

# ENGINEERING DESIGN AND INNOVATION

---

<b>Graduate Program Head</b>	David Mazyck
<b>Program Code</b>	EDI
<b>Campus(es)</b>	University Park
<b>Degrees Conferred</b>	Master of Engineering (M.Eng.) Master of Science (M.S.)
<b>The Graduate Faculty</b>	View ( <a href="https://secure.gradsch.psu.edu/gpms/?searchType=fac&amp;prog=EDI">https://secure.gradsch.psu.edu/gpms/?searchType=fac&amp;prog=EDI</a> )

The Engineering Design and Innovation program prepares the innovators of the future. Core EDI courses: 1) build theoretical and practical knowledge and skills related to design methods; 2) develop entrepreneurial skills related to business finance, intellectual property, and marketing; 3) develop knowledge of policy-making and the political process and how these advance or constrain engineering solutions, and ability to apply strategies to influence the system; and 4) build competencies to evaluate and apply leadership and innovation management strategies to identify opportunities for new products and businesses in alignment with a corporation's business strategy and promote internal innovation.

Students may specialize in one of the following focus areas: Engineering Design; Engineering Leadership and Innovation Management; Engineering, Law, and Policy; or Entrepreneurship.

**Engineering Design (EDSGN):** This specialty focuses on preparing the innovators of the future. Specifically, this specialty integrates the disciplines of engineering with design theory, business, psychology, and art through project-based learning. Students will develop the technical depth and breadth to solve problems related to products, systems, processes, and services.

**Entrepreneurship (ESHIP):** This specialty focuses on the development of knowledge and skills related to the creation of new ventures for products and services. Students will be able to identify an opportunity, evaluate and create a value proposition around the opportunity, develop and analyze a financial model for the new venture, develop a sales and marketing plan for the new venture and consider how to optimally deliver the product or service. The student will be able to apply these skills to new products or services for a new venture or within an existing organization.

**Engineering, Law, and Policy (ELP):** This specialty focuses on the development of knowledge and skills related to science and technology policy, legal and regulatory policy, intellectual property, and complex systems. Students will acquire strong technical and analytical skills in systems thinking, communicate effectively across disciplines, and acquire an understanding of how engineering, law and policy intersect and drive (or constrain) the development and advancement of ethical and sustainable solutions to complex problems in our global society.

**Engineering Leadership and Innovation Management (ELIM):** This specialty focuses on the development of knowledge and skills related to the ability to identify and manage innovation opportunities, and work effectively in a globally connected engineering environment. Students will be able to evaluate leadership and innovation management strategies for corporate innovation and identify opportunities for new products

and businesses in alignment with an organization's strengths and weaknesses; effectively consider cultural and international business differences; apply project management methods; and develop self-awareness of personal leadership attributes and areas for growth in fostering cultures of innovation and creativity in engineering teams.