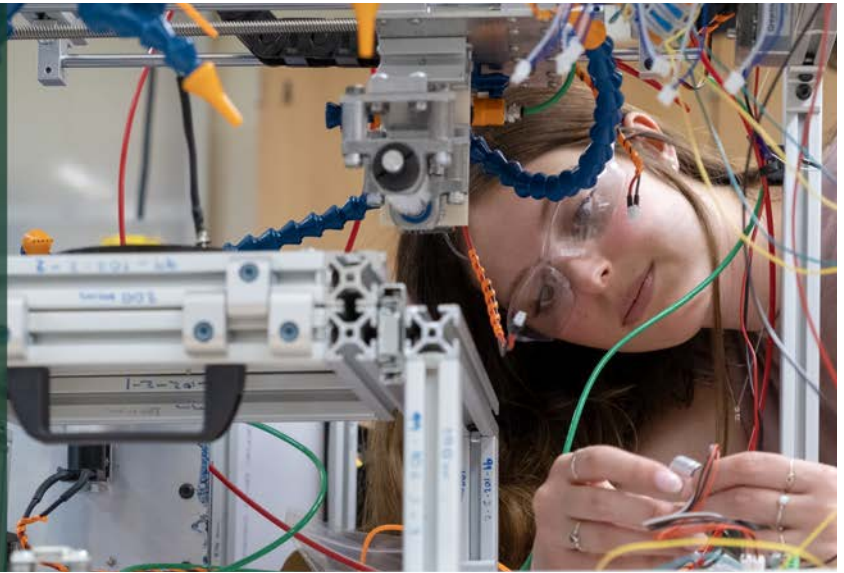


# SEED

Senior Experience in  
Engineering Design



## SEED Project Timeline

### FALL SEMESTER

- Establish team roles and framework
- Understand and revise the problem statement
- Search of existing patents, products, & literature
- Investigate the design space
- Select a preliminary design concept (or two)
- Create prototype iterations for evaluation
- Perform critical analyses for the design
- Create a list of engineering specifications
- Present a Preliminary Design Review

### SPRING SEMESTER

- Design, build and test project
- Perform a Failure Modes Effects Analysis
- Demonstrate their working project
- Create a poster and presentation
- Participate in Engineering Design Night
- Present a Final Design Review
- Create and deliver a Final Design Report, complete with Technical Documentation Package, and functioning prototype

## The Senior Capstone Experience

The College of Engineering and Mathematical Sciences (CEMS) educational journey for most of our students culminates in a senior capstone project where students work in teams to address complex and multidisciplinary problems provided to them by a sponsor.

Seniors in our **Mechanical** and **Electrical Engineering** programs will collaborate on projects in the **Senior Experience in Engineering Design (SEED)** capstone course series. Working in teams, the students address complex and multidisciplinary projects that originate as problem statements from companies, non-profits, faculty, or students. The outcome for each project is unique as students investigate the sponsor's needs and create an engineering design that solves the sponsor's unique challenge.

From a company's perspective, a SEED project offers the opportunity to work directly with senior engineering students, take a fresh look at a long-standing problem, or explore new ideas for their company. Students are eager to engage in engineering practice as preparation for work in industry and to apply the theory they have been learning in school. Course material related to design project fundamentals and the involvement of industry contacts add to the student's education and strengthen links between industry and Engineering at UVM.

In April, as the semester end nears, the College hosts our annual **Engineering Design Night** where the student teams present their projects and working prototypes to a full ballroom of sponsors, faculty, classmates and family.



