



Course Planning and Registration Guide

Flex Curriculum

2023W Version 1.0

General Program (Non Co-op)

2022W Third Year

Term 1		Term 2	
MECH 325	4	MECH 305	6
MECH 328	3	T. ELEC	3
MECH 360	3	T. ELEC	3
MECH 368	3	T. ELEC	3
MECH 375	3	C. STUD	3
C. STUD	3		
19		18	

Registration Instructions

STT: MEGA, MEGY, or MEGO
 You may Drop MECH 327, MECH 329, MECH 358, MECH 380 and MECH 392 (unless you would like to count them as technical electives)
 Register into Technical Electives
 Register into complimentary studies courses – one humanities, one Impact of Technology on Society

Anticipated
2023W Fourth Year
SUBJECT TO CHANGE

Term 1		Term 2	
MECH 457 (year-long course)	3	MECH 457 (year-long course)	3
MECH 463	4	MECH 400	3
MECH 431	4	MECH 466	4
T. ELEC	3	T. ELEC	3
T. ELEC	4	T. ELEC	3
17		16	

Your option
 Whether you are on a Co-op Schedule or not (this doesn't necessarily correspond to being in co-op)

What year you will be in

What courses you will take

How to register for this set of courses

What you will take next year (anticipated)

This registration guide should only be used by students who completed Mech 2 in 2021W or later OR students who have been approved to switch to Flex.

2023W Mechanical Engineering Course Planning and Registration Guide

Note that this document is a guide only. The Calendar is the official statement of curriculum requirements, and takes precedence in the event of a discrepancy.

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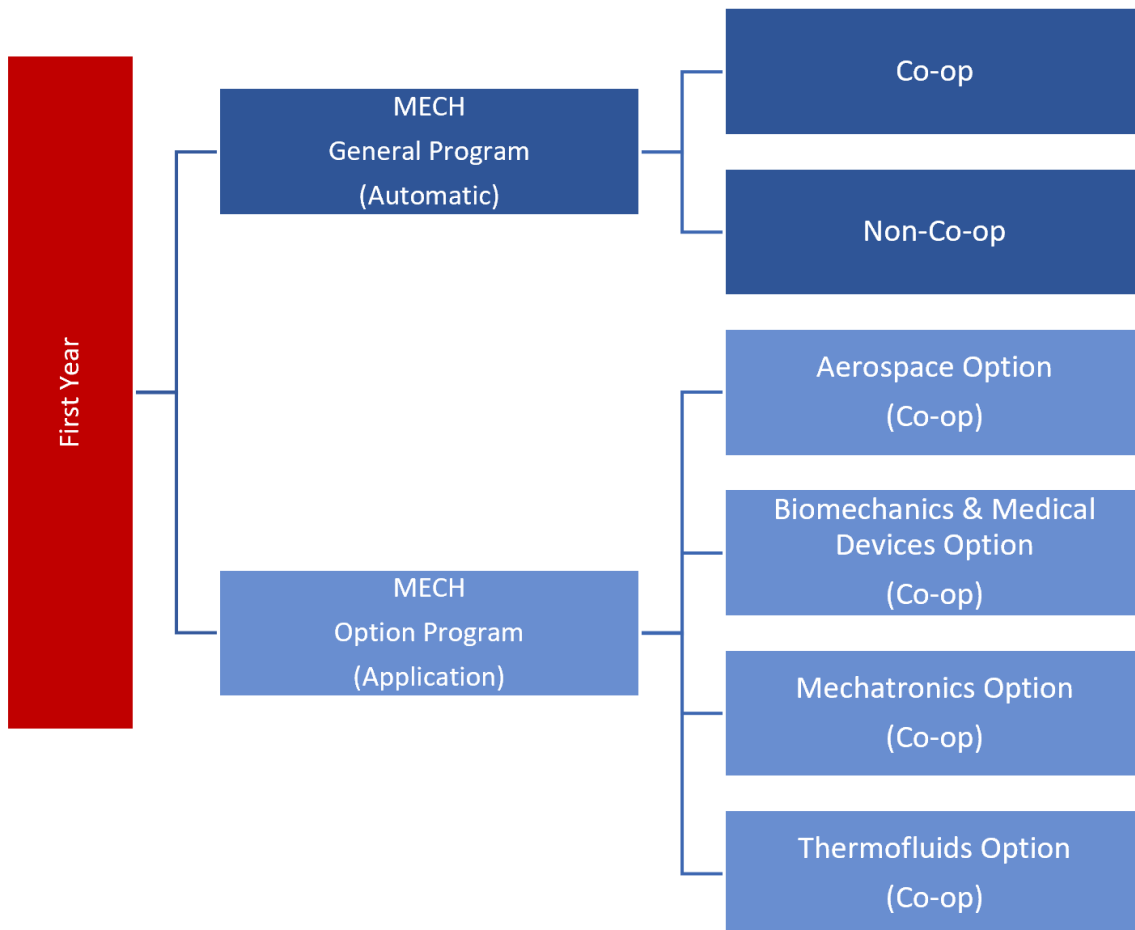
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Standard Degree Paths

