



Levels One and Two

Overview of Grants Program

The [Enhancing Engineering Education Grants Program](#) is designed to support innovative strategies for engaging and supporting all learners in Michigan Engineering undergraduate courses. This program springs from a collaboration between Mosaic, CAEN, and CRLT-Engin and draws upon the collective problem-solving strategies enacted in [Feedback Engine](#) (see below). Proposals will be invited across the range of innovations in engineering education, including instructional practices, course design and content, and instructional technology. There are two levels of funding: Level One (up to \$10K, rolling deadline) and Level Two (up to \$50K, deadline of 1/25/23).

Funding Criteria

Regardless of area of emphasis, proposals for Level One or Two should fulfill the following criteria:

- Reflect innovation in teaching methods or approaches
- Build upon evidence-based best practices for enhancing student learning
- Promote equitable instruction for all learners
- Implement practices or tools that will impact a large number of Michigan Engineering undergraduate students, with potential for broader application in the college and beyond
- Align with goals, strengths, and ongoing work of CAEN, CRLT-Engin, and/or the broader College

Eligibility

Grants are open to all instructional faculty and staff members in Michigan Engineering at the University of Michigan, Ann Arbor, with priority on proposals that impact undergraduate courses.

Consultation and Evaluation

All submissions will be evaluated by a group composed of CRLT-Engin, CAEN and Mosaic faculty and staff. Applicants are encouraged to work with a [CRLT-Engin consultant](#) when developing their proposal. Please contact e3grants.engin@umich.edu for assistance.

Reporting Requirements

All projects must be completed within one calendar year of receiving funding. All grant recipients will help disseminate their results by completing a brief web form within three months of the project's completion, to be publicly displayed on the CRLT-Engin website. If software or equipment is involved, recipients will provide demonstrations of the technology.

Level One Grants

Funding Amount

Grants of up to \$10,000 are available to individual or small groups of Michigan Engineering instructional faculty and staff members. A maximum of \$50,000 will be awarded in FY23.

Proposal Submissions

Applicants should prepare a **2-3 page max** proposal that includes the following items:

1. Project Statement: Clearly describe the proposed project, including an explanation of its value; identification of the specific innovation and its relation to evidence-based practices; an explanation of how the project supports equitable instruction and enhanced student learning; and a discussion of the project's potential for application in broader contexts. Optional: Applicants can visit [Feedback Engine](#) (see below) to address or build upon ideas on teaching and learning.
2. Project Evaluation Plan: Explain how the success of this project will be evaluated, documented, and disseminated. Approaches might include midterm course assessments, focus groups, and surveys, among others.
3. Budget Request: Provide a budget breakdown, which may include graduate or undergraduate student salaries; [instructional software](#) and [classroom technology](#) not currently available through CAEN or the University; materials and supplies; project evaluation expenses; and/or travel and registration fees for teaching-related conferences, seminars or workshops. (Funding cannot cover faculty salaries.)

Example Topics

- Implement a frequent low-stakes, mastery-based assessment strategy supported by digital tools (such as MiQuizMaker) in a high-enrollment course and measure the impact on student outcomes
- Transform a traditional lecture-based course or series of courses to an active learning and/or team-based structure to increase student access and engagement
- Develop and implement DEI-focused activities and assignments throughout a core technical course
- Redesign a capstone design course with enhanced industry and/or community engagement
- Explore digital accessibility guidelines and implement best practices to remediate an existing Canvas course
- Apply [learning analytics](#) tools to explore and remediate inequitable outcomes in a course
- Run pilots of new and innovative software in courses

Timeline

Submissions will be accepted on a rolling basis until all funding is used, with funding decisions made within one month of submission. Upon award, grant recipients are encouraged to schedule a consultation with CRLT-Engin to support progress.

Level 2 Grants

Funding Amount

Grants of up to \$50,000 are available to groups of CoE instructional faculty and staff members to support teaching and learning innovations that require a larger investment of time/resources and a larger collaboration for deployment. A maximum of \$150,000 will be awarded in FY23, including at least one grant that focuses on digital whiteboards.

