telecommunications Engineering (MS)

For More Information

Prospective students are encouraged to visit these websites for the most current information about the College of Engineering:

- The College of Engineering: www.drexel.edu/coe
- Admissions: www.drexel.edu/em/grad/coe
- The Graduate Catalog: www.drexel.edu/catalog/grad/coe



Mission Statement

The College of Engineering serves the students of engineering and computer science and promotes a progressive and sustainable society by offering a comprehensive and integrated course of study enhanced by technology, cooperative education, and research.

The College of Engineering educates students to become highly competent engineers and computer scientists in an experiential and dynamic learning environment. In order to meet the ever-changing challenges of the profession, the college promotes an integrated course of study; fosters the professional and intellectual development of its faculty, staff, and students; and engages in advanced research that addresses the critical needs of society.

Faculty

The College of Engineering's tradition of excellence attracts some of the most talented minds in engineering. At Drexel, students work with award-winning faculty of national and international esteem. Twenty of the college's faculty are recipients of the prestigious Young Investigators Awards from various federal agencies, and three are members of the National Academy of Engineering.

Engineering faculty are actively engaged in their fields, obtaining federal grants and embarking on revolutionary research.

Civil, Architectural, and Environmental Engineering

Drexel's Department of Civil, Architectural, and Environmental Engineering offers graduate degrees in Civil and Environmental Engineering. The graduate programs are designed to develop technical depth of expertise in the areas of construction, planning, design, operation of large-scale infrastructure systems, built facilities, and water resources management. The department requires specialized areas of concentration in: architectural systems engineering; environmental engineering; geotechnical, geosynthetics, geoenvironmental; hydraulics, coastal engineering, and water resources; and structures/structural mechanics. To learn more about the Department of Civil, Architectural, and Environmental Engineering visit www.drexel.edu/coe/cae.

Degrees Offered:

- Civil Engineering: MS, PhD
- Environmental Engineering: MS, PhD

Computer Science

In recent years, Drexel's Computer Science Department has expanded its research and curricula to include programs in artificial intelligence, information assurance and security, bioinformatics, computer graphics, and human-computer interaction. The department research initiatives have been supported by major federal research grants from Unisys, Nissan, Lockheed Martin, Intel, and Microsoft. One-third of the department's faculty are National Science Foundation CAREER awards recipients. The applied artificial intelligence group is nationally recognized. To learn more about the Department of Computer Science visit www.cs.drexel.edu.

Degrees Offered:

- Computer Science: MS, PhD
- Software Engineering: MS

Electrical and Computer Engineering

The Department of Electrical and Computer Engineering offers graduate degrees in Computer and Electrical Engineering. The graduate curriculum is focused on advanced research and is aimed at preparing experts in areas of technology characterized by significant intellectual, economical, and societal impacts. Among the areas studied and researched in the department: advanced communication systems, including mobile, Internet-based, and ad hoc networks, as well as large-scale network modeling and simulation; intelligent dynamical systems, including autonomous terrestrial, flying, and swimming robots and swarms of autonomous agents; high-speed and fault-tolerant computing; nanotechnology; photonics, including biophotonics; electrophysics and microwaves; smart and adaptive antennas and antenna arrays; image and signal processing in a wide spectrum of applications from archaeology to predictive toxicology of pharmaceuticals; proteomics and flow cytometry; and power and energy, including alternative and green sources of energy. To learn more about the Department of Electrical and Computer Engineering visit www.ece.drexel.edu.

Degrees Offered:

- Computer Engineering: MS, PhD
- Electrical Engineering: MS, PhD
- Electrical Engineering/Telecommunications Engineering: MS
- Software Engineering: MS

Engineering Management

Established in 1960, Drexel's Engineering Management program is designed to provide the background in management science necessary to advance from purely technical positions to supervisory responsibilities in such areas as research and development, production, engineering, design, and technical marketing. This program is multidisciplinary, offering a core curriculum and specialization in a selected area of management or technology. The program is geared toward professionals — students have the flexibility of choosing full- or part-time study. All coursework is completed online. The certificate is awarded after successful completion of four required graduate-level courses from the MS in Engineering Management sequence. To learn more about the Engineering Management program visit www.coe-online.drexel.edu/egmt.

Degrees Offered:

- Engineering Management: MS, Certificate

Materials Science and Engineering

Drexel's graduate Department of Materials Science and Engineering offers a thorough and focused grounding in the synthesis, development, and application of advanced materials. Graduate research areas include ceramics, composites, electronic and photonic materials, energy-related materials, metals, polymers, biomaterials, composite materials, functional materials, and nanostructured materials. The department houses the following research groups: Biomaterials and Biosurfaces in Tissue Engineering; Biomimetics Design Group; Center for the Plasma Processing of Materials; Ceramics Processing and Sensor Group; Dynamic Characterization Group; MAX Phase Materials Research Group; Mechanics of Microstructures Group; MesoMaterials Laboratory; Particulate Materials Group; Nano Materials Group; Natural Polymers and Photonics Group; and Soft Matter Research Group. To learn more about the Department of Materials Science and Engineering visit www.materials.drexel.edu.

