

Master of Engineering (MEng) in Mechanical Engineering

Program: Course Requirements 2026 - 2027

MEng Graduate Program Office
March 2026
Revised: June 2026



Course based MEng programs in the Department of Mechanical Engineering

There are three pathways available within the MEng program, each of which requires completion of 10 courses (30 units):

1. MEng in Mechanical without specialization (three thematic areas)
2. MEng in Mechanical with specialization in Pipeline Engineering
3. MEng in Mechanical with specialization in Energy and Environment

MEng in Mechanical Engineering without Specialization

Year 1

ENME core	1	required course	ENME 600	Introduction to Numerical Methods for Engineers	Fall
ENME core	2	required course	ENME 646	Finite Element for Engineers	Fall
Theme	7,8,9,10	theme-elective		Choose a theme-elective from the list below	Fall
ENME core	3	required course	ENME 615	Sensors, Data and Signal Analysis	Winter
Theme	7,8,9,10	theme-elective		Choose a theme-elective from the list below	Winter

Year 2

ENGG core	4	required course	ENGG 687	Ethics, Law, and the Engineering Profession	Fall
Option (1 of 3)	6	option course	ENGG 682	Sustainability Engineering	Fall
Option (1 of 3)	6	option course	ENGG 684	Introduction to Project Management	Fall
Theme	7,8,9,10	theme-elective		Choose a theme-elective from the list below	Fall
ENME core	5	required course	ENME 665	Advanced Materials Engineering	Winter
Option (1 of 3)	6	option course	ENGG 683	Innovation and Entrepreneurship	Winter
Theme	7,8,9,10	theme elective		Choose a theme-elective from the list below	Winter



Theme-Electives for MEng in Mechanical Engineering without Specialization:

Theme 1: Mechatronics

ENME 650	Mobile Robotics	Fall
ENME 661	Mechatronics Design Laboratory I	Fall
ENME 641	Advanced Control Systems	Winter
ENME 662	Mechatronics Design Laboratory II	Winter

Theme 2: Aerospace and Energy Systems

ENME 597	Turbomachinery	Fall
ENME 670	Aerodynamics	Fall
ENEN 619.14	Alternative Energy Systems	Winter
ENME 637	Thermal Systems Analysis	Winter

Theme 3: Advanced Manufacturing and Product Design

ENMF 623	CAD/CAM/CAE	Fall
ENME 614	Reliability Engineering	Winter
ENMF 618	Manufacturing Optimization	Winter
ENMF 673	Manufacturing of Polymer Composites	Winter

Notes for MEng Mechanical Engineering without specialization:

- MEng Program entails completion of 10 courses.
- To meet the degree requirements, students must enroll in **5 ENME/ENGG core courses** (required) + any **4 theme-elective** courses from theme-electives list (green highlighted) + **1 option** course (blue highlighted).
- To maintain full-time status, students must be enrolled in at least two courses, per term.
- Please note the courses listed under specializations will not be counted towards your degree requirement and vice versa.



MEng in Mechanical Engineering with Specialization in Pipeline Engineering

Year 1

ENME core	1	required	ENME 624	Fundamentals of Pipeline Economics	Fall
ENME core	2	required	ENME 628	Pipeline Coatings	Fall
ENME core	3	required	ENME 630	Fundamentals of Liquid Hydraulics in Pipeline Systems	Fall
ENME core	4	required	ENME 622	Pump and Compressor Stations	Winter
ENME core	5	required	ENME 626	Corrosion Science in the Pipelines Industry	Winter
ENME core	6	required	ENME 634	Pipeline Geotechnical Engineering	Winter

Year 2

Elective	7	elective	Elective 1	Choose an elective course	Fall
Elective	8	elective	Elective 2	Choose an elective course	Fall
Elective	9	elective	Elective 3	Choose an elective course	Winter
Elective	10	elective	Elective 4	Choose an elective course	Winter

Elective courses (choose 4): Students in Pipeline Engineering Specialization can choose any 4 graduate (600 or 700 level) or senior undergraduate (500 level) engineering courses as their elective courses.



List of approved courses for MEng in Mechanical Engineering with Specialization in Pipeline Engineering

ENME 656 (ENME 556)	Physical Metallurgy (formerly ENME 619.82)	Fall 2026
ENME 620	Geomatics Engineering for Pipeline Systems	Not offered in 2026/2027, May be available for 2027/2028
ENME 622	Pump and Compressor Stations	Winter 2027
ENME 624	Fundamentals of Pipeline Economics	Fall 2026
ENME 626	Corrosion Science in the Pipelines Industry	Winter 2027
ENME 628	Pipeline Coatings	Fall 2026
ENME 630	Fundamentals of Liquid Hydraulics in Pipeline Systems	Fall 2026
ENME 632	Fundamentals of Gas Hydraulics in Pipeline Systems	Not offered in 2026/2027, May be available for 2027/2028
ENME 634	Pipeline Geotechnical Engineering	Winter 2027
ENME 636	Structural Analysis of Buried Steel Pipeline Systems	Not offered in 2026/2027, May be available for 2027/2028
ENME 638	Failure and Fracture Mechanics in the Pipeline Industry	Not offered in 2026/2027, May be available for 2027/2028
ENME 640	Stress Corrosion Cracking of Materials	Fall 2026
ENME 667	Fracture Mechanics	Fall 2026
ENME 669	Fatigue of Materials	Winter 2027



