# COURSE AND OPTIONS SELCTION HANDBOOK MECHARING BINGENERING ATH YEAR

Mechanical & Industrial Engineering

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### WHAT IS COURSE AND OPTIONS SELECTION (COS)?

Each year the Office of the Registrar asks you to provide them with indicators as to which program option and technical elective courses you plan to take in the coming academic year. The information that you provide to us through Course and Options Selection (COS) helps us identify the demand for program options and courses. This information is used for the course scheduling process and for uploading your course selections to ACORN. When selecting your technical electives, be sure that your selections meet the program requirements for your program of study. Please be advised that students who do not participate in COS will not be guaranteed a space in technical elective courses, so it is in your best interest to submit your selections.

We greatly appreciate your cooperation with this exercise.

It can be completed on <u>Degree Explorer</u>

#### ALL INFORMATION IN THIS HANDBOOK WAS MOST RECENTLY UPDATED IN JUNE 2022. COURSES, DEGREE REQUIREMENTS, AND DATES MAY CHANGE FROM YEAR TO YEAR. PLEASE REFER TO THE CURRENT YEAR'S ENGINEERING ACADEMIC CALENDAR.

#### **IMPORTANT DATES**

DATE	
EARLY	3RD YEAR MEC CURRICULUM TALK
FEBRUARY	
<b>MID FEBRUARY</b>	COURSE & OPTIONS SELECTION OPENS
– EARLY	Degreeexplorer.utoronto.ca
MARCH	Students may now login and make their curriculum selections for the
	upcoming academic year
MID	COURSE SELECTION (ROUND 1) OPENS *ACORN*
JULY	Students may now make changes to their timetable. Electives offered
	by the Faculty of Engineering and Enhanced Enrollment Arts & Science
	electives are now open for enrollment
MID AUGUST	COURSE SELECTION (ROUND 2) OPENS *ACORN*
	For courses offered by the Faculty of Arts & Science
LATE AUGUST	LAST DAY TO PAY OR DEFER TUITION FEES
ΕΛΟΙΥ	ENGINEEDING EALL (E) LECTUDES REGIN
	ENGINEERING FALL (F) LECTORES BEGIN
SEPTEMBER	
SEPTEMBER LATE	FALL (F) & FULL-YEAR (Y) COURSE ADD DEADLINE
SEPTEMBER LATE SEPTEMBER	FALL (F) & FULL-YEAR (Y) COURSE ADD DEADLINE   Last day to add or substitute Fall (F) or Full-Year (Y) Session courses
SEPTEMBER LATE SEPTEMBER EARLY	FALL (F) & FULL-YEAR (Y) COURSE ADD DEADLINE   Last day to add or substitute Fall (F) or Full-Year (Y) Session courses   FALL (F) COURSE DROP DEADLINE
SEPTEMBER LATE SEPTEMBER EARLY NOVEMBER	FALL (F) & FULL-YEAR (Y) COURSE ADD DEADLINE   Last day to add or substitute Fall (F) or Full-Year (Y) Session courses   FALL (F) COURSE DROP DEADLINE   Last day to drop Fall (F) Session courses without academic penalty,
SEPTEMBER LATE SEPTEMBER EARLY NOVEMBER	FALL (F) & FULL-YEAR (Y) COURSE ADD DEADLINE   Last day to add or substitute Fall (F) or Full-Year (Y) Session courses   FALL (F) COURSE DROP DEADLINE   Last day to drop Fall (F) Session courses without academic penalty, withdraw from the Fall (F) session without academic penalty, or
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EARLY JANUARY	FALL (F) & FULL-YEAR (Y) COURSE ADD DEADLINE   Last day to add or substitute Fall (F) or Full-Year (Y) Session courses   FALL (F) COURSE DROP DEADLINE   Last day to drop Fall (F) Session courses without academic penalty,   withdraw from the Fall (F) session without academic penalty, or   transfer to part-time studies for the Fall (F) session   ENGINEERING WINTER (S) LECTURES BEGIN
EARLY SEARLY EARLY NOVEMBER EARLY JANUARY MID JANUARY	FALL (F) & FULL-YEAR (Y) COURSE ADD DEADLINE   Last day to add or substitute Fall (F) or Full-Year (Y) Session courses   FALL (F) COURSE DROP DEADLINE   Last day to drop Fall (F) Session courses without academic penalty, withdraw from the Fall (F) session without academic penalty, or transfer to part-time studies for the Fall (F) session   ENGINEERING WINTER (S) LECTURES BEGIN   WINTER (S) COURSE ADD DEADLINE
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EARLY SEPTEMBER EARLY NOVEMBER EARLY JANUARY MID JANUARY EARLY MARCH	FALL (F) & FULL-YEAR (Y) COURSE ADD DEADLINE   Last day to add or substitute Fall (F) or Full-Year (Y) Session courses   FALL (F) COURSE DROP DEADLINE   Last day to drop Fall (F) Session courses without academic penalty, withdraw from the Fall (F) session without academic penalty, or transfer to part-time studies for the Fall (F) session   ENGINEERING WINTER (S) LECTURES BEGIN   WINTER (S) COURSE ADD DEADLINE   Last day to add or substitute Fall (S)   WINTER (S) & FULL YEAR (Y) COURSE DROP DEADLINE

