### Degree Requirements

#### Master of Engineering (M.Eng.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-700 Professional Degree Policies (http://gradschool.psu.edu/graduate-education-policies).
The M.Eng. in Engineering Design requires the completion of a scholarly paper and the Engineering Design Portfolio.

**Master of Science (M.S.)**

Requirements listed here are in addition to Graduate Council policies listed under GCAC-600 Research Degree Policies. (http://gradschool.psu.edu/graduate-education-policies)

The M.S. degree is an academic degree, which is strongly oriented toward research. To receive the Master of Science degree in Engineering Design, a student must complete at least 32 credits beyond the baccalaureate degree. At least 18 credits in the 500 and 600 series, combined, must be included in the program. A minimum of 12 credits in course work (400 and 500 series), as contrasted with research, must be completed in the major program. A thesis is required and at least 6 credits of thesis research (EDSGN 600/EDSGN 610) must be included in the program.

A minimum of 32 graduate credits is required as follows:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSGN 581</td>
<td>Engineering Design Studio I</td>
<td>3</td>
</tr>
<tr>
<td>EDSGN 582</td>
<td>Engineering Design Studio II</td>
<td>3</td>
</tr>
<tr>
<td>EDSGN 585</td>
<td>Engineering Design Portfolio</td>
<td>1</td>
</tr>
<tr>
<td>EDSGN 590</td>
<td>Colloquium</td>
<td>1</td>
</tr>
</tbody>
</table>

**Focus Area Electives**

Students must select a minimum 12 credits of focus area electives from the following:

- EDSGN 401 Engineering Systems Design
- EDSGN 479 Human Centered Product Design and Innovation
- EDSGN 547 Designing for Human Variability
- EDSGN 548 Interaction Design
- EDSGN 549 Design Decision Making
- EDSGN 558 Systems Design

**General Electives**

Students must select 6 credits of general electives from the following:

- IE 418 Human/Computer Interface Design
- IE 460 Service Systems Engineering
- IE 470 Manufacturing System Design and Analysis
- IE 520 Multiple Criteria Optimization
- IE 557 Human-in-the-Loop Simulation
- IE 563 Computer-Aided Design for Manufacturing
- IST 413 Usability Engineering
- IST 520 Foundations in Human-Centered Design
- IST 521 Human-Computer Interaction: The User and Technology
- ME 561 Structural Optimization Using Variational and Numerical Methods
- ME 565 Optimal Design of Mechanical and Structural Systems
- MANGT 510 Project Management
- SYSEN 550 Creativity and Problem Solving I
- SYSEN 555 Invention and Creative Design

**Culminating Experience**

- EDSGN 600 Thesis Research: 6
- or EDSGN 610 Thesis Research Off Campus: 6

1 Or from a list of approved courses maintained by the program.

The M.S. in Engineering Design requires the completion of an M.S. thesis and the Engineering Design Portfolio.

**Student Aid**

Graduate assistantships available to students in this program and other forms of student aid are described in the Tuition & Funding section of The Graduate School’s website. Students on graduate assistantships must adhere to the course load limits set by The Graduate School.

International students must take AEOPPT and score between 250 and 300 in order to begin a teaching assistantship; students who require remediation may be assigned a teaching assistantship only after addressing the deficiencies identified by the test.

**Courses**

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

Engineering Design (EDSGN) Course List (https://bulletins.psu.edu/university-course-descriptions/graduate/edsgn)

**Contact**

- **Campus**: University Park
- **Graduate Program Head**: Sven G Bilen
- **Director of Graduate Studies (DGS) or Professor-in-Charge (PIC)**: Scarlett Rae Miller
- **Program Contact**: Marie Jean Laird
  - 213 Hammond Building
  - University Park PA 16802
  - mjk5287@psu.edu
  - (814) 863-3026
- **Program Website**: View (http://sedtapp.psu.edu/design/graduate-program.aspx)