

# ENGINEERING DESIGN

## Contact Information

### Engineering Design

<http://oedk.rice.edu/minor> (<http://oedk.rice.edu/minor/>)

Oshman Engineering Design Kitchen

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### Z. Maria Oden

Program Co-Chair

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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*

## Executive Committee

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*

## Minor Advisors

Joseph R. Cavallaro, *Electrical and Computer Engineering*

Deirdre Hunter, *Oshman Engineering Design Kitchen*

Z. Maria Oden, *Bioengineering*

Matthew Wettergreen, *Oshman Engineering Design Kitchen*

## Faculty Advisory Board

Heather Bisesti, *Oshman Engineering Design Kitchen*

Joseph R. Cavallaro, *Electrical and Computer Engineering*

Kevin Holmes, *Oshman Engineering Design Kitchen*

Deirdre Hunter, *Oshman Engineering Design Kitchen*

Z. Maria Oden, *Bioengineering*

Marcia K. O'Malley, *Mechanical Engineering*

Rafael Verduzco, *Chemical and Biomolecular Engineering*

Matthew Wettergreen, *Oshman Engineering Design Kitchen*

*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/!SWKSCAT.cat?p\\_action=cata](https://courses.rice.edu/admweb/!SWKSCAT.cat?p_action=cata)).

To view the most recent semester's course schedule, please see *Rice's*

*Course Schedule* (<https://courses.rice.edu/admweb/!SWKSCAT.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

### Department (or Program) Description and Code

- Engineering Design: EDES

### Undergraduate Minor Description and Code

- Minor in Engineering Design: EDES

### CIP Code and Description<sup>1</sup>

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

<sup>1</sup> Classification of Instructional Programs (CIP) 2020 Codes and Descriptions from the National Center for Education Statistics: <https://nces.ed.gov/ipeds/cipcode/>