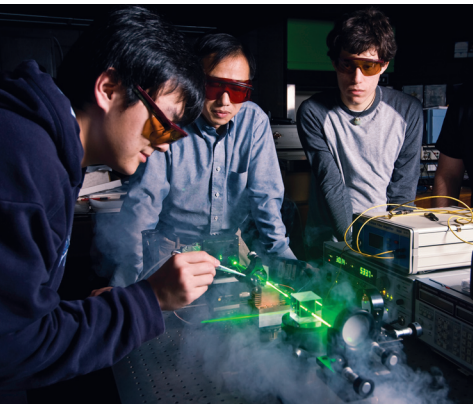**Senior Capstone Project sponsorship is a valuable partnership opportunity—one you won't want to miss!**

Sponsors contribute two key elements to the Senior Capstone Project experience:

▶ Real-world design problems our students work to solve

▶ Mentorship that helps our students devise solutions that meet actual sponsor needs.

### Recent Capstone Projects include:

**Electricity Generating Wave Attenuation Device**
Dr. MacDonald of the School of Marine Science and Technology at UMass contracted with students to design a device to generate electricity from waves.

**Power-assisted Steering System**
Edson Marine International, a top industry marine manufacturer, contracted with students to design a "drive by wire" steering system with realistic feel for sailing yachts.

**Android-based Training Game**
The Naval Undersea Warfare Center, of Newport Rhode Island, contracted with students to develop a simulation game for training sailors to correctly perform periscope observations.

**Interactive Textbook Reader for the iPad and Android Devices**
Students-designed application with working reference links, concept animations, resizing and rotation of figures and text, "sticky notes" and integrated indexing and searching capacity including text, images, and notes.

**Sensing and Actuating Fibers**
EY technologies, a custom industrial yarn engineering group, worked with a student team to develop fibers that can sense stress in a fabric and cause a fabric to contract when activated electrically.

**Tissue Engineering**
Project students worked on production of phage in bacterial cells for the U.S. Army and on making fibers from recombinant human collagen for tissue engineering.

## It's a win for all of us.

EY Technologies provides students with diverse, real-world industry experience while they in turn offer us innovative approaches and solutions we would not otherwise have considered."

**Dr. Rathna Perera,** EY Technologies Engineering Director of New Product Development and Technology

### Possible criteria for your project design:

▶ Do you have an idea or need for a new mechanical or electro-mechanical device or process, but don't have the time or skills to do it yourself?

▶ Might a custom spreadsheet or database application improve decision making or record keeping in your manufacturing or service operations?

▶ Are you thinking about utilizing mobile applications in your business?

▶ Would you like to analyze, optimize, and clearly document work procedures to reduce process and product variability?

▶ Do you do something manually that could be done more efficiently if it was automated?

### Here's what we ask of our sponsors:

An appropriate scope or project challenge to be completed in a 24-week timeframe. A conceptual solution is created within the first 12 weeks, and implementation, testing, and revision of that solution is completed in the following 12 weeks.

Project sponsors and student teams must commit to the following elements of the project: fully defined design specifications from project start to completion; consideration of multiple design alternatives; implementation, testing, and revision of the design.

### Senior Capstone Project Sponsorship—$5,000

The College of Engineering seeks project sponsors at the cost of $5,000 per project. Costs cover project supplies, laboratory costs and initial project design. Additional funds for project prototypes or special materials may be required and would be outlined in the project contract.

**Proposals due annually by August 1**
Download a Senior Capstone Project Application Form at
**www.umassd.edu/capstone**

Over the course of the project, the client typically makes several trips to UMass Dartmouth to meet with the student team and may also host the team for onsite visits. The most successful projects are those that have the highest sponsorship involvement. Project mentors and student team leaders must outline a communication plan that ensures project success.

Project sponsors may loan equipment and appropriate waivers will be provided.

By default, any Intellectual Property (IP) created by the student team during a project belongs to the students. However, other arrangements are possible.

## Senior Capstone Project timeline and student milestones

A sample timeline for a project is noted below. It is possible to extend an internal company project or add on to a current research program. The most successful projects are an overlap of student expertise and interests and industry priorities. If you have a short joint research project on site at your company or want to suggest a research idea on campus, please let us know.

### Sample timeline

**Late September–mid October**
Form team and select project
Meet with sponsoring organization and generate comprehensive project requirements list
Conduct background research and begin benchmarking
*Key milestone: Background Report document*

**Mid October–early November**
Translate project requirements list into quantitative and testable specifications
Complete benchmarking
Consider multiple potential solutions to design problem
*Key milestone: Preliminary Proposal document*

**Early November–mid December (end of 1st term)**
Devise testing procedures for all project specifications
Select one design solution from options described in Preliminary Proposal
Specify ALL aspects of selected design solution
*Key milestone: Final Proposal document*

**Winter Break (mid December–early January)**
Very useful for part delivery lead times.

**Early January–early February**
Construct prototype (product projects) or prepare for implementation (process projects)
*Key milestone: Evaluation of prototype or process prior to testing and revision*

**Early February–mid April**
Test and revise prototype or process to meet project requirements
*Key milestones: Final presentation and evaluation of prototype or process;*
*Final Report document;*
*Project Poster for Engineering Expo*

**May (end of 2nd term)**
Capstone Project Presentation at UMD Engineering Expo

Please contact the College of Engineering to discuss your interest:

508.910.8539 • coe@umassd.edu

Download a Capstone Project Application Form @ www.umassd.edu/capstone

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Got a problem?
Our fresh view creates innovative solutions.

# Senior Capstone Project

## SPONSORSHIP OPPORTUNITIES

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