In mechanical engineering, students are able to stay in the general stream with or without participating in the Co-op program, or choose one of three options with Co-op. The diagram below depicts the many options available.

If you follow one of these options, as outlined in the book, the Mech department will have scheduled the courses in such a way that you will graduate on time, without course conflicts, provided you pass all of your courses. If you go off-cycle, you are responsible for ensuring you have the necessary pre-requisites and you may end up with a course conflict.



Review your Graduation Requirements – Degree Navigator

The easiest way to review what courses you need to graduate is to log in to Degree Navigator and use the default session selection (directions are at <http://students.engineering.ubc.ca/how-use-degree-navigator>).

If the curriculum you see doesn't look quite right, please contact students@mech.ubc.ca and we will verify that your default session is correct.

Once you know what courses you are required to take, it is important to realize you won't necessarily take them in the order presented in the Calendar.

Because we can only offer most courses once a year, and due to the complexity of pre-requisites, you usually have to mix up the third- and fourth-year courses to make your schedule work. The Department creates recommended course order schedules for the following student programs:

- General Program (Non-Co-op)
- General Program with Co-op
- Aerospace Option – with Co-op
- Biomechanics and Medical Devices Option with Co-op
- Mechatronics Option with Co-op
- Thermofluids Option with Co-op

If you deviate from these schedules, you are responsible for ensuring you meet pre-requisite requirements, and we can't guarantee that your courses won't conflict with each other.

Effect of Co-op on Courses – “Co-op” vs. “Non Co-op” Course Orders

You need to arrange your courses in the right order to ensure you meet pre-requisites. If you simply mash the third-year co-op and third-and-a-half year co-op schedules together, you won't meet your pre-requisites and you may find yourself unregistered from courses. If you are registered in an option but are not in co-op, you can make an appointment with an advisor to talk about how to move your courses around without breaking essential pre-requisite chains (email students@mech.ubc.ca).

“Co-op” Schedule – Third year is taken T2 / T1

Term 1	Term 2	Summer
Year 2	Year 2	Co-op
Co-op	Year 3	Co-op
Year 3.5	Co-op	Co-op
Year 4	Year 4	

“Non Co-op” Schedule – Third year is taken T1 / T2

Term 1	Term 2	Summer
Year 2	Year 2	Off
Year 3	Year 3	Off
Year 4	Year 4	

Term 1	Term 2	Summer
Year 2	Year 2	Co-op
Co-op	Co-op	Co-op
Year 3	Year 3	Co-op
Year 4	Year 4	

Term 1	Term 2	Summer
Year 2	Year 2	Co-op
Year 3	Year 3	Co-op
Co-op	Co-op	Co-op
Year 4	Year 4	

Take the STTs in numeric sequence. If you want to condense year 3 and year 3.5 schedules, consult a MECH advisor first. You can only take one STT per year.

