

Senior Design is a two-course sequence that runs from August to April. The course utilizes the integration of all engineering components as its principal theme. Each department sets requirements for student projects.

Biomedical Engineering

Students are required to work in a team to identify and address a clinical need, design/redesign a component or system to meet functional requirements and constraints, construct a prototype and perform appropriate verification and validation testing.

Civil Engineering

Students are required to work as part of a team to develop a scope of work and design various components of a civil engineering project.

Electrical & Computer Engineering

Electrical and Computer Engineering students are required to work in teams to establish a project description and scope. During the design process, specific attention is given to identifying and working to the constraints and standards of the project. Students implement their design project based on these as well as curricular components through an iterative approach, and deliver a functional physical prototype and/or a viable and practical solution to the problem.

Engineering Technology

The student is required to fully define their project, develop the standard industry relevant documentation, and execute the proposed project in a timely and professional manner as related to their selected areas of study in the Engineering Technology Program.

Mechanical Engineering

After identifying the project, the Mechanical Engineering students are required to form a team to design/redesign a component or system through an iterative approach and deliver a functional physical prototype and/or a viable and practical solution to the problem.

Students work in groups to develop a new product from conceptualization and design to manufacturing and marketing. This senior year design class is the “capstone” course in the engineering curriculum. As such, it acts as the culmination of the engineering design sequence and draws upon student training in all previous courses to prepare a final design project. This course utilizes Six Sigma methodology to reduce variation and defects in order to deliver products and services that meet customer requirements. The students will focus on identifying factors critical to quality as determined by the customer.

This course is primarily conducted in the form of discussions, lectures, and presentations. Two well written reports and professionally delivered presentations by each group are required each semester, as well as a team contract submitted at the beginning of the semester, a website updated throughout the semester, and a poster submitted near the end of the semester.

At the end of spring semester, student teams contribute to the college’s Engineering Design Day, a showcase of innovative, creative, and multi-disciplinary projects. Each team, made up of students from among five academic departments, present their academic capstone design projects simulating real world experiences. Senior Design project sponsors are invited to join students and faculty on campus for this event on April 18th, 2025.

Senior Design
Sponsorship Packet
August 2024 - April 2025

Herff College of Engineering



PROJECT PROPOSAL

PROJECT TITLE:

PROJECT SPONSOR (*name*):

MAIN POINT OF CONTACT (*name and email*):

KEYWORDS (*please list relevant keywords, e.g. 'product flow', 'process improvement', 'ideation', etc.*):

PROJECT DESCRIPTION (*please provide a brief description, 1-2 paragraphs, of the project*):

EXPECTED DELIVERABLES (*please provide a list of expected deliverables, e.g. 'improved process flow chart', 'implementation plan', 'ROI analysis', 'product prototype'; please also note if you expect students' solutions to be (i) selected and analyzed – minimum for the course, (ii) implemented, or (iii) implemented and monitored – ideal, but often not possible with the time constraint*):

PROGRAM DESCRIPTION

Sponsor participation is essential to the success of this program and we will make every effort to accommodate potential sponsors who have projects that fit within the framework discussed. Two tiers of sponsorship are available: **Level 1: \$10,000** and **Level 2: Greater than \$10,000**. At both of these levels, funds will contribute to project expenses, program support, and capstone design enhancement.

Each sponsored team will be allocated funds to cover actual expenses, which include hardware purchase and fabrication, supplies, transportation meeting sponsors, etc. to complete the project. Program support funding consists of purchasing & logistics, machine shop personnel, presentation materials, annual open house expenses, and other design infrastructure needs.

Capstone design enhancement projects include:

- (a) A dedicated work space for students to collaborate in teams on design projects. The lab will include state-of-the-art collaborative work benches, engineering analysis tools, computers and multimedia systems, design tools and equipment.
- (b) Development of an Entrepreneurial Senior Design program to inspire students pursuing design projects with commercial potential.
- (c) Expansion of collaborative and multi-disciplinary design projects with domestic and international partners. These enhancement projects will support the best learning environment to prepare our students professionally.

For more sponsorship and project implementation information, please contact Shelia Moses at 901.678.4933 or srmoses@memphis.edu.

The best method of sponsorship is through a donation to the Herff College of Engineering. Donations can be made online, in person, by mail or by phone. Specific information on how to donate can be found online at engr.memphis.edu/giving.

If a sponsor is unable to provide funding through such a donation, research grant or contract funding vehicles can be arranged. The department will be happy to provide further information on request.

To remit contributions or for further information on how to make contributions, please contact:

Clarice Hunt

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Herff College of Engineering
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CHAIRS & COORDINATORS

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