

Degree Requirements

3B / 4A / 4B

Department of Mechanical & Mechatronics Engineering

The Mechanical Engineering Curriculum

- Meets Canadian Engineering Accreditation Board (CEAB) requirements
- Graduation from a CEAB certified Engineering program satisfies one of the major requirements for registration as a Professional Engineer in Ontario

Mechanical Engineering

1A	MATH 115 Linear Algebra for Engineering	MATH 116 Calculus for Engineering	PHYS 115 Mechanics	CH E 102 Chemistry for Engineers	ME 100 Commun'n & Profess'ism	
1B	MATH 118 Calculus 2	ME 215 Materials 1	ME 101 Commun'n & Profess'ism II	ME 123 Elec. Eng. for Mech. Eng's.	CSE #1	
2A	ME 201 Advanced Calculus	ME 230 Materials 2	ME 202 Statistics for Engineers	ME 269 Elec'mech Dev Power Proc'ing	ME 219 Deformable Solids 1	CSE #2
2B	ME 203 Ordinary Diff'l Equations	ME 212 Dynamics	ME 220 Deformable Solids 2	ME 262 Microproc's & Digital Logic	ME 250 Thermo- dynamics 1	
3A	ME 303 Advanced Eng. Math	ME 354 Thermo- dynamics 2	ME 351 Fluid Mechanics 1	ME 321 Kinematics and Dynamics	ME 340 Manufacturing Processes	
3B	ME 322 Mechanical Design 1	ME 353 Heat Transfer 1	ME 360 Control Systems	ME 362 Fluid Mechanics 2	ME 380 Mech. Eng. Design Work'p	M SCI 261 Managerial & Eng. Econ'ics
4A	ME 481 Mech. Eng. Design Project 1	Technical Elective 1	Technical Elective 2	Technical Elective 3	CSE #4	
4B	ME 482 Mech. Eng. Design Project 2	Technical Elective 4	Technical Elective 5	Technical Elective 6	Technical Elective 7	CSE #5

Mechanical Engineering: 32 Core Courses

1A	MATH 115 Linear Algebra for Engineering	MATH 116 Calculus for Engineering	PHYS 115 Mechanics	CHE 102 Chemistry for Engineers	ME 100 Commun'n & Profess'ism I	
1B	MATH 118 Calculus 2	ME 215 Materials 1	ME101 Commun'n & Profess'ism II	ME 123 Elec. Eng. for Mech. Eng's.	CSE #1	
2A	ME 201 Advanced Calculus	ME 230 Materials 2	ME 202 Statistics for Engineers	ME 269 Elec'mech Dev Power Proc'ing	ME 219 Deformable Solids 1	CSE #2
2B	ME 203 Ordinary Diff'l Equations	ME 212 Dynamics	ME 220 Deformable Solids 2	ME 262 Microproc's & Digital Logic	ME 250 Thermo- dynamics 1	
3A	ME 303 Advanced Eng. Math	ME 354 Thermo- dynamics 2	ME 351 Fluid Mechanics 1	ME 321 Kinematics and Dynamics	ME 340 Manufacturing Processes	
3B	ME 322 Mechanical Design 1	ME 353 Heat Transfer 1	ME 360 Control Systems	ME 362 Fluid Mechanics 2	ME 380 Mech. Eng. Design Work'p	M SCI 261 Managerial & Eng. Econ'ics
4A	ME 481 Mech. Eng. Design Project 1	Technical Elective 1	Technical Elective 2	Technical Elective 3	CSE #4	
4B	ME 482 Mech. Eng. Design Project 2	Technical Elective 4	Technical Elective 5	Technical Elective 6	Technical Elective 7	CSE #5

Core Courses

- You should not have made it to this point without at least attempting these courses.
- Must pass all of these prior to graduation.

These courses cannot be dropped, pre-cleared, or taken out of order without express approval from the Associate Chair UG.