Proposals submitted for Level Two funding should fulfill the **funding criteria** for all Level One Grants (stated above), but with three additional requirements:

- The proposal will require a **minimum of three** Michigan Engineering instructors who will collaborate on testing or piloting the proposed solution.
- Once funded, enactment of the Level Two project will require collaborative development with the grant sponsors (CRLT-Engin, CAEN, and Mosaic).
- Proposals should emerge from [Feedback Engine](#), a Michigan Engineering online voting platform where pressing needs and opportunities in teaching and learning are collectively prioritized. To promote collaboration in engineering education, grant sponsors will seek evidence of an idea's resonance with the broader Michigan Engineering community. Applicants should engage with [Feedback Engine](#) in at least one of three ways:
 - Develop a proposal that addresses a high-priority topic that has already surfaced in Feedback Engine. "High priority" is defined as one of the top vote-getters on the Feedback Engine voting board list. (See the high-priority call for proposals below on digital whiteboards.)
 - Post a challenge/need/concept on the Feedback Engine voting board, and see if others in the Michigan Engineering community vote for this priority.
 - Post a challenge/need/concept on the Feedback Engine voting board, and actively "sell" your idea to others and convince them to vote for this priority.

Proposal Submissions

Applicants should prepare a **5-page maximum** proposal that includes the following items:

1. Project Statement: Clearly describe the proposed project, including an explanation of its value; identification of the specific innovation and its relation to evidence-based practices; an explanation of how the project supports equitable instruction and enhanced student learning; and discussion of the project's potential for application in broader contexts.
2. Evidence of Community Prioritization: Briefly cite the number of votes or the nature/forms of feedback generated on the Feedback Engine platform, as well as any other evidence of your proposal's resonance with the Michigan Engineering community.

3. Team Roster: Provide a list of all team members, with descriptions of their respective roles and very brief bios. Beyond the three Michigan Engineering instructors required for testing and piloting, the team may also include additional instructors and/or staff members.
4. Project Evaluation Plan: Explain how the success of this project will be evaluated, documented, and disseminated. Approaches might include midterm course assessments, focus groups, and surveys, among others.
5. Budget Request: Provide a budget breakdown, which may include graduate or undergraduate student salaries; software not currently available through CAEN or the University; equipment purchases; materials and supplies; project evaluation expenses; and/or travel and registration fees for teaching-related conferences, seminars or workshops. Note: Funding may not be used to cover faculty salaries.

Example Topics

- Deploy collaborative display technology in a novel classroom (i.e., ThinkHub T1V) to deliver an integrated, interactive learning experience for classroom and remote students simultaneously
- Develop a novel digital tool to facilitate adaptive, [personalized learning](#) in multiple high-enrollment core engineering courses with the potential for application throughout the college and beyond
- Construct a modular system of shared digital lessons to promote the activation of prior knowledge and review of core concepts for use across a series of departmental courses
- Implement novel instructional technology to facilitate virtual or XR-enabled learning in a series of lab courses

Timeline

Proposals must be submitted by 12pm noon EST on January 25, 2023, with funding decisions made within one month of submission.

High-Priority Enhancing Engineering Education Grant (Level Two): Digital Whiteboards

Targeted topic

At least one Level Two grant of up to \$50,000 will focus on digital whiteboards, with part of the funding dedicated to the purchase of Think Hub T1V (or comparable) technology in support of the innovation. This initial call for proposals addresses a high-priority topic that surfaced through Feedback Engine, attracting a substantial number of votes from the Michigan Engineering community in the first few months after the platform's launch. Applicants should adhere to all of the requirements for Level Two funding, with the understanding that engagement with the Feedback Engine platform has already occurred.

Examples

How could you use interactive whiteboards in your engineering classroom? Perhaps you'd like to facilitate a dynamic ideation session with students or enable them to spontaneously share content from their devices for collaborative design activities. You may need to project multiple images on distinct screens simultaneously to help your students grasp complex concepts. Maybe you'd like to implement some of the best practices you discovered through virtual teaching in the in-person classroom.

Timeline

As with all Level Two applications, proposals must be submitted by 12 noon EST on January 25, 2023, with funding decisions made within one month of submission.