How to Register for Courses

- 1) All students should register online via the Student Services Centre (SSC).
- 2) Problems registering? Try the troubleshooting section below.
- 3) Continued issues with MECH-coded courses? Email students@mech.ubc.ca and request assistance. Don't forget to include your student number and the other information we need to understand the problem (eg. course number, section number, etc). Please also check the pre-requisite information on the following page.
- 4) Continued issues with non MECH-coded courses? Unfortunately, we aren't able to help with courses outside our jurisdiction. Please talk to the Department offering the course directly (see the end of this booklet for contact emails), or complete a formal add/drop request (<http://students.engineering.ubc.ca/forms>) and submit it directly to Engineering Academic Services.

Registration Troubleshooting

Before contacting the Mech Student Services Office for assistance, please check that you have:

- Paid your registration deposit
- Ensured that you have met the English / MECH 226/227 requirements
 - You must complete your first-year English requirement prior to promotion to third year, and your MECH 226/227 requirement prior to promotion to fourth year.
- Registered in a Standard Time Table (STT)
 - You can't register in individual courses without registering in an STT first.
 - If your STT is full, pick the next most similar timetable and add/drop from there to match the registration guide.
- Ensured that you do not have any conflicts with other courses
- Tried registering for the course on your own
 - We use "Restricted" seats rather than general seats for our courses, but seeing the word "restricted" does not necessarily mean you can't take the course. Always attempt to register prior to requesting assistance.

Due to rules about classroom bookings and minimum course enrollment, MECH students are required to complete their registration for both academic terms by August 1st.

After August 1st:

- **Courses with low enrollment may be cancelled**
- **Remaining seats in MECH-coded courses will be made available to non-MECH students (eg. students from other engineering programs, exchange students, graduate students).**
- **It may not be possible for us to accommodate your registration requests after August 1st, even for required core courses.**

Enforcement of Pre-Requisites

Pre-requisites based on failures or deficiencies in Mech 2 are strongly enforced to ensure consistency and fairness to all students. Please do not ask for an exception – they were considered very carefully before being put into place.

Mech 2 Pre-requisite Enforcements		
Failed or Deficient Subject Area	You May Not Take (Enforced Prerequisite)	We Recommend Not Taking (Unenforced)
Dynamics	Core: MECH 463, MECH 466 Option/Elective: MECH 366, MECH 435	
Solid Mech	Core: MECH 305/6, MECH 326, MECH 329, MECH 360, MECH 392, MECH 426, MECH 463	
Electrical	Core: MECH 368, MECH 466 Option/Elective: MECH 366	
Materials	Core: MECH 326, MECH 329, MECH 392 Option/Elective: MECH 366	
DE Math (MATH 255/258)	Core: MECH 358, MECH 360, MECH 463, MECH 466. Option/Elective: MECH 366	MECH 375
Fluids	Core: MECH 305, MECH 380 Option/Elective: MECH 366, MECH 386, MECH 433	MECH 375
Thermo	Core: MECH 305/6, MECH 326, MECH 327, MECH 375, MECH 426	MECH 366, MECH 380
Vector Calc Math (MATH 253/254)	Core: MECH 358, MECH 463	

For all other pre-requisite issues, you must contact the instructor of the course (please cc students@mech.ubc.ca). The Professor will consider requests on a case-by-case basis, and may contact you if he or she has questions about your preparation. If your request is approved, please forward the approval email to students@mech.ubc.ca and our office will register you in the course.

A professor has no obligation to accept a prerequisite waiver request. There is no appeal against his or her decision.

You are advised to make requests as early as possible, as it may take a week or more to process your request. Please do not make requests prior to your registration date opening, as our office is unable to help you until you are released for registration, and often times students are actually able to register themselves once.