Mechanical Engineering: CSE's (5 Required)

1A	MATH 115 Linear Algebra for Engineering	MATH 116 Calculus for Engineering	PHYS 115 Mechanics	CH E 102 Chemistry for Engineers	ME 100 Commun'n & Profess'ism	
1B	MATH 118 Calculus 2	ME 215 Materials 1	ME 101 Commun'n & Profess'ism II	ME 123 Elec. Eng. for Mech. Eng's.	CSE #1	
2A	ME 201 Advanced Calculus	ME 230 Materials 2	ME 202 Statistics for Engineers	ME 269 Elec'mech Dev Power Proc'ing	ME 219 Deformable Solids 1	CSE #2
2B	ME 203 Ordinary Diff'l Equations	ME 212 Dynamics	ME 220 Deformable Solids 2	ME 262 Microproc's & Digital Logic	ME 250 Thermo- dynamics 1	
3A	ME 303 Advanced Eng. Math	ME 354 Thermo- dynamics 2	ME 351 Fluid Mechanics 1	ME 321 Kinematics and Dynamics	ME 340 Manufacturing Processes	
3B	ME 322 Mechanical Design 1	ME 353 Heat Transfer 1	ME 360 Control Systems	ME 362 Fluid Mechanics 2	ME 380 Mech. Eng. Design Work'p	M SCI 261 Managerial & Eng. Econ'ics
4A	ME 481 Mech. Eng. Design Project 1	Technical Elective 1	Technical Elective 2	Technical Elective 3	CSE #4	
4B	ME 481 Mech. Eng. Design Project 2	Technical Elective 4	Technical Elective 5	Technical Elective 6	Technical Elective 7	CSE #5


CSE's

- At least 1 “List A” course (Impact)
- At least 1 “List B” course (Economics)
 - MSCI 261 is a “List B” CORE course
- At least 2 “List C” courses (Humanities & Social Sciences)
- One additional CSE (List A, B, C or D)

Students may opt to drop their CSE during the term under the ‘voluntary reduced load program’. Doing this does not reduce tuition costs, and may exclude the student from the Dean’s Lists and Scholarships. The dropped course is treated like a failed course when determining a term decision.

Students may replace their CSE with courses required for an option or minor. Many of these courses will count as Technical Electives (TEs), so the CSE can be picked up in another term or in 4th year.

Be Careful !

- Some courses are not TE's although they may appear to be TEs. For example, ME 401, MSCI 441 and GENE 412, GENE 452 are CSEs – not TEs
- It is YOUR responsibility to make sure you satisfy all degree requirements; i.e., do you have the correct number of TE's & CSE's, transfer conditions, have you cleared failed courses by supplemental exams or retaking, etc. (note: special 1A failed course rules)
- If you are not sure?  Ask Meghan!

Mechanical Engineering: Capstone Design

1A	MATH 115 Linear Algebra for Engineering	MATH 116 Calculus for Engineering	PHYS 115 Mechanics	CH E 102 Chemistry for Engineers	ME 100 Commun'n & Profess'ism	
1B	MATH 118 Calculus 2	ME 215 Materials 1	ME 101 Commun'n & Profess'ism II	ME 123 Elec. Eng. for Mech. Eng's.	CSE #1	
2A	ME 201 Advanced Calculus	ME 230 Materials 2	ME 202 Statistics for Engineers	ME 269 Elec'mech Dev Power Proc'ing	ME 219 Deformable Solids 1	CSE #2
2B	ME 203 Ordinary Diff'l Equations	ME 212 Dynamics	ME 220 Deformable Solids 2	ME 262 Microproc's & Digital Logic	ME 250 Thermo- dynamics 1	
3A	ME 303 Advanced Eng. Math	ME 354 Thermo- dynamics 2	ME 351 Fluid Mechanics 1	ME 321 Kinematics and Dynamics	ME 340 Manufacturing Processes	
3B	ME 322 Mechanical Design 1	ME 353 Heat Transfer 1	ME 360 Control Systems	ME 362 Fluid Mechanics 2	ME 380 Mech. Eng. Design Work'p	M SCI 261 Managerial & Eng. Econ'ics
4A	ME 481 Mech. Eng. Design Project 1	Technical Elective 1	Technical Elective 2	Technical Elective 3	CSE #4	
4B	ME 482 Mech. Eng. Design Project 2	Technical Elective 4	Technical Elective 5	Technical Elective 6	Technical Elective 7	CSE #5

Mechanical Engineering Capstone

Every student is required to do a capstone design project

- ME 481 / ME 482 – Coordinators Profs Ghavam and Kwon
- GENE 403 / GENE 404– Coordinator Prof O Nespoli

Mechanical Engineering: TE's (7 Required)

