Defined simply, Engineering Design is the process of creating a new product or process to meet a defined need while taking into account constraints such as cost, practicality, and safety. The design process begins with creating an open-ended problem statement to address an unmet need. Through careful consideration of existing solutions and other research, students establish goals that the design should meet. Following a period of brainstorming, students select ideas that best meet the design goals. Building and testing technologies is challenging and forces students to apply their 'book knowledge' (e.g., equations) to develop a physical or computational solution. A proof-of-concept prototype usually needs extensive revision and testing before it can be manufactured at scale. Throughout the design process, project planning and communication are essential. Because solving engineering challenges is often open-ended, it is very important to give students many opportunities to experience the steps in the process.

The minor in Engineering Design capitalizes on strengths in engineering design at Rice—both innovative and successful engineering design courses and unsurpassed facilities that are available for undergraduate engineering students starting in their freshman year. Students may begin the minor in their freshman year and take courses throughout their duration of undergraduate studies. The skills they gain will complement their academic major and provide a deep understanding and skill set to embark successfully in engineering design careers.

Minor

- Minor in Engineering Design (https://ga.rice.edu/programs-study/departments-programs/engineering/engineering-design/engineering-design-minor/)

Engineering Design does not currently offer an academic program at the graduate level.

Co-Chairs

Z. Maria Oden, Bioengineering
Joseph R. Cavallaro, Electrical and Computer Engineering

Faculty Advisory Board

Joseph R. Cavallaro, Electrical and Computer Engineering
Deirdre Hunter, Oshman Engineering Design Kitchen
Z. Maria Oden, Bioengineering
Matthew Wettergreen, Oshman Engineering Design Kitchen
Gary L. Woods, Electrical and Computer Engineering

For Rice University degree-granting programs:

To view the list of official course offerings, please see Rice’s Course Catalog (https://courses.rice.edu/admweb/ISWKSCAT.cat?p_action=cata/)

To view the most recent semester’s course schedule, please see Rice’s Course Schedule (https://courses.rice.edu/admweb/ISWKSCAT.cat)

Description and Code Legend

Note: Internally, the university uses the following descriptions, codes, and abbreviations for this academic program. The following is a quick reference:

Course Catalog/Schedule

- Course offerings/subject codes: Courses from various subjects may apply towards this program.

Program Description and Code

- Engineering Design: EDES

Undergraduate Minor Description and Code

- Minor in Engineering Design: EDES

CIP Code and Description

- EDES Minor: CIP Code/Title: 15.1502 - Engineering Design

Classification of Instructional Programs (CIP) 2010 Codes and Descriptions from the National Center for Education Statistics: https://nces.ed.gov/ipeds/cipcode/