For a complete list of the Sessional Dates click <u>here</u> For Fee and Refund Schedule information click<u>here</u>

#### FALL SESSION - YEAR 3

REQUIRED CORE COURSES	
MIE301H1	Kinematics and Dynamics of Machines
MIE312H1	Fluid Mechanics
MIE342H1	Circuits with Applications to Mechanical
	Systems
MIE258H1	Engineering Economics and Accounting
NATURAL SCIENCE ELECTIVE (CHOOSE ONE):	
CHE353H1	Engineering Biology
CIV220H1	Urban Engineering Ecology
CIV300H1	Terrestrial Energy Systems

#### For further information, visit the Engineering Academic Calendar

**CAN I TAKE A NATURAL SCIENCE ELECTIVE OTHER THAN THOSE ON THIS LIST?** Yes. The extended list of approved natural science electives is available <u>here</u>

**CAN I TAKE MY NATURAL SCIENCE ELECTIVE IN THE WINTER OR SUMMER TERM?** If the natural science elective you are interested in taking is only offered in the winter semester, you must first obtain formal approval from the MIE Undergraduate Office to overload. Many natural science electives on the extended list are also available in the summer.

**CAN I CHANGE MY STREAMS IN FOURTH YEAR?** No. In order to graduate, you must take a course following each of your stream selections in 3W. If you find another 4F stream course interesting, you may take it in place of a technical elective in addition to your two continued stream courses.

#### FALL SESSION - YEAR 4

REQUIRED CORE COURSES	
MIE491Y1	Capstone Design
STREAM OPTIONS (CHOOSE TWO):	
Manufacturing	
MIE422H1	Automated Manufacturing
Mechatronics	
MIE404H1	Control Systems I
Solid Mechanics and Design	
MIE442H1	Machine Design
Energy and Environment	
MIE515H1	Alternative Energy Systems
Bioengineering <i>(choose one)</i>	
MIE439H1	Cellular and Tissue Biomechanics
MIE458H1	Biofluid Mechanics
TECHNICAL ELECTIVES (CHOOSE ONE):	
Ref Academic calendar for approved list*	
COMPLEMENTARY STUDIES OR HUMANITIES AND SOCIAL SCIENCES ELECTIVE	
CS/HSS Elective**	

**WHAT IS A CS ELECTIVE?** Complementary Studies (CS) can be broadly defined as studies in humanities, social sciences, arts, management, engineering economics and communication that complements technical curriculum. Engineering, math or science courses—including astronomy and psychology—may not be used to fulfill your CS elective requirement. Additionally, the Rotman School of Management does not typically permit students outside of their faculty to take their courses (i.e. RSM courses).

**WHAT IS AN HSS ELECTIVE?** Humanities and Social Sciences (HSS) courses explore the central issues, thought processes and scholarly methods found in these disciplines. Please note HSS electives are a subset of Complementary Studies (CS) courses; they can be used to satisfy CS elective requirements.

\*\*Students must complete 4 CS/HSS electives, including 2 mandatory HSS electives. Every HSS is considered a CS, but not every CS is considered an HSS.

