ENGINEERING BY DESIGN

We’re training our students to deliver the future of engineering design.

The University of Toronto Institute for Multidisciplinary Design and Innovation (UT-IMDI) provides U of T Engineering undergraduate and graduate students with real-life training opportunities by involving them in practical, industry-based projects. The Institute serves as a vehicle to promote awareness of design and development challenges facing industry, with an emphasis on its multidisciplinary nature, and evolving technology.

UT-IMDI was established in Faculty of Applied Science & Engineering and is housed in the Department of Mechanical & Industrial Engineering (MIE). The institute is a result of the NSERC Chair in Multidisciplinary Engineering Design program of which Professor Kamran Behdinan (MIE) is chair holder, and the institute’s inaugural director.

October 30, 2012 marked the official launch of the institute, in collaboration with its first industry partners, Bombardier Aerospace, Pratt & Whitney Canada, and UTC Aerospace Systems. The Institute hosts an annual recognition event for its students and partners and recently established a Recognition Award to acknowledge the support the institute receives from an industry partner.

Through networking opportunities facilitated by the institute, students will also develop their personal network within industry, better positioning them for their future careers.
The University of Toronto Institute for Multidisciplinary Design & Innovation (UT-IMDI) provides a unique Project Based Learning (PBL) environment in partnership with industry. U of T Engineering students are given the opportunity to work on industry design and development projects and gain valuable hands-on experience beyond the curriculum.

“Our projects are determined collaboratively, based on the needs of industry today, and building on the strengths of U of T Engineering. Undergraduates can apply during their second year of study. Accepted students then have the opportunity to work on an industry-based engineering project, reporting to a senior engineer within a company. The exposure gained, even within the short duration of the summer months, allows our engineering students to interact on a professional level, and to meet real-world project deadlines. This practice is good for their career – whether they choose to work in industry or go on to a graduate program – we cannot practice engineering without knowing what the future directions of the sector are.”

Professor Kamran Behdinan
NSERC Chair in Multidisciplinary Engineering Design
Director UT-IMDI

OUR PARTNERS

- Bombardier Aerospace
- Honeywell Aerospace
- Messier-Bugatti-Dowty
- SPP Canada Aircraft Inc.
- Ford Canada
- Litens Automotive Group
- Pratt & Whitney Canada
- UTC Aerospace
- General Motors Canada
- Magna International
- Safran Electronics Canada
- Van Rob Kirchhoff Automotive
- Holt Renfrew
- Magellan Aerospace
- SKF Canada Limited

www.imdi.mie.utoronto.ca

STATISTICAL ANALYSIS OF COMPRESSOR ROTOR LCF DATA
Student: Krystle Pang
Supervisors: Dinesh Chawla and Farid Abrari
Industry Partner: Pratt & Whitney Canada

POWER AND THERMAL MANAGEMENT CONTROLLER CHASSIS
Student: Mohammad Ansour Rahman
Supervisors: Mark Phillips and Rauf Jangirov
Industry Partner: Honeywell Aerospace

RAPID APPLICATION DEVELOPMENT AT HOLT RENFREW
Student: Pauliette Hofham
Supervisors: Jared Frederici
Industry Partner: Holt Renfrew (The Poirier Group)

CUTTING TOOL DATA MANAGEMENT
Student: Amirali Alavi
Supervisors: Dave Gueth
Industry Partner: Magellan Aerospace

NEXT GENERATION LOCKING ACTUATOR DESIGN
Student: Kathryn Rikhuska
Supervisors: Gary Ataman
Industry Partner: Safran Messier-Bugatti-Dowty

GOOD AIRCRAFT MANAGEMENT DATABASE AND TOOL DEVELOPMENT
Student: Abdul Haseeb
Supervisors: Ellick Wu, Andrew Bajovic, and Hassen Mutahar
Industry Partner: Bombardier

The following is a selection of projects by UT-IMDI students. These projects help engineering students understand the multidisciplinary nature of design and learn new technologies and innovations. Working closely with industry partners, students are provided with a practical perspective, essential to engineering practice.

PARTNER WITH IMDI

The institute calls for working relationships between the University and industry partners from various sectors to collaborate on projects based on real industry design and development needs. Students are jointly supervised by U of T engineering faculty, graduate student mentors, and senior technical staff within the company. Engineering students will be considered for available positions and assigned to projects through a competitive recruitment process. Students will be given specific training appropriate to their projects and are required to provide progress updates on a regular basis, submit a final report, and give an oral presentation about their work.

The UT-IMDI Advisory Board, consisting of the founding director of the institute, and NSERC Chair in Multidisciplinary Engineering and Design, Professor Kamran Behdinan; Chair of the Mechanical & Industrial Engineering Department, Professor Jean Zu; and industry representatives, meet a minimum of bi-annually to review the institute’s activities, and progress.