Degrees Offered:

- Materials Engineering: MS, PhD

Mechanical Engineering and Mechanics

The Department of Mechanical Engineering and Mechanics strives to provide an innovative curriculum to reflect evolving technologies, develop competitive externally funded research programs, promote activities of the highest scholarly value, and create an inviting community of students and faculty. The most active areas of departmental research include biofluidics, medical robotics, biomechanics, heat transfer, combustion, active materials, composites, system dynamics, and control and manufacturing processes. The faculty are internationally renowned in their fields and have been recognized for major contributions to mechanical engineering research and education. To learn more about the Department of Mechanical Engineering and Mechanics visit www.mem.drexel.edu.

Degrees Offered:

- Mechanical Engineering: MS, PhD

Libraries

The Hagerty Library, located on the University City Main Campus, supports the curricula of the College of Engineering, including numerous academic journals. Audiovisual materials are available for viewing and listening at home, in fully equipped study carrels, and in in-group viewing rooms. Scanning; printing; and word-processing, spreadsheet, presentation, and other software programs are available in the Computer Center. A large study area and various library computers, printers, and photocopiers are available 24 hours a day for use by University students, faculty, staff, and residents.

Drexel University has three other libraries: the College of Law Library, also on Main Campus, the Hahnemann Library on the Center City Campus, and the Queen Lane Library, located on the College of Medicine Campus. Drexel graduate students also have access to the library resources of the University of Pennsylvania, the University of the Sciences in Philadelphia, and the Restaurant School at Walnut Hill College.

Facilities

The college houses numerous research laboratories within each department. For detailed information about research facilities visit www.drexel.edu/coe/research/research-centers.asp.

Bossone Research Enterprise Center – Completed in 2005, this \$35 million state-of-the-art center is home to facilities in information networking, smart infrastructures, and nanotechnology.

A.J. Drexel Nanotechnology Institute (DNI) – With more than 40 affiliated faculty members and various funding sources, including state, federal, and corporate partners, DNI coordinates collaborative efforts in nanotechnology research and education.

Centralized Research Facilities (CRF) – CRF includes state-of-the-art imaging and analytical laboratories in the Bossone Research Enterprise Center and the microfabrication laboratory in the college's LeBow Building. The major focus of this facility is to train and educate students on how to use cutting-edge research instruments. CRF provides access to advanced equipment for electron microscopy, vibrational spectroscopy, microfabrication, and nanoindentation.



About Drexel

Drexel University is a private, nonsectarian co-educational university, founded in 1891 by financier and philanthropist Anthony J. Drexel. Today it is a top-tier, comprehensive research university, enrolling more than 13,000 undergraduates and 7,000 graduate, professional, and certificate students on four separate campuses. The University's 13 colleges and schools offer 73 undergraduate majors, 78 master's and 32 doctoral programs. Drexel is fully accredited by the Middle States Association of Colleges and Schools, with additional programs accredited by their respective top professional accreditation bodies. Students come from 48 U.S. states and 103 foreign countries.

Philadelphia

Philadelphia is the nation's sixth largest city, with a metropolitan population of nearly six million. It is renowned for its historical sites and the diversity of its neighborhoods, and as a hub of the pharmaceutical, electronics, and finance industries. The city offers countless arts, entertainment, and recreational attractions including museums, theaters, major league sports franchises, and the nation's largest urban park system, as well as first-class shopping, dining, and nightlife. Drexel's Main Campus is located in the University City neighborhood, which is also home to the University of Pennsylvania, the University of the Sciences, and the Restaurant School at Walnut Hill College.



Admission

Acceptance for graduate study at Drexel University requires a four-year bachelor's degree from an accredited institution in the United States or an equivalent international institution. Although admission requirements vary by program, regular acceptance typically requires a minimum grade point average (GPA) of 3.0 for the last two years of undergraduate work. The GPA for any graduate work must be at least 3.0. Applicants for post-master's status must show potential for further study by having maintained at least a 3.0 GPA in their master's-level studies. (Individual departmental requirements may exceed this minimum.)

The admission committee evaluates all credentials submitted by applicants to determine a student's ability and potential to succeed in graduate study. In addition, the committee is interested in the applicant's ability to contribute to his/her program of study and to the University community as a whole.

Applicants may only apply to one program at a time. Drexel will waive the application fee if you apply online or submit your application during a campus visit. For more information, see www.drexel.edu/apply/coe.

Financing

Students must complete the Free Application for Federal Student Aid (FAFSA) annually to be eligible for federal, state, or institutional aid. File online at www.fafsa.ed.gov. Drexel's school code is 003256. To learn more, visit www.drexel.edu/financialaid.

Merit-based aid in the form of teaching, research, and graduate assistantships is awarded by the graduate departments based on need and availability of funds. Questions should be directed to the graduate advisor.

Contact Us

Graduate Admissions

Drexel University
3141 Chestnut Street
Philadelphia, PA 19104-2876
215-895-6700
1-800-2-DREXEL
enroll@drexel.edu
www.drexel.edu/em

The College of Engineering
215-895-2210
engineering@coe.drexel.edu
www.drexel.edu/coe

Apply online at www.drexel.edu/apply