



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Cristina Amon, Dean

MEMORANDUM

2014/15-02

To: All faculty

cc: Chairs and Directors

From: Cristina Amon, Dean

Date: November 20, 2014

Re: **Engineering Instructional Innovation Program: Call for Proposals**

I am pleased to announce a call for proposals for our Engineering Instructional Innovation Program, now in its third year.

Summary

The Faculty of Applied Science and Engineering requests proposals for the Dean's Strategic Fund for the Engineering Instructional Innovation Program. The focus of this program is the creation or substantial renovation of a specific *undergraduate* course, closely related group of courses, or learning experience. Projects must:

- Be endorsed by the department chair, division chair or institute director
- Involve several faculty members working collaboratively including at least one faculty member with a continuing appointment
- Be completed in 1 to 3 years and have a clear timeline
- Include measurable results and a plan for collecting data on outcomes
- Include a plan for the training and development of the instructors involved

Preference will be given to projects that have the potential for significant and sustainable improvement in student engagement and learning outcomes. Funding available for a project will be up to \$50K/year. Matching funds from the department/institute are welcome. These funds can be used to develop resources, acquire additional assistance (e.g. additional TA support or educational expertise), offset a reduced teaching responsibility if it is warranted, do limited re-modeling of space, and acquire training, equipment and supplies. Submissions that create or build on online, blended, and inverted teaching models are encouraged. A letter of intent must be submitted by December 15, 2014.

Targets

Key targets for this program include undergraduate courses or sets of courses in the Faculty that:

- Have large enrolment numbers
- Have learning experiences that are multi- or cross-disciplinary within Engineering or across Faculties
- Are regarded as challenging for students, in terms of engagement or learning, or challenging for instructors to teach
- Serve as prerequisites for subsequent courses
- Create or build on online teaching resources or online, blended, or inverted classroom models

Proposed projects need not hit all of these targets, but hitting more than one will strengthen the proposal.

Background

The Faculty of Applied Science and Engineering at the University of Toronto has a wide range of academic programs that are highly diverse in terms of size, scope, and approach to curriculum. The population of students we serve is academically strong and highly motivated. There is also a growing set of instructional innovation resources, supported through the Centre for Teaching Support and Innovation (CTSI), available to people who are interested in developing more effective learning experiences for their students. This environment provides a tremendous opportunity to implement instructional innovation and rethink traditional teaching approaches.

Technology, and research on teaching and learning, have substantially reshaped the landscape in higher education and provide opportunities for innovation. We are committed to providing a high quality undergraduate learning experience, while at the same time we are under increasing pressure from many sources: financial pressure; pressure to maintain quality and remain competitive; pressure to meet accreditation criteria; and pressure to meet the learning needs of our students without overloading them. Our goal is to create a vibrant, relevant, and effective learning experience for our students that prepares them to be leaders in their field and gives them the opportunity to explore the full breadth of their university experience both in and outside the classroom. To this end, we have implemented a number of notable innovations in the curriculum including the first year design courses, innovative global engineering courses, and the interdisciplinary capstone initiative. Our lecturers and professors have also been recognized for advances in online courses; and we are experimenting with inverted classrooms, and other types of technology-enabled teaching and technology-enhanced active learning. This is just a sampling of the innovations that have been occurring already in our Faculty.

Our goal is to build on this experience and drive by making strategic investments that will lead to better pedagogy in selected courses, and improvements in the learning experience for our students. Successful project proposals should include the redesign of a course or closely related

group of courses; assessment of student learning outcomes; and instructor training and development to enable and sustain the project.

Funded initiatives will involve multiple faculty members, and should produce changes that can be sustained for a decade or more. In addition, they will be characterized by the commitment of the project leaders to engage in the change process, and disseminate their results. The program will provide financial support, assistance on designing a well-grounded assessment process for the project, as well as opportunities for collaboration during the life of the proposed projects.

Timeline for the application:

1. A short **letter of intent** is due on December 15, 2014
2. **Workshop** delivered by the Vice Dean, Undergraduate's Office on preparing a proposal will be held in January 2015
3. The **selection committee** will **meet** with the **project team** and this meeting will include a short presentation of the project
4. Selected projects will be asked to provide a **full proposal** including a budget and project plan by February 27, 2015
5. The **project activities** will include working with educational developers (through CTSI) to assess the impact of the innovation. The teams will also meet monthly as a group with the Vice-Dean Undergraduate to discuss progress and get advice from the group.

1. **Letter of intent:** The letter of intent must concisely explain the context and vision for the project. It should describe the project leaders and the commitment they are willing to make to the project. A successful project should involve two or more faculty, at least one of whom holds a continuing appointment (i.e. lecturer, tenured or tenure-track). The letter should also include a preliminary estimate of the time and required funding for the project. A short statement on the intended outcomes should be included such that the committee can judge the depth and scope of the potential impact. The letter of intent must be accompanied by a letter of endorsement from the department/institute chair(s)/director(s) involved. This letter must acknowledge any teaching reduction if this is part of the project plan.
2. **Workshop:** Program applicants are strongly encouraged to attend the workshop in January. The workshop will introduce project leaders to resources for developing proposals that are based on a well-grounded approach to course design and instructional methods. Further, the workshop will assist project leaders in developing a sound methodology for assessing the results of the project. Participants will be introduced to resources available across the Faculty and UofT (in particular, programs available through CTSI) that can assist and support their project planning and implementation.
3. **Meeting with the selection committee:** Project leaders will be scheduled to meet with the selection committee and briefly present their proposal. This will allow project leaders to explain their proposal and the selection committee to ask clarifying questions.
 - a. **First round selection:** A group of project proposals will be selected to move forward to the full proposal stage. Projects will be selected based on quality of the project; the potential for impact on student engagement, experience and learning;

the quality of the collaboration and commitment of the team; and the quality of the methodology proposed.

4. **Full proposal:**

- A full proposal must include a clear timeline and budget for the project. In particular, the activities in the first year of the project and milestones should be clearly defined. The budget can include support for teaching assistants or other staff; technology or resource development; equipment; and some limited remodeling. The proposal can also include a course teaching reduction (with funding to support this) if it is warranted for the project and acknowledged in the chair/director's endorsement letter.
- The proposal should include a plan for professional development (i.e. training) resources that the project leaders will draw upon to develop their own capability and any training for other staff (e.g. TA training). This plan could include collaboration with CTSI through their Course Design Institute, workshops on pedagogy, programs in support of the Scholarship of Teaching and Learning (SoTL) research, etc. The CTSI programs and other resources available for training and professional development will be introduced to the applicants at the January workshop.
- The proposal should explain the sustainability of the project beyond the funded period. Selection will be based on the quality of the project and the potential impact on student engagement, learning and experience.

5. **Work** on the project can begin immediately following the decision announcement. Decisions are expected to be announced in March-April 2015.

6. **Project activities:** As part of the project activities, project leaders are expected to work with educational developers and other experts (e.g. instructional technology specialists) during the course of the project to measure the impact of the innovation being implemented. This could include a before and after assessment, a cross-over study, or other types of metrics in a way that the impact of the change is benchmarked against existing teaching practices. The project teams are also expected to meet monthly as a group with the Vice-Dean Undergraduate to discuss the projects. This building of a community of practice is another objective for this program.

Contact and Questions

Questions about the proposal process should be addressed to Vice-Dean, Undergraduate, Susan McCahan at vicedean@ecf.utoronto.ca and Chair, First-Year, Micah Stickel at cfy@ecf.utoronto.ca.