#### For further information visit the Engineering Academic Calendar

**CAN I CHANGE MY STREAMS IN FOURTH YEAR?** No. In order to graduate, you must take a course following each of your stream selections in 3W. If you find another 4F stream course interesting, you may take it in place of a technical elective in addition to your two continued stream courses.

**\*WHAT IS A (\*) COURSE?** Courses designated with an (\*) are courses that have a strong emphasis on design. MIE students are to take one (\*) designated course in their fourth year, either in the fall or winter semester.

#### WINTER SESSION – YEAR 4

REQUIRED CORE COURSES	
MIE491Y1	Capstone Design
TECHNICAL ELECTIVES (CHOOSE THREE):	
Ref Academic calendar for approved list	
COMPLEMENTARY STUDIES OR HUMANITIES AND SOCIAL SCIENCES ELECTIVE	
CS/HSS Elective	
For further information visit the <u>Engineering Academic Calendar</u>	

#### MIE491Y1/APS490: CAPSTONE DESIGN



The capstone design course provides an experience in engineering practice through a significant design project. Student teams meet specific client needs through a creative, interactive, and open-ended design process. Throughout the fourth year of your program, you will work with a faculty Supervisor and an industry Client on a Capstone Design Project. The Capstone Design Project provides you with an opportunity to work on a problem of real value to your Client. You will work with them and your Supervisor to define your project goals (within the scope of the problem identified), to decide how you will go about achieving these goals and to organize yourself to achieve them.

All capstone projects fall into one of the following categories:

**STANDARD CAPSTONE PROJECT:** These projects are sourced by Capstone Coordinators and each project is supervised by a single MIE Faculty member. Students are matched with projects in early September.

**STUDENT-SOURCED CAPSTONE PROJECT:** These projects are sourced by students through PEY, ESIP employer or other industry contacts. Students must form a team and find a single MIE faculty member to supervise their project. Students interested in this type of project must submit for approval by mid-June.

**CAPSTONE INNOVATION PROJECTS:** The projects are sourced by University or MIE faculty members. These projects entail the design of new and patentable technologies, and come along with high risk, high visibility, and high impact potential. Students are supervised by a single MIE faculty member. \***Competitive Selection** 

**MULTIDISCIPLINARY PROJECTS (APS490Y):** These projects are sourced by capstone coordinators across the Faculty of Applied Science and the Multidisciplinary Capstone course coordinator. These projects require team members from at least two disciplines and are supervised by a single engineering faculty member. \*These projects have an accelerated self-selection and matching process, and require a competitive interview.

**INTERNATIONAL CAPSTONE PROJECTS:** These projects are sourced by the International Capstone coordinator. In these projects, students work with University partners from China, Hong Kong and USA. **\*Competitive Interview Required** 

#### **PROJECT SELECTION**

For those interested in the **Multidisciplinary** or **International** Capstone Projects, you must submit your name by **Late February**.

For those interested in the **Student-sourced** projects, you must submit your project for review by **Mid June**.

For those interested in **Standard Capstone Projects** or **Capstone Innovation Projects**, you will be contacted mid-August to initiate the matching process.

#### MIE498H1/Y1: RESEARCH THESIS

The purpose of MIE498 is two-fold: to let students pursue a technical project of interest, and to improve their communication skills. It is particularly useful for students thinking about graduate school and who want to learn more about engineering research. Preparing a Progress Report and a Thesis gives students experience in technical writing, and making oral presentations about their projects helps students improve their oral communication skills. MIE498 is an important course in the curriculum because an engineering graduate should be able to

present to prospective employers proficiently

Formal approval to register for the fourth-year thesis must be obtained from the Undergraduate Office. Enrolment in our thesis course is restricted to students with an overall CGPA of at least 2.7 This criterion can be relaxed under exceptional circumstances with the written approval of the supervisor.

At the beginning of the term, students will establish with the supervisor, in writing, which reports are to be submitted, the content of these reports, their due dates, and the grading scheme. The Thesis Topic Form, however, must be submitted to the undergraduate office by one week before the course add date and is not negotiable. Notice that your supervisor may choose to follow these guidelines, but modifications may be desirable to best fit the nature of the thesis.

In the event your thesis project is not approved, as part of COS and on course selection day, please select a back-up approved curriculum technical elective. By submitting your thesis form on time, you will receive a decision before the course add deadline.

