

ENGINEERING DESIGN, MINOR

Requirements for a minor may be completed at any campus location offering the specified courses for the minor. Students may not change from a campus that offers their major to a campus that does not offer their major for the purpose of completing a minor.

Program Description

To address design responsibilities necessary for engineering graduates, the engineering design minor develops design skills in students through a series of core project-based design courses supplemented by general electives in their discipline or related field. Through team-based projects, students apply engineering design processes to address design opportunities, from exploration of the problem space through exploration of the solution space. By focusing on different elements of a design process (e.g., defining and exploring the problem vs. identifying, prototyping, and evaluating design solutions), but covering in totality, the minor's courses complement each other and provide students with a deeper understanding of engineering design. Specific areas of emphasis in this minor include problem framing, stakeholder engagement, human-centered design, rapid prototyping, prototyping to validate assumptions, systems-level design and professional communication. The tools and techniques developed in this minor should be broadly applicable to various engineering disciplines.

Entrance to Minor

For admission into the minor, students must have completed EDSGN 100 and EDSGN 367.

Program Requirements

Requirement	Credits
Requirements for the Minor	18

Requirements for the Minor

A minimum of 18 credits is required for completion of the minor with no fewer than 9 credits at the 400-level or above.

A grade of C or better is required for all courses in the minor, as specified by Senate Policy 59-10 (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/59-00-minors-and-certificates/#59-10>).

In addition, at least six credits of the minor must be unique from the prescribed courses required by a student's major(s).

Code	Title	Credits
Prescribed Courses		
<i>Prescribed Courses: Require a grade of C or better</i>		
EDSGN 100	Cornerstone Engineering Design	3
EDSGN 367	Design Thinking and Making	3
EDSGN 467	Prototyping to Launch	3
EDSGN 485	Engineering Design Portfolio	1
Additional Courses		
<i>Additional Courses: Require a grade of C or better</i>		
Select 6-8 credits from the following courses:		6-8
EDSGN 270	Summers by Design: An International Engineering Design Experience	
EDSGN 452	Projects in Humanitarian Engineering	
EDSGN 453	Design for Developing Communities	

EDSGN 462	Introduction to Design for Additive Manufacturing
EDSGN 468	Engineering Design and Analysis with CAD
EDSGN 494	Research Project
EDSGN 496	Independent Studies
ENGR/WFED 405	Project Management for Professionals
ENGR 310	Entrepreneurial Leadership
ENGR 407	Technology-Based Entrepreneurship
ENGR 408	Leadership Principles
ENGR 409	Leadership in Organizations
ENGR 422	Leadership of International Virtual Engineering Teams

Supporting Courses and Related Areas

Supporting Courses and Related Areas: Require a grade of C or better

None specified. In consultation with the minor director, students may 0-2 receive up to 2 course credits for an approved course in support of their engineering design minor.