Registration Guides

How to use these guides:

Find the correct option, and the correct year level.

General Program (Non Co-op)

Your option

Whether you are on a Co-op Schedule or not (this doesn't necessarily correspond to being in co-op)

2022W Third Year

Term 1		Term 2	
MECH 325	4	MECH 305	6
MECH 328	3	T. ELEC	3
MECH 360	3	T. ELEC	3
MECH 368	3	T. ELEC	3
MECH 375	3	C. STUD	3
C. STUD	3		
	19		18

What year you will be in

What courses you will take

How to register for this set of courses

Registration Instructions	
STT: MEGA, MEGY, or MEGO You may Drop MECH 327, MECH 329, MECH 358, MECH 380 and MECH 392 (unless you would like to count them as technical electives) Register into Technical Electives Register into complimentary studies courses – one humanities, one Impact of Technology on Society	

Anticipated			
2023W Fourth Year			
SUBJECT TO CHANGE			
Term 1		Term 2	
MECH 457 (year-long course)	3	MECH 457 (year-long course)	3
MECH 463	4	MECH 400	3
MECH 431	3	MECH 466	4
T. ELEC	3	T. ELEC	3
T. ELEC	4	T. ELEC	3
	17		16

What you will take next year (anticipated)

Brief course descriptions are available in the official UBC Calendar. Past syllabi can be found on the Department website.

Registration Guide Abbreviations

STT – Standard Timetable

C.STUD – Complementary Studies (additional information on page 21)

T.ELEC – Technical Elective (additional information on page 25)

General Program (Non-Co-op)

2023W Third Year

Term 1		Term 2	
MECH 325	4	MECH 305	6
MECH 328	3	T. ELEC	3
MECH 360	3	T. ELEC	3
MECH 368	3	T. ELEC	3
MECH 375	3	C. STUD	3
C. STUD	3		
	19		18
Registration Instructions			
STT: MEGA, MEGY, or MEGO <ul style="list-style-type: none"> • Register in three Technical Electives in Term 2 • Register in two Complimentary Studies Electives – 3 credits of Humanities/Social Sciences <u>AND</u> 3 credits of Impact of Engineering on Society, Sustainability and Environmental Stewardship 			

Anticipated			
2024W Fourth Year			
SUBJECT TO CHANGE			
Term 1		Term 2	
MECH 457 (year-long course)	3	MECH 457 (year-long course)	3
MECH 431	3	MECH 400	3
MECH 463	4	MECH 466	4
T. ELEC	3	T. ELEC	3
T. ELEC	4	T. ELEC	3
	17		16

General Program (Non-Co-op)

2023W Fourth Year

Term 1		Term 2	
MECH 457 (year-long course)	3	MECH 457 (year-long course)	3
MECH 463	4	MECH 400	3
T. ELEC	3	MECH 431	3
T. ELEC	3	MECH 466	4
T.ELEC	4	T. ELEC	3
	17		16
Registration Instructions			
STT: MERI <ul style="list-style-type: none"> • Register in three Technical Electives • Register in a MECH 466 lab section • Register in a MECH 400 tutorial section 			

General Program (with Co-op)

2023W Third Year

Term 1		Term 2	
Co-op		MECH 305	6
		MECH 360	3
		MECH 375	3
		T. ELEC	3
		C. STUD	3
			18
Registration Instructions			
STT: MEGU <ul style="list-style-type: none"> • Register in a Technical Elective • Register in a Complimentary Studies Elective – 3 credits of Humanities/Social Sciences <u>OR</u> Impact of Engineering on Society, Sustainability and Environmental Stewardship 			

Anticipated			
2024W Third and a Half Year			
SUBJECT TO CHANGE			
Term 1		Term 2	
MECH 325	4	Co-op	
MECH 328	3		
MECH 368	3		
T. ELEC	3		
T. ELEC	3		
C. STUD	3		
			19