Enrolment Procedure: Please review the guidelines here

#### MANUFACTURING

Manufacturing Engineers do anything from tooling and machine design, to supply chain and operations management. It is common for manufacturing engineers to move around frequently between divisions of a company, overseeing many of their different processes. It is a truly international field, with demand around the world. Within Canada, average earnings of all employees in manufacturing are 22% higher than average earnings across all economic occupations in Canada.

#### **STREAM COURSE**

#### 4F - MIE422H1S - AUTOMATED MANUFACTURING

Introduction to Computer Integrated Manufacturing. Definitions, terminology. Organization of manufacturing systems. Introduction to NC machines. Introduction to robotics. Types of robot motion. Robot kinematics. Jacobians, singularities. Robot motion trajectories. Interpolation, spline fits. Robot joint control. Flexible manufacturing systems, justification. Robot cell design. Group technology. Design of group technology cell. Programmable logic controllers.

MIE440H1	Design of Innovative Products
MSE401H1	Materials Selection in Design II
FOR424H1	Innovation and Manufacturing of Sustainable
	Materials
MIE469H1	Reliability and Maintainability Engineering
MIE506H1	MEMS Design and Microfabrication
MIE519H1	Advanced Manufacturing Technologies
MSE443H1	Polymers and Composite Engineering
FIELDS OF APPLICATION	

#### SUGGESTED TECHNICAL ELECTIVES (4<sup>TH</sup> YEAR ONLY)

Automation, Manufacturing Management, Fundamental Technology, Process Design, Machine Programming

#### LINKS

Canadian Society of Manufacturing Engineers <u>www.sme.org/smecanada</u>

#### **MECHATRONICS**

Mechatronics engineers are on the forefront of innovation in robotics, medicine, manufacturing, transportation and much more. They often go though the entire design process, from defining the problem, coming up with solutions, to designing and building prototypes, and making production and maintenance plans. Knowledge of both electronics and mechanical principles are used to create innovative solutions to design problems. Automated manufacturing, drones, and driverless cars are examples of rapidly-growing fields that are leading to an increased demand for mechanical engineers.

#### **STREAM COURSE**

#### 4F - MIE404H1S - CONTROL SYSTEMS I

Analysis of stability, transient and steady state characteristics of dynamic systems. Characteristics of linear feedback systems. Design of control laws using the root locus method, frequency response methods and state space methods. Digital control systems. Application examples.

AER307H1	Aerodynamics
AER525H1	Robotics
MIE444H1	Mechatronics Principles
MIE438H1	Microprocessors and Embedded
	Microcontrollers
MIE443H1	Mechatronics Systems: Design and Integration
MIE505H1	Micro/Nano Robotics
MIE506H1	MEMS Design and Microfabrication
FIELDS OF APPLICATION	

#### SUGGESTED TECHNICAL ELECTIVES (4<sup>TH</sup> YEAR ONLY)

### Robotics, Sensing and Control Systems, Medical imaging, Computer aided and integrated manufacturing systems, Microcontrollers/PLCs, Mobile Apps

#### LINKS

Institute for Robotics and Mechatronics irm.utoronto.ca

#### **SOLID MECHANICS & DESIGN**

Applications of solid mechanics are common in: the design of virtually every product; creating manufacturing processes and equipment; biomechanics as related to medicine and dentistry; many fields of graduate research. Solids mechanics engineers can really work in a mechanical field, because of their knowledge of the properties of physical objects.

#### **STREAM COURSE**

#### 4F - MIE442H1F - MACHINE DESIGN

Introduction to the fundamental elements of mechanical design including the selection of engineering materials, load determination and failure analysis under static, impact, vibration and cyclic loads. Surface failure and fatigue under contact loads, lubrication and wear. Consideration is given to the characteristics and selection of machine elements such as bearings, shafts, power screws and couplings.

