ENGINEERING DESIGN AND INNOVATION

https://design.northwestern.edu/engineering-design-innovation/

Degree Types: MS

The Master of Science in Engineering Design and Innovation (https://design.northwestern.edu/engineering-design-innovation/) (EDI) at the Segal Design Institute is intended for recent engineering graduates seeking to lead the design of future products, services, and technologies.

Our students learn how to attack design problems with a human-centered approach to solve the needs of real people. Methods include user observation, visualization, rapid prototyping, and iteration.

EDI attracts engineers who like to create new things, are comfortable with complex problems, and care about culture and contemporary context. The coursework focuses heavily on hands-on, team-based projects. Graduates of EDI are prepared to collaborate on, and lead, development teams to create innovative and effective products and services.

Applicants should have a bachelor’s degree in engineering or a related discipline, or adequate demonstration of strong analytic skills.

Degrees Offered

- Engineering Design and Innovation MS (https://catalogs.northwestern.edu/tgs/engineering-design-innovation/engineering-design-innovation-ms)

Engineering Design and Innovation Courses

DSGN 350-0 Intellectual Property and Innovation (1 Unit)
The critical role of engineers in the invention/creative process and of technologists in wealth creation.
Prerequisite: senior standing or consent of instructor.

DSGN 375-0 Data as Art (1 Unit)
Information visualization across multiple disciplines.

DSGN 395-0 Special Topics (1 Unit)
Topics relevant to design engineering and approved by the institute.
Prerequisite: consent of instructor.

DSGN 401-1 Human-Centered Design Studio 1 (1 Unit)
This course is part one of a year-long studio course, providing a project-based introduction to the engineering design of products and processes that meet human needs. Students are given a problem area in which to innovate and will be led through the process of investigating cultural, emotional, technological and business factors, developing new concepts, creating and testing prototypes, and iterative design. Principal focus will be placed on understanding the interaction of people and products/services. Formal interaction modeling techniques will be introduced, and students will learn to prototype interactive systems. Teaching methods include lectures, labs, reading, homework assignments and projects.

DSGN 401-2 Human-Centered Design Studio 2 (1 Unit)
This course builds upon DSGN 401-1, continuing the theme of interaction design. In the first part of the course, students are given a problem area, but will be challenged to explore novel and multimodal approaches to interaction, including gestural, tactile, auditory, and others. Methods of prototyping interactive mechatronic systems will be introduced. In the second part of the course students are challenged to design an experience which grows out of the interactions between a person and a product or service. Personas, use cases and scenarios will be introduced for modeling experiences. Teaching methods include lectures, labs, reading, homework assignments and projects.

DSGN 410-0 Design Research (1 Unit)

DSGN 419-0 Responsible Conduct of Research Training (0 Unit)

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