MEng in Mechanical Engineering with Specialization in Energy and Environment

Year 1

ENME core	1	required	ENME 600	Introduction to Numerical Methods for Engineers Ethics,	Fall
ENGG core	2	required	ENGG 687	Law and the Engineering Profession	Fall
Option (1 of 2)	3	option	ENME 646	Finite Element for Engineers	Fall
Option (1 of 3)	4	option	ENGG 682	Sustainability Engineering	Fall
ENME core	5	required	ENME 615	Sensors, Data and Signal Analysis	Winter
ENEN Elective	6	elective	Elective 1	Choose an elective from the approved course list below	Winter
Option (1 of 2)	3	option	ENME 672	Computational Fluid Dynamics	Winter

Year 2

ENEN core	7	required	ENEN 671	Energy and Environment	Fall
ENEN Elective	8	elective	Elective 2	Choose an elective from the approved course list below	Fall
Option (1 of 3)	4	option	ENGG 684	Introduction to Project Management	Fall
ENME core	9	required	ENME 665	Advanced Materials Engineering	Winter
ENEN Elective	10	elective	Elective 3	Choose an elective from the approved course list below	Winter
Option (1 of 3)	4	option	ENGG 683	Innovation and Entrepreneurship	Winter



List of approved elective courses for MEng in Mechanical Engineering with Specialization in Energy and Environment

Choose any three courses:

ENEN 603*	Principles of Environmental Engineering	Fall
ENEN 625	Numerical Methods for Engineers	Fall
ENEN 635	Environmental Modelling	Fall
ENEN 695	Water and Wastewater Pollution, Treatment and	Fall
ENEN 697 (ENCH 643)	Control Air Pollution Mitigation for Environmental Engineers	Fall
ENEN 605*	Environmental Chemistry and Microbiology	Winter
ENEN 619.14	Alternate Energy Systems	Winter
ENEN 621	Experimental Design and Error Analysis Contaminated	Winter
ENEN 653	Soil Remediation	Winter
ENEN 665 (ENCH 665)	Wastewater Issues for the Oil and Gas Industry	Winter
ENEN 693	Life Cycle Assessment	Winter

** Enroll in either ENEN 603 or ENEN 605. Credit for both these courses will not be granted.*



MEng Graduate Program (course-based) FAQ

Student Status: Full-time students in the MEng program are normally registered during the Fall (September to December) and Winter (January to April) terms, with a regularly scheduled break during the Spring/Summer terms (May to August). Students will be considered full-time if they enroll in a minimum of 2 courses (6 units) per term during each of the Fall and Winter terms.

Degree Progression: Full-time students must follow the course requirements outlined above in the exact sequence. Students should not take courses in a different sequence than listed, as first-year and second-year courses are prioritized as needed.

Following the course requirements listed in this document will set students up for success. It will also eliminate any enrollment issues like scheduling conflicts, classes being full, inability to enroll due to pre-requisites, etc. If a student does not follow the required course sequencing, they run the risk of degree progression.

Course enrollment: Course enrollment for the Fall 2026 and Winter 2027 will begin on April 7, 2026. It is highly recommended that students complete their course enrollment for first year (F26 and W27) as soon as possible. This will help students secure a seat in their required program and option courses. For your second year (F27 and W28), students will be able to enroll by late winter/early spring of 2027.

Academic Standing: B- is the minimum passing grade for students enrolled in graduate programs at the University of Calgary. A student who receives a C+ or lower in any course will normally be required to withdraw from the program.

Students are also required to maintain a minimum Grade Point Average (GPA) of 3.0/4.0 each year. A student whose GPA is lower than 3.0 at the time of their registration anniversary will normally be required to withdraw from the program.



Payment of Tuition and other fees: Tuition will be assessed based on the number of courses a student has enrolled in. Once a student has completed the course enrollment, they will see the total amount ([Tuition and General Fees](#)) due under the 'My Financials' section of their [Student Centre](#). Students will use one of the methods outlined on [this page](#) to pay their fees. The tuition and general fee will be due by the 'Tuition and Fee Payment Deadline' for that term. To learn more about the deadlines please refer to the [Academic Schedule](#).

Change of Specialization: Students admitted to the MEng program can request to add/drop a specialization, if they wish to. The earliest a student can request this change is after the term break of the first term of classes. Normally, the term break (also known as reading week) will be closer to middle of the term. After this date, a student can submit the [change of specialization request form](#), to the MEng office. To know the exact dates of term break, please refer to the [Academic Schedule](#).

Submissions to add/drop a specialization request are subject to approval and will be dated for the next immediate term. Courses that a student has enrolled in for the first term of their original program may or may not be applicable for the new specialization. Students are encouraged to review the courses they must enroll in for their first term against the list of courses for their intended specialization. If first-term courses are also approved courses for the intended specialization, a student could potentially use their current courses towards the new specialization. If not, the current courses will remain unused, and students will need to complete all the courses required by the program's new specialization. Additionally, students should ensure that they are certain about switching or dropping specializations, as a reversal will not be possible.

Change of Program: Students admitted to the MEng program can request to change their program to an MSc (thesis-based program) if they wish to. The first step in this process is to identify a supervisor. Please be advised that, without a supervisor, this change will not be possible. The earliest a student can request this change is after the term break of the first term of classes. Normally, the term break (also known as reading week) will be closer to the middle of the term. After this date, students can submit the [change of program request form](#), to the MEng office. To know the exact dates of term break, please refer to the [Academic Schedule](#).

A change of program request is subject to approval and will be dated for the next immediate term. Please be mindful that MEng program-approved courses that students enroll in for the first term, may or may not be applicable for the new MSc program; this will be determined by the department after the change of program request has been submitted. Additionally,

students should be sure that they are certain about switching their program, as a reversal will not be possible.

University of Calgary Academic Calendar: For more detailed information on program regulations and requirements, please refer to the University of Calgary [Academic Calendar](#).

Connect with us: Students are encouraged to contact meng@ucalgary.ca or [connect with an advisor](#) if they have any questions.