



Benefits to industry, community, and personal sponsors

MIME capstone project sponsorship is a **two-way relationship** that promises significant returns for your participation:

- With a relatively small investment of time and money, project sponsorship provides a solution to a design problem.
- It provides a “no-obligation” opportunity to work with and train potential future hires.
- It raises your organization’s visibility at OSU (and beyond) and leads to stronger working relationships with OSU MIME faculty.
- And most important, it’s an avenue through which you can help shape and influence our next generation of engineers—here in Oregon, throughout the Pacific NW, and around the world.



How does MIME Capstone Design help our students?

The MIME capstone design experience puts the **finishing touches** on our students’ preparation as engineering professionals. Students are responsible for all aspects of their project, including:

- Working with the project sponsor to fully define project requirements and design specifications
- Benchmarking to understand state-of-the-art in the project area
- Identifying multiple design solutions
- Specifying a complete paper design including, as appropriate, component sizing, sourcing, and budget
- Implementing and testing the design, and revising it to meet requirements
- Meeting project deadlines



Do you have an MIME capstone project in the making?

Product Project

- 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?
- Do you need help solving a problem with an existing mechanical/electro-mechanical device or process?
- Would you like to improve the efficiency or ergonomics of some of the machinery on your manufacturing floor?
- Might a custom spreadsheet or database application improve decision making or record keeping in your manufacturing or service operations?

Process Project

- Could the effectiveness, efficiency, or safety of any of your manufacturing or service processes be improved?
- Are your operations hampered by poor facilities layout?
- Could your workstations be improved through ergonomic analysis and re-engineering?
- Would you like to analyze, optimize, and clearly document work procedures to reduce process and product variability?

If you answered “Yes” to any of these questions, please contact the OSU MIME capstone project coordinator to discuss your ideas:

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School of Mechanical, Industrial & Manufacturing Engineering

MIME Capstone Project:



Sponsor Information & Guidelines

MIME Capstone Design is a 20-week course in which OSU mechanical, industrial, and manufacturing engineering seniors design and implement workable solutions to real-world engineering problems. The opportunity to synthesize and showcase their technical, communication, leadership, and teamwork skills readies MIME students for success as engineering professionals.

Our **Project Partners** contribute two key elements to the MIME capstone design experience:

- Real-world problems our students work to solve
- Mentorship that helps our students devise solutions that meet the sponsor’s needs

With this brochure, we invite you and your organization to consider sponsoring an MIME capstone design project.

We think you’ll agree that this is a valuable partnership opportunity—one you won’t want to miss!

Oregon State
UNIVERSITY

College of Engineering



What kinds of design problems do project teams take on?

The sky is pretty much the limit here! To illustrate, here's a partial listing of recent projects:

- A reconnaissance robot for the Salem, Ore., Police Department
- An operating-room recycling system for Good Samaritan Regional Medical Center in Corvallis, Ore.
- A heated incubator door for Sheldon Manufacturing, Inc.
- An order processing database for new product realization at MegaTech of Oregon, Corvallis, Ore.
- A kinetic sculpture vehicle for the First Alternative Cooperative Grocery in Corvallis, Ore.
- A device to move processing containers during manufacturing for Oregon Freeze Dry, Inc.
- A fruit tree pruning tool for the OSU Department of Horticulture
- An improved scratch-it ticket dispenser for the Oregon Lottery®



Key requirements for an MIME capstone project

1. The project must address a technical problem in the area(s) of mechanical, industrial, and/or manufacturing engineering.
2. Project completion must involve interaction with the project sponsor to:
 - Fully define design specifications
 - Consider multiple design alternatives
 - Implement, test, and revise the design
3. The project scope must be suitable for:
 - Development of a complete paper or conceptual solution in 10 weeks
 - Implementation, testing, and revision of that solution in the following 10 weeks



The fine print...

Proposal submission: Your MIME capstone project proposal should include a descriptive title, a brief summary of problem to be addressed, and a concise listing of project requirements and constraints (in technical and/or nontechnical terms as appropriate). Your proposal should also list the name and contact information for the individual who will be mentoring this project. The project mentor serves as the project team's technical consultant and point person, reviews project documentation, and participates in project evaluation. Over the course of the project, this individual typically makes several trips to OSU to meet with the student team and may also host the team for onsite visits.

Student interaction expectations: Project sponsor–student team interactions are extremely important and should occur regularly throughout the project. In addition, the project mentor's signature is required on all project requirements documents (see next page). These documents serve as contracts for what the project team must accomplish and specify the key criteria for project evaluation. It is therefore crucial that the project mentor reviews each of these documents carefully prior to signing them and provides feedback for necessary changes.

Equipment waiver: If you expect to loan equipment to the student team during the project, a loss and damage waiver will be needed. Please contact the MIME capstone project coordinator for more information (contact information on back of brochure).

Intellectual property (IP): By default, any IP created by the student team during the project belongs to the students. However, other arrangements are possible. Contact the capstone project coordinator for more information.

Please submit your project proposal to the capstone project coordinator (contact information on back of brochure). Project sponsors are expected to provide any necessary funding and/or materials for prototype construction and process implementation. We also request a **\$5000 sustaining donation** from all project sponsors; these donations support the MIME Capstone Design program. **Sustaining donation payment by August 1 of the project year guarantees project acceptance.**

MIME Capstone Design: Course timeline and student milestones

Late September–mid October:

- Form team and select project
- Meet with sponsoring organization and generate comprehensive project requirements list (**sponsor signature required**)
- Conduct background research and begin benchmarking to learn state-of-the-art in project area

Key milestone: Background Report document

Mid October–early November:

- Translate project requirements list into quantitative and testable specifications (**sponsor signature required**)
- 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 (**sponsor signature required**)
- 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 March (end of 2nd term):

- 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

OSU Engineering Expo (mid May): Publicly present project in College-wide capstone project showcase