MIE440H1	Design of Innovative Products
MSE401H1	Materials Selection in Design II
MIE402H1	Vibrations
MIE408H1	Thermal and Machine Design of Nuclear Power
	Reactors
MIE550H1	Advanced Momentum, Heat and Mass Transfer
CHE475H1	<b>Biocomposites: Mechanics and Bioinspiration</b>
MIE439H1	Biomechanics I
MIE441H1	Design Optimization
MIE469H1	Reliability and Maintainability Engineering
MIE506H1	MEMS Design and Microfabrication
MIE540H1	Product Design
MSE442H1	Surgical and Dental Implant Design

#### SUGGESTED TECHNICAL ELECTIVES (4<sup>TH</sup> YEAR ONLY)

#### FIELDS OF APPLICATION

Geomechanics (Modeling the shape of planets, tectonics, and earthquake prediction), Infrastruction (Designing foundations or structures), Mechanical Design (Desiging load bearing components for vehicles, powertrain design), Manufacturing (Metal and polymer forming processes, machining), Biomedical (Implant design, bone mechanics, modeling stress phenomena controlling cellular and molecular processes), Materials Science (Composite design, allow microstructions, material processing design), Microelectronics (Failure resistant packaging)

#### LINKS

The Canadian Society for Mechanical Engineering <u>www.csme-scgm.ca</u> The Society of Automotive Engineers <u>www.sae.org</u>

#### **ENERGY AND ENVIRONMENT**

The energy industry is one of the biggest in Canada, dominated by oil and gas, nuclear power and electricity. Environmental engineers play a pivotal role in improving polluted environments, designing facilities that directly affect our modern economy, public health and safety, and designing environmentally-responsible products and processes. Their knowledge of physics, chemistry, and biological processes allows them to address problems such as protecting air, water and land quality; providing safe drinking water; treating and disposing of industrial wastes; preventing environmental problems by designing "cleaner" manufacturing processes; and developing alternative energy sources. Energy and Environmental Engineers are widely sought after by employers in both industry and government.

#### **STREAM COURSES**

#### 4F - MIE515H1 - ALTERNATIVE ENERGY SYSTEMS

This course covers the basic principles, current technologies and applications of selected alternative energy systems. Specific topics include solar thermal systems, solar photovoltaic systems, wind, wave, and tidal energy, energy storage, and grid connections issues.

MIE407H1	Nuclear Reactor Theory and Design
MIE516H1	Combustion and Fuels
CIV440H1	Environmental Impact and Risk Assessment
FOR424H1	Innovation and Manufacturing of Sustainable
	Materials
MIE408H1	Thermal and Machine Design of Nuclear Power
	Reactors
MIE507H1	Heating, Ventilating, Air Conditioning (HVAC)
	Fundamentals
MIE517H1	Fuel Cell Systems
MIE550H1	Advanced Momentum, Heat and Mass Transfer

#### SUGGESTED TECHNICAL ELECTIVES (4<sup>TH</sup> YEAR ONLY)

#### FIELDS OF APPLICATION

Power generation, Automotive (engine design, intake, exhaust, and cooling system design), Aerodynamics (Wind power systems, car body design), Fluid pumping systems (Oil and gas pipelines), Manufacturing (Die-casting, metal processing), Electronics (electronics cooling, ink-jet printing), MEMS systems (microfluidics), Environmental assessment (pollution control).

#### LINKS

Association of Energy Engineers <u>www.aeecenter.org</u> Institute for Sustainable Energy energy.utoronto.ca

#### **BIOENGINEERING**

Biomedical engineers design and develop products for the most complex system on earth – the human body. Artificial organs, medical imaging devices, drug delivery systems are innovative and lifesaving solutions that arise from applying engineering principles to medical problems. Biomedical engineering jobs are expected to increase by 31.4% over the next seven years, more than double the average predicted rate in other fields.

#### **STREAM COURSES (ONE OF)**

#### 4F - MIE439H1F - CELLULAR & TISSUE BIOMECHANICS

Introduction to the application of the principles of mechanical engineering principally solid mechanics and rheology - to living systems. Topics include cellular mechanics and hard and soft tissue mechanics, with consideration of both experimental approaches and analytical modelling. Applications of these topics to biomimetic and biomechanical design are emphasized through a major, integrative group project.

#### 4F – MIE458H1F – BIOFLUID MECHANICS

This course will teach students how to apply fundamental fluid mechanics to the study of biological systems. The course is divided into three modules, with the focus of the first two modules on the human circulatory and respiratory systems, respectively. Topics covered will include blood rheology, blood flow in the heart, arteries, veins and microcirculation, the mechanical properties of the heart as a pump; air flow in the lungs and airways, mass transfer across the walls of these systems, the fluid mechanics of the liquid-air interface of the alveoli, and artificial mechanical systems and devices for clinical aid. The third and final module will cover a range of other fluid problems in modern biology.

