The Multidisciplinary Capstone Design Course is a win-win opportunity for your organization and for UofT Engineering students: You benefit by gaining a fresh design perspective; UofT Engineering students benefit by applying their newly acquired engineering skills to meet your business needs.

Course Coordinator
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FOR MORE INFORMATION
Visit our website http://imdi.mie.utoronto.ca/ or email us mcp@mie.utoronto.ca

PARTICIPATING DEPARTMENTS

REQUIRED RESOURCES FOR PROJECTS

Student Resources
Each project team consists of 3-5 students, each working approximately 10 hours per week for about 26 weeks.

Client Resources
The client is expected to spend about 1-2 hours per week to support the project from September to March. This support includes timely access to any data essential for completing the project. The specific details and scope of the project are discussed in an initial meeting in September with the student team, faculty supervisor, and appropriate subject matter experts.

How to Participate
- Request a Statement of Need (SON) form by sending an email to: mcp@mie.utoronto.ca.
- The SON defines the general nature of the problem to be solved;
- Briefly explains the main idea or problem in one or two paragraphs;
- An organization may submit multiple SONs;
- Clients can request a Non-Disclosure Agreement to be signed by the students and supervisor; and
- Completed SONs should be submitted to mcp@mie.utoronto.ca between February to mid-April.

Accepting SON
Acceptance notifications will be issued within 5 business days after your submission.
WHY SHOULD YOU AND YOUR ORGANIZATION PARTICIPATE?

There are many reasons why your organization should participate in the UoT Engineering’s Multidisciplinary Capstone Design course:

- Introduce innovative concepts and improvement into your organization;
- Obtain solutions to key design issues;
- Address problems requiring infusion of talented resources from multiple disciplines;
- Leverage technical and theoretical multidisciplinary knowledge;
- Identify potential employees for your organization;
- Gain access to expertise of UoT Engineering faculty members; and
- Build longer-term relationship with UoT Faculty of Engineering.

DISCIPLINARY KNOWLEDGE & SKILLS

Subject areas appropriate for Multidisciplinary Capstone Projects include (but are not limited to):

- Algorithm Design
- Biomaterials
- Circuit Design
- Control Systems
- Energy
- Environment
- Finite Element Analysis
- Fluid Mechanics/Heat Transfer
- Human Factors
- Information Engineering
- Intelligent Systems
- Manufacturing Processes
- Materials
- Mechatronics
- Operations Research
- Process Design
- Programming
- Risk Assessment
- Solid Modeling
- Structural Design
- Transportation Design

SELECTION CRITERIA FOR PROJECTS

High Value of the Project to the Partner Organization

The project should have the potential for real, positive impact on the organization or its clients. Multidisciplinary projects often address an engineering design problem or challenge that the organization needs resolved, but may not have the resources or knowledge to complete on their own.

Appropriate Level of Risk to the Partner Organization

The project should not unduly expose the organization or its clients to downside risk should there be any delays or failure to deliver on the part of the students.

High Relevance of Project to Students

In order to provide each student with the opportunity to apply their disciplinary skills and knowledge, UoT Multidisciplinary Capstone Design course seeks projects that span at least two engineering disciplines.

WHAT IS MULTIDISCIPLINARY CAPSTONE DESIGN COURSE?

Overview

UoT Engineering’s Multidisciplinary Capstone Design course provides an experience in multidisciplinary engineering practice based around a significant design project. Students work through a creative, iterative, and open-ended design process to meet specified Client needs. Team members from different engineering disciplines collaborate to design solutions that address the complexity of contemporary engineering design challenges.

Course Description

The Multidisciplinary Capstone Design course is a unique, full academic year capstone design course offered by the University of Toronto’s Faculty of Applied Science & Engineering. All projects are sourced from an industry Client for whom the project represents a real business need. All projects are also explicitly multidisciplinary in nature – successfully completing the project requires that students integrate skills and knowledge from across multiple engineering disciplines.

The Multidisciplinary Capstone Design course is designed for exceptional fourth-year engineering students who are looking for a unique, challenging capstone design experience. Students in the Multidisciplinary Capstone Design course:

- Apply knowledge, skills and processes from several disciplines to conduct engineering analysis and practice engineering design;
- Demonstrate engineering judgment as they integrate economic, health, safety, environmental, social, and other pertinent interdisciplinary factors;
- Incorporate teamwork, project management, and direct stakeholder and Client interaction; and
- Prove the feasibility of their design concepts through simulation and prototyping.

In collaboration with Defence Research and Development Canada (DRDC), a multidisciplinary team of four students were given access to ten years of army research and developed a mobile app enabling soldiers to prevent jetlag. After successfully completing their 4th year multidisciplinary capstone design project in 2014, Hanna Janossy, an Industrial Engineering Graduate, and her colleague, Dr. Ryan Love, founded a start-up company called Syncadian Inc., which is based in Toronto at the MaRS Innovation Centre.