

Master of Engineering (MEng) in Chemical Engineering Program: Course Requirements 2025 - 2026

**MEng Graduate Program Office
March 2025**



Course based MEng programs in the Department of Chemical Engineering

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

1. Specialization in Chemical Engineering

2. Specialization in Petroleum Engineering

3. Specialization in Energy and Environment

Course Requirements for MEng in Chemical and Petroleum Engineering with Chemical Engineering Specialization

Year 1

ENGG core	1	required	ENGG 682	Sustainability Engineering	Fall
ENEN core	2	required	ENEN 603	Principles of Environmental Engineering	Fall
Option (3 out of 6)	8, 9, or 10	option	ENCH 650	CO2 Capture, Utilization, and Storage (CCUS): Principles, Technologies and Analysis	Fall
ENGG core	3	required	ENGG 681	Engineering Tools	Winter
ENCH core	4	required	ENCH 669	Advanced Heat, Mass, and Momentum Transport	Winter
Option (3 out of 6)	8, 9, or 10	option	ENCH 565	Process Sensors and Data Acquisition	Winter

Year 2

ENGG core	5	required	ENGG 687	Ethics, Law and the Engineering Profession	Fall
ENCH core	6	required	ENCH 617	Modelling and Identification Advanced Control	Fall
Option (3 out of 6)	8, 9, or 10	option	ENCH 675	Data Science and Machine Learning in Chemical Engineering	Fall
ENGG core	7	required	ENGG 683	Innovation & Entrepreneurship	Winter
option (3 out of 6)	8, 9, or 10	option	ENCH 609	Natural Gas Processing Technology	Winter
option (3 out of 6)	8, 9, or 10	option	ENCH 671	Science & Technology of Catalysis	Winter
option (3 out of 6)	8, 9, or 10	option	ENCH 673	Engineering Principles in Biotechnology	Winter



Course Requirements for MEng in Chemical and Petroleum Engineering with Petroleum Engineering Specialization

Year 1

ENGG core	1	required	ENGG 682	Sustainability Engineering	Fall
Option-1 (4 or all out of 5)	5, 6, 7, 8, 9	option	ENPE 621	Applied Reservoir Engineering	Fall
Option-2 (1 or 2 out of 2)	9, 10	option	ENPE 625	Natural Gas Engineering	Fall
ENGG core	2	required	ENGG 681	Engineering Tools	Winter
Option-1 (4 or all out of 5)	5, 6, 7, 8, 9	option	ENPE 622	Subsurface Production Operations	Winter
Option-1 (4 or all out of 5)	5, 6, 7, 8, 9	option	ENPE 624	Enhanced Oil Recovery	Winter

Year 2

ENGG core	3	required	ENGG 684	Introduction to Project Management	Fall
Option-1 (4 or all out of 5)	5, 6, 7, 8, 9	option	ENPE 623	Reservoir Analysis and Description	Fall
Option-2 (1 or 2 out of 2)	9, 10	option	ENPE 627	Drilling Engineering	Fall
ENGG core	4	required	ENGG 683	Innovation and Entrepreneurship	Winter
Option-1 (4 or all out of 5)	5, 6, 7, 8, 9	option	ENPE 626	Economic Analysis of Energy Systems	Winter

Course Requirements for MEng in Chemical and Petroleum with Energy and Environment Specialization

YEAR 1

ENGG core	1	required	ENGG 682	Sustainability Engineering	Fall
ENGG core	2	required	ENGG 687	Ethics, Law, and the Engineering Profession	Fall
ENEN core	3	required	ENEN 671	Energy and Environment	Fall
ENEN option (choose 5 out of 7)	4, 5, 6, 7, 8	option	ENEN 603*	Principles of Environmental Engineering	Fall
ENEN option (choose 5 out of 7)	4, 5, 6, 7, 8	option	ENEN 605*	Environmental Chemistry and Microbiology	Winter
ENEN option (choose 5 out of 7)	4, 5, 6, 7, 8	option	ENEN 621	Experimental Design and Error Analysis	Winter
ENCH option (choose 2 out of 4)	9, 10	option	ENCH 630	Electrochemical Engineering	Winter

YEAR 2

ENEN option (choose 5 out of 7)	4, 5, 6, 7, 8	option	ENEN 635	Environmental Modelling	Fall
ENEN option (choose 5 out of 7)	4, 5, 6, 7, 8	option	ENEN 697 (ENCH 643)	Air Pollution Mitigation for Environmental Engineers	Fall
ENCH option (choose 2 out of 4)	9, 10	option	ENCH 675	Data Science and Machine Learning in Chemical Engineering	Fall
ENEN option (choose 5 out of 7)	4, 5, 6, 7, 8	option	ENEN 665 (ENCH 665)	Wastewater Issues for the Oil and Gas Industry	Winter
ENEN option (choose 5 out of 7)	4, 5, 6, 7, 8	option	ENEN 693	Life Cycle Assessment	Winter
ENCH option (choose 2 out of 4)	9, 10	option	ENCH 609	Natural Gas Processing Technology	Winter
ENCH option (choose 2 out of 4)	9, 10	option	ENCH 650	CO2 Capture, Utilization, and Storage (CCUS): Principles, Technologies, and Analysis	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 2025 and Winter 2026 terms will begin on April 8, 2025. It is highly recommended that students complete their course enrollment for first year (F25 and W26) as soon as possible. This will help students secure a seat in their required program and option courses. For your second year (F26 and W27), students will be able to enroll by late winter/early spring of 2026.

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 enrol 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.