College of Engineering  
and Mathematical Sciences

For more information:

[go.uvm.edu/cemscapstone](http://go.uvm.edu/cemscapstone)



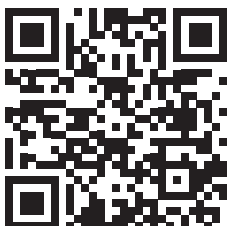
## Why participate in a SEED Project

- SEED projects offer the opportunity to work directly with seniors who are likely to be ideal candidates for entry-level engineering positions when they graduate.
- Sponsors have the opportunity to take a long-standing problem off the back burner for minimal cost.
- The company can look into a new idea or concept that may be too risky to use existing engineer resources to develop.
- Engineers often consider the mentoring role a welcome addition to their more typical duties.
- Companies can explore new ideas, concepts or products they don't currently have the skills or resources to design and build.
- Directly fund projects that otherwise would not move forward due to funding gaps or limited resources.
- An opportunity to donate to the engineering program and see tangible results via a demonstrable project over the course of an academic year.

If you are interested in sponsoring a SEED project, you can submit your project idea directly via our website. Scan the QR Code below to learn more about our senior capstone projects and to access the project submittal portal. If you have specific questions about the program or want to discuss a project idea prior to submittal, contact the SEED program director via [seed@uvm.edu](mailto:seed@uvm.edu).

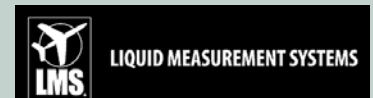
In addition to sponsoring projects, businesses can support the SEED program in other valuable ways:

- Students benefit greatly from hearing about real-world engineering design challenges and solutions from **guest speakers**.
- **Donated funds and/or equipment** can help give the students more resources to learn and implement the projects.



Please submit potential SEED projects as early as possible, to prepare for the Fall semester in late August. Projects will be reviewed and considered beginning in June, with priority given to early submissions. Additional details can be found by scanning the QR Code.

## Recent SEED Sponsors:



# What makes a good SEED project?

[go.uvm.edu/seedcapstone](http://go.uvm.edu/seedcapstone)



## Helpful Guidelines

- Frame the project as a problem to be solved, not how it will be solved.
- The benefits of solving the problem need to be clear and important to you.
- You understand and clearly communicate the specific functionality that you need.
- You articulate the quality of the functionality. So not just do X, but do X quickly or do X reliably, etc.
- You clearly communicate the high-level qualities of the solution. (i.e. low cost, easy to use, accurate, durable, etc.)
- The project has a physical component that students can build and test.
- The project allows for prototyping with successive full or partial iterations of the product.
- Solving all or most of the problem is achievable by a team of roughly 4 students working 8-12 hours per week for two 13-week semesters.
- The estimated cost of the project fits within the expected budget.
- Multidiscipline projects are preferred. We serve 75% ME and 25% EE students. All EE projects are hard to fit into the program. All ME projects can work.

## Timeline

### May, June, July

- Submit projects and discuss with the SEED Program Director:
  - » [go.uvm.edu/seedintake](https://go.uvm.edu/seedintake)
  - » [Keith.Epstein@uvm.edu](mailto:Keith.Epstein@uvm.edu)
- Revise and finalize project details
- Sign Letter of Understanding (LOU) and commit to budget and technical liaison responsibilities

### August

- Wrap up project details with SEED Program Director if needed
- Pitch project to students late August

### September through May

- Students choose projects in early September
- Liaison communicates with student team weekly as team works on project
- Preliminary Design Review in late November or early December
- Final Design Review in mid April
- Design night in late April
- Team delivers project to sponsor in early May



Sponsor Category	Sponsorship	Materials Budget	Total Due
Non-Profit / UVM-Affiliated	\$0	\$1,500	\$1,500
Student-Led	\$0	\$1,500	\$1,500
Startup Company ( <i>up to 10 employees</i> )	\$3,000	\$1,500 (included)	\$3,000
Team Sponsor ( <i>up to 100 employees</i> )	\$6,000	\$3,000 (included)	\$6,000
Program Sponsor ( <i>over 100 employees</i> )	\$12,000	\$6,000 (included)	\$10,000



**College of Engineering  
and Mathematical Sciences**

For more Information:  
[go.uvm.edu/seedcapstone](https://go.uvm.edu/seedcapstone)

Please scan the  
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more about the  
SEED Program:

