

# ARCHITECTURAL ENGINEERING



## ***Architectural Engineering at Drexel***

Architects design buildings; architectural engineers make those buildings function optimally in terms of structural performance, shelter, and interior comfort. The Architectural Engineering major at Drexel prepares graduates for professional work in the analysis, design, construction, and operation of buildings — residential, commercial, institutional, and industrial. The program develops engineers familiar with all aspects of safe and economical construction.

## ***Drexel Co-op for Architectural Engineering***

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

- Three Co-op Option (Five Years): includes three six-month periods of full-time employment
- One Co-op Option (Four Years): includes one six-month period of full-time employment

## **A Few Drexel Co-op Position Titles**

- CAD Designer
- Field Inspector
- Special Projects Manager
- Structural Designer

## ***Employers***

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

- Children's Hospital of Philadelphia
- CVM Structural Engineers
- McBride Engineering Solutions, Inc.
- Thornton Thomasetti

## ***Potential Careers***

**Architectural Engineer.** Plans projects, develops the structural and mechanical systems for buildings, and sometimes manages building construction. Especially versed in building materials, foundations, structural design, environmental systems, building codes, and building operation.

**Civil Engineer.** Designs and supervises the construction of large-scale projects: buildings, roads, bridges, tunnels, airports, and water supply systems. Considers a project's construction costs, expected lifetime, government regulations, and environmental hazards such as earthquakes.

**Construction Manager.** Coordinates a construction project from its initial development through final construction. Develops a schedule, making sure that the project is completed on time and within budget. Obtains necessary licenses and permits, and oversees the progress of the project.

## **Courses You'll Really Enjoy**

**Architectural Engineering Design.** Emphasizes the development of insight into the solution of building systems design problems, development of in-depth understanding of building systems design synthesis, and integration in a single building of modest scale and complexity.

**Architectural Illumination and Electrical Systems.** Covers buildings' electrical systems, including power demand, distribution, and control; and building illumination techniques, including lighting demand, layout, and energy analysis.

**Control Systems for HVAC.** Introduces basic control concepts with applications to HVAC systems, direct digital control, control loops, system modeling, transfer functions, selecting and locating sensors and actuators, design and tuning control algorithms, and design and programming of HVAC control systems.

**Mechanics of Materials.** Covers definitions of stress and strain, uniaxial loading, torsion, bending moments and shear forces in beams, bending stresses and shear stress in beams, and stress transformation.

**Structural Design.** Incorporates principles of design of structural members and systems, including loads on structures, structural safety, and structural members and their behavior. Introduces elastic and limit design procedures.

### **Learn More: University Catalog**

A list of required courses for the Architectural Engineering major is available online at [www.drexel.edu/catalog](http://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 Office of Graduate Studies after completing a minimum of 90 credits. To learn more about accelerated degree options, visit [www.drexel.edu/em/ug/accelerated](http://www.drexel.edu/em/ug/accelerated).

## **For More Information**

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