MIE414H1	Applied Fluid Mechanics
MIE508H1	Fluids of Biological Systems
BME520H1	Imaging Case Studies in Clinical Engineering
BME595H1	Medical Imaging
CHE475H1	Biocomposites: Mechanics and Bioinspiration
MIE533H1	Non-destructive Evaluation
MIE439H1	Biomechanics I
MIE504H1	Applied Computational Fluid Dynamics
MSE440H1	Biomaterials Processing and Properties
MIE448H1	Engineering Psychology and Human
	Performance

#### SUGGESTED TECHNICAL ELECTIVES (4<sup>TH</sup> YEAR ONLY)

#### FIELDS OF APPLICATION

Bioinformatics (software for bio modelling), Biotechnology (products related to agriculture & environment), Instrumentation and Diagnostics (tools for research, hospital diagnostic equipment), Medical Devices (prosthetics, pace makers), Therapeutics (Pharmaceuticals), Biomedical Suppliers (development of lab and medical equipment)

#### LINKS

Institute of Biomaterials and Biomedical Engineering (IBBME) ibbme.utoronto.ca Club for Undergraduate Biomedical Engineering (CUBE) cube.skule.ca

#### **DEGREE REQUIREMENTS**

#### For official and up-to-date information on the Mechanical Engineering Degree Requirements visit the <u>Engineering Academic Calendar</u>

#### **DEGREE EXPLORER**

Degree Explorer is a planning tool designed to help students and advisors evaluate academic progress towards completion of requirements for graduation. It is not a transcript. It allows you to map out your degree and can help you determine if you are on track. Just because you are able to enrol in a course on ACORN does not mean it will fulfill your degree requirements.

#### TO GRADUATE, YOU NEED

- All Core and Stream Courses
- 2.0 CS Credits (1.0 or more must be HSS)
- 2.0 Technical Elective Credits
- 0.5 Natural Science Credits
- 600 hours of professional experience, or PEY credit
- At least one design course

#### COMPLEMENTARY STUDIES (CS) AND HUMANITIES & SOCIAL SCIENCES (HSS)

WHAT IS A CS ELECTIVE? Complementary Studies (CS) can be broadly defined as studies in humanities, social sciences, arts, management, engineering economics and communication that complements technical curriculum. Engineering, math or science courses—including astronomy and psychology—may not be used to fulfill your CS elective requirement. Additionally, the Rotman School of Management does not typically permit students outside of their faculty to take their courses (i.e. RSM courses).

**WHAT IS AN HSS ELECTIVE?** Humanities and Social Sciences (HSS) courses explore the central issues, thought processes and scholarly methods found in these disciplines. Please note HSS electives are a subset of Complementary Studies (CS) courses; they can be used to satisfy CS elective requirements.

To graduate, you must take 2.0 credits in complementary studies, of which at least 1.0 credits are HSS courses. 0.5 credits = 1 half year course. These are typically

taken in second and fourth year, or in the summer (have to pay extra tuition). Students must complete 4 CS/HSS electives, including 2 mandatory HSS. For a list of faculty approved elective lists, please consult the following links. You can also request other A&S courses to act as a substitute:

For approved HSS electives click here

For approved CS electives click <u>here</u>

#### **TECHNICAL ELECTIVES**

- One in each semester in 4th year, three in second semester in 4th year
- Select from list of approved electives
- Can apply for another course to substitute for a Technical Elective
- Can substitute at most two technical electives

#### PRACTICAL EXPERIENCE REQUIREMENT (PER)

- Minimum of 600 hours to graduate
- Work should support professional career of student
- Must contain a good measure of responsibility
- Form must be filled out and submitted to MIE Undergrad Office
- If you do PEY, you do not need to submit PER form

#### NATURAL SCIENCE ELECTIVES

The curriculum has 3 pre-approved Natural Science electives which are: CHE353, CIV220, and CIV300. There is also an extended list of approved natural science electives <u>here</u>

To view a complete list of the MIE UG Forms click here

### **ENGINEERING MINORS & CERTIFICATES**

#### **CONTACT INFORMATION**

In addition to academic programs in Core 8 subjects/TrackOne and Engineering Science, undergraduate Engineering students may pursue a number of minors and certificates that add breadth and depth to their academic careers. To obtain a minor, students must take six (6) courses in a particular field. A certificate requires three (3) courses. There are many minors and certificates and enrolling for a minor puts it on your Degree Explorer, which can help you plan. You can de-enrol at any point.