Anticipated			
2025W Fourth Year			
SUBJECT TO CHANGE			
Term 1		Term 2	
MECH 457 (year-long course)	3	MECH 457 (year-long course)	3
MECH 431	3	MECH 400	3
MECH 463	4	MECH 466	4
T. ELEC	3	T. ELEC	3
T. ELEC	4	T. ELEC	3
			16
			17

General Program (with Co-op)

2023W Third and a Half Year

Term 1			Term 2	
MECH 325	4		Co-op	
MECH 328	3			
MECH 368	3			
T. ELEC	3			
T. ELEC	3			
C. STUD	3			
	19			
Registration Instructions				
STT: MEND, MENO, or MENT <ul style="list-style-type: none"> • Register in two Technical Electives • Register in one Complimentary Studies Elective – 3 credits of Humanities/Social Sciences <u>OR</u> 3 credits of Impact of Engineering on Society, Sustainability and Environmental Stewardship 				

Anticipated				
2024W Fourth Year				
SUBJECT TO CHANGE				
Term 1			Term 2	
MECH 457 (year-long course)	3		MECH 457 (year-long course)	3
MECH 431	3		MECH 400	3
MECH 463	4		MECH 466	4
T. ELEC	3		T. ELEC	3
T. ELEC	4		T. ELEC	3
	17			16

General Program (with Co-op)

2023W Fourth Year

Term 1		Term 2	
MECH 457 (year-long course)	3	MECH 457 (year-long course)	3
MECH 463	4	MECH 400	3
T. ELEC	3	MECH 466	4
T. ELEC	3	MECH 431	3
T. ELEC	4	T. ELEC	3
	17		16
Registration Instructions			
STT: MERU <ul style="list-style-type: none"> • Drop APSC 450, ELEC 344, MECH 426 • Register in MECH 400 lecture and tutorial sections • Register in a MECH 466 lab section • Register in three Technical Electives 			

Aerospace Option

2023W Third Year

Term 1		Term 2	
Co-op		MECH 305	6
		MECH 359	4
		MECH 360	3
		MECH 375	3
		MECH 380	3
		C.STUD	3
			22
Registration Instructions			
STT: MERA <ul style="list-style-type: none"> Register in a MECH 380 tutorial section Register in one Complimentary Studies Elective – 3 credits of Humanities/Social Sciences <u>OR</u> 3 credits of Impact of Engineering on Society, Sustainability and Environmental Stewardship 			

Anticipated			
2024W Third and a Half Year			
SUBJECT TO CHANGE			
Term 1		Term 2	
MECH 327	3	Co-op	
MECH 328	3		
MECH 368	3		
MECH 426	3		
MECH 463	4		
MECH 481	3		
	19		

Anticipated			
2025W Fourth Year			
SUBJECT TO CHANGE			
Term 1		Term 2	
MECH 431	3	MECH 400	3
MECH 453 (year-long course)	3	MECH 453 (year-long course)	3
MECH 462	3	MECH 466	4
MECH 477	3	MECH 484	3
MECH 479	3	MECH 489	4
MECH 485	3	MTRL 494	3
C. STUD	3		
	21		20

Aerospace Option

2023W Third and a Half Year

Term 1			Term 2	
MECH 327	3		Co-op	
MECH 328	3			
MECH 368	3			
MECH 426	3			
MECH 463	4			
MECH 481	3			
	19			
Registration Instructions				
STT: MERE				

Anticipated				
2024W Fourth Year				
SUBJECT TO CHANGE				
Term 1			Term 2	
MECH 431	3		MECH 400	3
MECH 453 (year-long course)	3		MECH 453 (year-long course)	3
MECH 462	3		MECH 466	4
MECH 477	3		MECH 484	3
MECH 479	3		MECH 489	4
MECH 485	3		MTRL 494	3
C. STUD	3			
	21			20

Aerospace Option

2023W Fourth Year

Term 1		Term 2	
MECH 453 (year-long course)	3	MECH 400	3
MECH 462	3	MECH 431	3
MECH 477	3	MECH 453 (year-long course)	3
MECH 479	3	MECH 466	4
MECH 485	3	MECH 484	3
C. STUD	3	MECH 489	4
		MTRL 494	3
	18		23
Registration Instructions			
STT: MERO <ul style="list-style-type: none"> • Drop APSC 450 • Register in MECH 400 lecture and tutorial section • Register in a MECH 466 lab section 			

Biomechanics and Medical Devices Option

2023W Third Year

Term 1		Term 2	
Co-op		MECH 305	6
		MECH 360	3
		MECH 375	3
		C. STUD	3
		C. STUD	3
			18
Registration Instructions			
STT: MEGS <ul style="list-style-type: none"> Register into a Technical Elective Register into a Complimentary Studies Elective – 3 credits of Humanities/Social Sciences <u>OR</u> 3 credits of Impact of Engineering on Society, Sustainability and Environmental Stewardship 			

Anticipated			
2024W Third and a Half Year			
SUBJECT TO CHANGE			
Term 1		Term 2	
BMEG 410	3	Co-op	
MECH 325	4		
MECH 328	3		
MECH 368	3		
MECH 463	4		
	17		

Anticipated			
2025W Fourth Year			
SUBJECT TO CHANGE			
Term 1		Term 2	
BMEG 456	3	MECH 400	3
MECH 459 (year-long course)	3	MECH 439	1
MECH 431	3	MECH 459 (year-long course)	3
T. ELEC	3	MECH 466	4
T. ELEC	3	MTRL 495	3
T. ELEC	3	T. ELEC	3
	18		17

Biomechanics and Medical Devices Option

2023W Third and a Half Year

Term 1			Term 2	
BMEG 410	3		Co-op	
MECH 325	4			
MECH 328	3			
MECH 368	3			
MECH 463	4			
	17			
Registration Instructions				
STT: MERE				

Anticipated				
2024W Fourth Year				
SUBJECT TO CHANGE				
Term 1			Term 2	
BMEG 456	3		MECH 400	3
MECH 459 (year-long course)	3		MECH 439	1
MECH 431	3		MECH 459 (year-long course)	3
T. ELEC	3		MECH 466	4
T. ELEC	3		MTRL 495	3
T. ELEC	3		T. ELEC	3
	18			17

Biomechanics and Medical Devices Option

2023W Fourth Year

Term 1		Term 2	
MECH 459 (year-long course)	3	MECH 400	3
T. ELEC	3	MECH 431	3
T. ELEC	3	MECH 439	1
T. ELEC	3	BMEG 456	3
T. ELEC	3	MECH 459 (year-long course)	3
		MECH 466	4
		MTRL 495	3
	15		20
Registration Instructions			
STT: METO <ul style="list-style-type: none"> • Drop ELEC 344, MECH 426, and APSC 450 • Register in MECH 400 lecture and tutorial • Register in MECH 466 lab section • Register in four Technical Electives in term 1 			

Mechatronics Option

2023W Third Year

Term 1		Term 2	
Co-op		CPEN 312	3
		ELEC 302	3
		ELEC 343	3
		MECH 306	4
		MECH 360	3
		MECH 375	3
			19
Registration Instructions			
STT: Choose MEMO or MEMT			

Anticipated			
2024W Third and a Half Year			
SUBJECT TO CHANGE			
Term 1		Term 2	
CPSC 259	4	Co-op	
MECH 325	4		
MECH 328	3		
MECH 366	3		
MECH 463	4		
MECH 392	2		
	20		

Anticipated			
2025W Fourth Year			
SUBJECT TO CHANGE			
Term 1		Term 2	
CPEN 333	3	MECH 400	3
MECH 420	3	MECH 421	4
MECH 423	4	MECH 458 (year-long course)	3
MECH 458 (year-long course)	3	T. ELEC	3
MECH 467	4	C. STUD	3
MECH 431	3	C. STUD	3
	20		19