1A	MATH 115 Linear Algebra for Engineering	MATH 116 Calculus for Engineering	PHYS 115 Mechanics	CH E 102 Chemistry for Engineers	ME 100 Commun'n & Profess'ism	
1B	MATH 118 Calculus 2	ME 215 Materials 1	ME 101 Commun'n & Profess'ism II	ME 123 Elec. Eng. for Mech. Eng's.	CSE #1	
2A	ME 201 Advanced Calculus	ME 230 Materials 2	ME 202 Statistics for Engineers	ME 269 Elec'mech Dev Power Proc'ing	ME 219 Deformable Solids 1	CSE #2
2B	ME 203 Ordinary Diff'l Equations	ME 212 Dynamics	ME 220 Deformable Solids 2	ME 262 Microproc's & Digital Logic	ME 250 Thermo- dynamics 1	
3A	ME 303 Advanced Eng. Math	ME 354 Thermo- dynamics 2	ME 351 Fluid Mechanics 1	ME 321 Kinematics and Dynamics	ME 340 Manufacturing Processes	
3B	ME 322 Mechanical Design 1	ME 353 Heat Transfer 1	ME 360 Control Systems	ME 362 Fluid Mechanics 2	ME 380 Mech. Eng. Design Work'p	M SCI 261 Managerial & Eng. Econ'ics
4A	ME 481 Mech. Eng. Design Project 1	Technical Elective 1	Technical Elective 2	Technical Elective 3	CSE #4	
4B	ME 482 Mech. Eng. Design Project 2	Technical Elective 4	Technical Elective 5	Technical Elective 6	Technical Elective 7	CSE #5

TE's

- A total of 7 TE's are required
- For students not registered in an option:
 - A minimum of 4 TE's must be from the Mechanical Engineering TE course list (ME/MTE TE's)
 - A maximum of 3 TE's can be 400 and 500 level technical courses from other engineering faculties
- For students registered in an option:
 - A minimum of 4 TE's must be from the Mechanical Engineering TE course list (ME/MTE TE's)
 - A maximum of 3 TE's can be 200 to 500 level technical courses from the engineering, math, or science faculties as long as they are needed for the option

Mechanical Engineering TE's

A wide variety of TE courses are available in the general theme areas of:

- Automation and Control
- Fluid Mechanics
- Machine Design and Solid Mechanics
- Materials Engineering and Processing
- Thermal Engineering

- Designated Faculty Options or
- Welding & Joining Specialization (Mech. Eng. Only)

Mechanical Engineering: TE's (Welding and Joining)

1A	MATH 115 Linear Algebra for Engineering	MATH 116 Calculus for Engineering	PHYS 115 Mechanics	CH E 102 Chemistry for Engineers	ME 100 Commun'n & Profess'ism	
1B	MATH 118 Calculus 2	ME 215 Materials 1	ME 101 Commun'n & Profess'ism II	ME 123 Elec. Eng. for Mech. Eng's.	CSE #1	
2A	ME 201 Advanced Calculus	ME 230 Materials 2	ME 202 Statistics for Engineers	ME 269 Elec'mech Dev Power Proc'ing	ME 219 Deformable Solids 1	CSE #2
2B	ME 203 Ordinary Diff'l Equations	ME 212 Dynamics	ME 220 Deformable Solids 2	ME 262 Microproc's & Digital Logic	ME 250 Thermo- dynamics 1	
3A	ME 303 Advanced Eng. Math	ME 354 Thermo- dynamics 2	ME 351 Fluid Mechanics 1	ME 321 Kinematics and Dynamics	ME 340 Manufacturing Processes	
3B	ME 322 Mechanical Design 1	ME 353 Heat Transfer 1	ME 360 Control Systems	ME 362 Fluid Mechanics 2	ME 380 Mech. Eng. Design Work'p	M SCI 261 Managerial & Eng. Econ'ics
4A	ME 481 Mech. Eng. Design Project 1	ME 435 Industrial Metallurgy	ME 436 Weld & Join. Processes	Technical Elective 3	CSE #4	
4B	ME 482 Mech. Eng. Design Project 2	ME 526 Fatigue & Fracture	ME 535 Welding Metallurgy	ME 538 Weld. Design, Fab. & QC	Technical Elective 7 or ME 547	CSE #5

You're Running out of Time to Satisfy All Mechanical Engineering Curriculum Requirements!!!

Before you graduate, you must have:

- Passed all 32 required core courses
- Passed 5 CSE and 7 TE courses
- Passed 5 PD courses in total: PD 20, 21 and any 3 of PD 3....PD8, 22, etc.
- Cleared all failed courses
- Have CR for WHMIS
- Have CR for 3 work term reports
- Have CR for 4 of 6 work terms