# ENGINEERING AT DREXEL UNIVERSITY GRADUATE STUDIES

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 67 by *U.S. News & World Report*'s 2013 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: Chemical Engineering, 74; Civil Engineering, 50; Electrical Engineering, 55; Environmental Engineering, 53; Materials Engineering, 39; and Mechanical Engineering, 49.

# **Our Programs**

The College of Engineering offers the following degrees:

- Chemical Engineering (MS, PhD)
- Civil Engineering (MS, PhD)
- Computer Engineering (MS)
- Construction Management (MS)
- Cybersecurity (MS)
- Electrical Engineering (MS, PhD)
- Electrical Engineering/Telecommunications
   Engineering (MS)
- Engineering Management (MS)
- Engineering Technology (MS)
- Environmental Engineering (MS, PhD)
- Materials Science and Engineering (MS, PhD)
- Mechanical Engineering (MS, PhD)
- Project Management (MS)
- Property Management (MS)

## For More Information

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

College of Engineering:

www.drexel.edu/engineering

Admissions:

www.drexel.edu/grad/engineering

Graduate Catalog:

www.catalog.drexel.edu/graduate



## **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, co-operative education, global experience, and research.

The College of Engineering educates students to become highly competent engineers 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.

# **Programs Offered**

**Master of Science (MS).** Approximately 45 credits are required for the master's; thesis and non-thesis options are available depending on the program.

**Doctor of Philosophy (PhD).** To be awarded the PhD, students must complete 90 credits (credits earned toward a master's degree may apply toward the 90), pass the candidacy examination, and write and defend a thesis/dissertation. Additional requirements vary by program.

# Chemical Engineering (MS, PhD)

Drexel's graduate programs in Chemical Engineering emphasize engineering design and scientific analysis, developing broadly educated individuals who are versed in modern theories, cognizant of the behaviors of engineering systems, and aware of current mathematical and engineering tools that are useful for providing solutions to issues related to chemical engineering, biochemical engineering, and materials engineering. Programs are arranged to meet the needs and interests of individual students in consultation with graduate and thesis advisors.

#### Civil Engineering (MS, PhD)

Drexel's graduate degrees in Civil Engineering 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. Students may choose a specialization in building systems, geotechnical engineering, hydraulic and coastal engineering, structural engineering, or water resources.

## **Computer Engineering (MS)**

The Master of Science in Computer Engineering curriculum is designed for students from a variety of backgrounds in order to equip them with the necessary tools to grasp and develop new technological trends, as well as to develop knowledge and skills in at least one area of specialization.

#### **Construction Management (MS)**

Drexel's Master of Science in Construction Management increases the students' breadth and depth of knowledge in the the principles and practices of construction management, including leadership and management of project deadlines, owner demands, and regulations. Concentrations are available in construction project management, real estate, and sustainability and green construction.

#### Cybersecurity (MS)

Preparing students with both academic and practical training to be competitive in today's rapidly changing technical landscape, the Master of Science in Cybersecurity provides deeply technical and specialized training to enable graduates to understand, adapt, and develop new technologies to confront emerging threats in cybersecurity.

## **Electrical Engineering (MS, PhD)**

The Electrical Engineering graduate degrees prepare students for careers in research and development and aim to endow graduates with the ability to identify and address new technical and scientific challenges. Students are able to choose or customize an area of specialization. Students in the master's program may choose to complete a six-month Graduate Co-op.

#### **Electrical Engineering/Telecommunications Engineering (MS)**

This interdisciplinary master's program combines a strong foundation in telecommunications engineering with training in technological issues such as global concerns, business, and information transfer and processing to provide students with an in-depth knowledge of the field.

#### **Engineering Management (MS)**

Established in 1960, Drexel's Engineering Management multidisciplinary program is completed online and is designed to provide the background and specialization 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. Drexel also offers a certificate option in Engineering Management.

## **Engineering Technology (MS)**

The Master of Science in Engineering Technology is designed to provide specialized engineering technology education and develop andvanced-level practitioners in resolving technical problems for those who already hold a bachelor's degree in engineering technology or a related field. The program is flexible, allowing students to select a combination of courses relevant to their individual career goals or advanced study.

#### **Environmental Engineering (MS, PhD)**

Drexel's graduate programs in Environmental Engineering engage a multidisciplinary approach to minimize the effect of human activities on the physical and living environment for health and sustainability. Students complete a sequence in an area of emphasis and may also elect a specialization.

# Materials Science and Engineering (MS, PhD)

The graduate programs in Materials Science and Engineering engage students from a broad spectrum of undergraduate backgrounds in relevant research led by internationally renowned faculty and prepare students with a breadth and depth of knowledge suitable for individuals seeking careers in academia and/or industry. The department houses many research groups funded through government programs and industrial partners.

#### Mechanical Engineering (MS, PhD)

The master's and doctoral programs in Mechanical Engineering 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 alternative energy, plasma science, air and space systems, robotic systems and intelligent control, biomechanics, advanced manufacturing, and high performance materials. The faculty are internationally renowned in their fields and have been recognized for major contributions to mechanical engineering research and education.

## **Project Management (MS)**

A part-time online program, the Master of Science in Project Management is designed to equip professionals with the fundamental competencies expected of project managers in virtually any field. The course content is mapped to the internationally recognized Project Management Institute's Body of Knowledge (PMBOK®).

#### **Property Management (MS)**

Drexel's Master of Science in Property Management is a part-time program intended to educate professionals in the field of property management, stressing strategic decision making and providing students with interactive experiential learning opportunites that involve research and analysis. Designed for experienced managers with undergraduate study in areas outside of property management and real estate, students complete core courses with the option of specialization based on their professional interests.

## Libraries

The Hagerty Library, located on the University City 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 group viewing rooms. Scanners, printers, and software (including word processing, spreadsheet, and presentation programs) are available in the Computer Center. The Bookmark Café is open 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 the University City Campus, the Hahnemann Library on the Center City Campus, and the Queen Lane Library, located on the Queen Lane 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/engineering/research.

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 Engineering Center. 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 coeducational university, founded in 1891 by financier and philanthropist Anthony J. Drexel.

Today it is a top-tier, comprehensive research university, enrolling nearly 16,000 undergraduates and more than 9,000 graduate, professional, and certificate students on four separate campuses. The University's colleges and schools offer over 80 undergraduate majors, and more than 70 master's and 30 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 all 50 U.S. states and 133 foreign countries.

# **Philadelphia**

Philadelphia is the nation's fifth 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 one of the nation's largest urban park systems, as well as first-class shopping, dining, and nightlife.

Drexel's University City Campus is located in Philadelphia's 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/grad/apply.

## **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/drexelcentral/finaid.

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/grad

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

Apply online at www.drexel.edu/grad/apply.