

ARCHITECTURAL ENGINEERING, B.A.E.

Begin Campus: Any Penn State Campus

End Campus: University Park

Program Description

This major emphasizes the application of scientific and engineering principles to the planning, design, and construction of buildings and building systems. The goal of the program is to provide engineering graduates with the best education available for careers in the building professions. Graduates will have the ability to practice as registered professional engineers in a variety of areas, both public and private, related to the planning, design, construction, and operation of buildings and to assume a place of leadership in society.

Four options are available in the ten-semester major:

1. the Construction option, which emphasizes building construction engineering and construction management;
2. the Lighting/Electrical option, which emphasizes the design of lighting and electrical systems for buildings;
3. the Mechanical option, which emphasizes the design of heating, ventilating and air-conditioning systems in buildings; and
4. the Structural option, which emphasizes the analysis and design of building structural systems.

Courses in architectural design are included in all options to give the engineering student an understanding of architectural design and its relation to engineering. Courses in engineering design are provided throughout the program. The design experience is culminated in a year-long capstone design course.

The professional degree, Bachelor of Architectural Engineering, is granted upon the satisfactory completion of the five-year program.

What is Architectural Engineering?

Architectural Engineering is an interdisciplinary field focused on creating integrated building solutions, both in outcome and design process, to produce optimally engineered building systems. This is achieved through close coordination between several primary focus areas, including Structural, Mechanical, Lighting, Electrical, Acoustical, and Construction. The interdisciplinary approach of Architectural Engineering seeks to reduce the carbon footprint of buildings while improving the health, comfort, and productivity of building occupants. This interdisciplinary approach is necessary to respond to the most urgent societal and environmental challenges emerging from urbanization across the globe.

You Might Like This Program If...

- You have aptitude in math and science.
- You appreciate the artistic and emotive aspects of architecture.
- You are passionate about human-centric design, indoor environmental quality, sustainability, energy conservation, or net-zero and high-performance buildings.
- You like to organize parts of a system or process, a handy skill in the planning, coordinating, budgeting, design, construction, and operation of building projects.

- You seek a team-oriented work environment with excellent prospects for advancement into project management and corporate leadership.