Minors and Certificates are managed by the Cross-Disciplinary Programs (CDP) Office and all inquiries associated with the minors should be addressed to <u>engineering.minors@utoronto.ca</u>. For further information on the types of minors available etc. click <u>here</u>

#### HOW DO I ENROL IN A MINOR?

Each minor has a specific enrolment form for you to complete and submit to the Cross-Disciplinary Programs Office. Please note that enrolling in a minor does not guarantee you a spot in any of the engineering minor electives, as they are open to everyone. To avoid disappointment, plan ahead and select courses 6 AM on course selection days. You are responsible for making sure you fulfill the requirements.

#### I DIDN'T GET INTO THE COURSES I WANTED TO, AND I'M WORRIED I WONT FINISH MY MINOR BEFORE GRADUATION. WHAT DO I DO?

Due to popularity, many engineering minor courses are offered in the summer. You are also welcome to complete those courses following graduation, it just may not appear on your degree until later. You can also visit the Cross-Disciplinary Programs Office to de-enrol you in a minor.

#### WILL MY HSS/CS ELECTIVES BE ADDED TO MY TIMETABLE AUTOMATICALLY? WHAT IF I AM ENROLLED IN A MINOR THAT REQUIRES THAT COURSE?

No, you must add them yourself on course selection days. Enrolling in a minor does not guarantee you a spot in its required courses.

#### I'M NOT SURE WHICH ELECTIVES TO TAKE.

The Arts & Science Student's Union puts together a publication called the Anti-Calendar, which provides honest student feedback about many Arts & Science elective courses offered. <u>http://assu.ca/anti-calendar</u>.

#### **ENROLLMENT & REGISTRATION**

#### **OVERLOADS**

• To take more than 5 courses in a semester, must receive approval from undergrad office

• Need to have a 2.7 CGPA

#### **"EXT" OR EXTRA COURSES**

• If taking a course not needed for your degree, you can apply to designate it as EXT.

• All courses that are above and beyond a students' degree requirements MUST be marked as Extra

- Mark will not count towards your GPA, but till shows up on transcript
- Credit can be used for minors/certificates
- Deadline to designate EXT is the same as drop deadline

#### **FAILED COURSES**

If you have failed a core curriculum course, you must re-take it at the next available opportunity. Many first year engineering courses are offered during the summer. If you were unsuccessful in a second or third year course that is a pre-requisite for an upper level course, you must retake the pre-requisite course first. To add a core curriculum course, submit the Course Request Form

(https://www.mie.utoronto.ca/programs/ undergraduate/forms-policies/) to the Undergraduate Office by one week before the add course deadline. To add a failed stream course or CS/HSS elective, you may do so yourself on the course selection dates.

To view a complete list of the MIE UG Forms click <u>here</u>

#### **ENGINEERING EMPLOYMENT RESOURCES**

#### **JOB SEARCH SUPPORT**

University of Toronto Engineering Career Centre engineeringcareers.utoronto.ca

University of Toronto Career Centre www.careers.utoronto.ca

WEBSITES

EngineeringJobs.com <u>www.engineerjobs.com/jobs/canada/ontario/toronto.php</u>

Engineering Careers https://www.engineeringcareers.ca/jobs/toronto-on/

Careerbuilder www.careerbuilder.ca/Jobs/Toronto/Keyword/Engineering

UofT Career Centre Graduating Students Employment Service www.careers.utoronto.ca/gradBeyond/gses.aspx

LinkedIn www.linkedin.com/job/guest

Talent Egg talentegg.ca/career-guides/engineering

Internships for New Grads (monthly stipend of \$2,016.67 before required deductions) <u>www.careeredge.ca</u>

RECRUITING AGENCIES FOR ENGINEERS Randstad <u>www.randstad.ca/engineering</u> Hays <u>www.hays.ca/enhance-your-career</u>



#### **MIE UG OFFICE CONTACT INFORMATION**

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