Mechatronics Option

2023W Third and a Half Year

Term 1			Term 2	
CPSC 259	4		Co-op	
MECH 325	4			
MECH 328	3			
MECH 366	3			
MECH 463	4			
MECH 392	2			
	20			
Registration Instructions				
STT: MEPA or MEPO				

Anticipated				
2024W Fourth Year				
SUBJECT TO CHANGE				
Term 1			Term 2	
CPEN 333	3		MECH 400	3
MECH 420	3		MECH 421	4
MECH 423	4		MECH 458 (year-long course)	3
MECH 458 (year-long course)	3		T. ELEC	3
MECH 467	4		C. STUD	3
MECH 431	3		C. STUD	3
	20			19

Mechatronics Option

2023W Fourth Year

Term 1		Term 2	
CPEN 333B	3	MECH 400	3
MECH 420	3	MECH 421	4
MECH 423	4	MECH 458 (year-long course)	3
MECH 458 (year-long course)	3	MECH 431	3
MECH 467	4	C. STUD	3
T. ELEC	3	C. STUD	3
	20		19

Registration Instructions

STT: MESH

- Drop APSC 450
- Register in MECH 400 in Term 2
- Register in a MECH 420 lab section
- Register in a MECH 421 lab section
- Register in a technical elective
- Register in two Complimentary Studies electives - 3 credits of Humanities/Social Sciences and 3 credits of Impact of Engineering on Society, Sustainability and Environmental Stewardship

Thermofluids Option

2023W Third and a Half Year

Term 1			Term 2	
MECH 325	4		Co-op	
MECH 327	3			
MECH 328	3			
MECH 386	3			
C.STUD	3			
C. STUD	3			
	19			
Registration Instructions				
STT: MEPI <ul style="list-style-type: none"> Register in two Complimentary Studies electives - 3 credits of Humanities/Social Sciences and 3 credits of Impact of Engineering on Society, Sustainability and Environmental Stewardship 				

Anticipated				
2024W Fourth Year				
SUBJECT TO CHANGE				
Term 1			Term 2	
MECH 431	3		MECH 400	3
MECH 454 (year-long course)	3		MECH 454 (year-long course)	3
MECH 463	4		MECH 466	4
MECH 368	3		MECH 489	4
MECH 479	3		T. ELEC	3
T. ELEC	3			
	19			17

Thermofluids Option

2023W Fourth Year

Term 1		Term 2	
MECH 454 (year-long course)	3	MECH 400	3
MECH 463	4	MECH 454 (year-long course)	3
MECH 368	3	MECH 466	4
MECH 479	3	MECH 489	4
T. ELEC	3	MECH 431	3
T. ELEC	3		
	19		17
Registration Instructions			
STT: META <ul style="list-style-type: none"> • Drop ELEC 344 and APSC 450 • Register in MECH 400 for Term 2 • Register in MECH 368 • Register in a MECH 400 tutorial section • Register in a MECH 466 lab section • Register in three technical electives 			

Electives

The following sections provide information on complementary studies electives, technical electives, and electives for specialized options.

Complementary Studies Elective Requirements *Note: Complementary studies requirements are governed by Engineering Academic Services. This page is for your general information, and to help you interpret the Calendar listing (<http://www.students.ubc.ca/calendar/index.cfm?tree=12,195,272,30>). In case of discrepancies, the Calendar listing takes precedence.*

MECH students require a minimum of 21 complementary credits to graduate. Three courses (9 credits) are already in your core curriculum (MECH 226/227, MECH 400, and MECH 431). The remaining 12 credits are taken as follows:

1. **A 1st Year Communications Course:** WRDS 150B, ENGL 112, or another first-year English course (typically taken in first year).
2. **An Impact of Engineering on Society, Sustainability and Environmental Stewardship course:** Acceptable courses can be found on the following link: <https://academicservices.engineering.ubc.ca/degree-planning/course-planning/>. Note that not all courses are offered all years, and we have no control over what courses will be offered. Students may seek approval from the Engineering Academic Services Office for other courses that address the impact of engineering on society, sustainability and environmental stewardship as the central course theme.
3. **A Humanities or Social Sciences course** (typically taken in first year): This elective must deal with central issues, methodologies, and thought processes of the humanities and social sciences. Most courses from the Faculty of Arts are acceptable apart from courses that are scientific or performance based (ex. dramatic arts). Some other exceptions include ARCL 140, CLST 301, PHIL 125, PHIL 220 and PSYC 218. To ensure a course is eligible, please consult ESS. Courses that teach language skills are also not accepted UNLESS your Impact of Technology on Society course is from the Faculty of Arts.
4. **A second Humanities or Social Sciences course:** A language skills course can also be substituted in place of the second Humanities or Social Sciences course. If you took a six credit Impact of Engineering on Society, Sustainability and Environmental Stewardship or humanities course, you do not need to take this fourth course.

Most students entering 3rd year in Mech still need one Impact of Engineering on Society, Sustainability and Environmental Stewardship and one Humanities/Social Sciences or Language elective to complete their requirements. Everyone needs at least 21 total credits.

Commonly Asked Questions:

1. Do ECON courses count towards my Humanities/Social Sciences requirement?

Yes. ECON courses may be used towards requirements #3 and #4. Note that ECON 310 and 311 (or 101 and 102) are part of the Minor in Commerce, so students interested in the Minor may wish to select those courses.

2. Do COMM/COMR courses count towards my Humanities/Social Sciences requirement?

No. COMM/COMR courses are not in the Faculty of Arts and are considered technical in nature. In some circumstances, however, 3 credits of COMM/COMR courses may be used as a Group D Technical Elective in the Mech program (see the later section on technical electives). *Please note that only three credits of Group D Technical Electives may be used towards your degree requirements. Students are **not** allowed to double count COMM/COMR courses towards both their Mech program requirements and their Minor in Commerce.*

Technical Elective Requirements

The number of required technical electives varies depending on what option you are following. The requirements for each option are provided below.

General Program Requirements

Started MECH 2	Total Credits	Restrictions
2021W or later	22	<ul style="list-style-type: none"> At least 9 credits must be from Group A (MECH Engineering Science/Design) No more than 6 credits can be from Group C and D combined (Non-MECH Courses) No more than 3 credits can be from Group D (Outside of Engineering)

Aerospace Option Requirements

There are no technical electives in the Aerospace Option

Biomechanics and Medical Devices Option Requirements

Started MECH 2	Total Credits	Restrictions
2021W or later	12	<ul style="list-style-type: none"> At least 6 credits must be from Group A (MECH Engineering Science/Design) No more than 6 credits can be from Group C and D combined (Non-MECH Courses) No more than 3 credits can be from Group D (Outside of Engineering) Of the required 12 total credits, must take 2 of MECH 433, MECH 435, or MECH 436, or have a written exception from the Option Coordinator.

Mechatronics Option requirements

Started 4 th year	Total Credits	Restrictions
2021W or later	3	<ul style="list-style-type: none"> No restrictions – students can take any technical elective from Groups A-D

Thermofluids Option requirements

Started MECH 2	Total Credits	Restrictions
2021W or later	6	<ul style="list-style-type: none"> No more than 3 credits can be from Group D (Outside of Engineering)

Camosun Bridge Technical Elective Requirements

Students transferring from the Camosun Bridge Program must meet the listed total number of technical elective credits for their option, **but cannot receive credit toward their degree for non-engineering science/design courses.** This means that Camosun Bridge students must select all of their technical electives from Group A (MECH Engineering Science/Design), regardless of which option they are in. Should students have any questions, please consult the Mech Student Services office.

Group A Technical Electives for 2023W

MECH Courses (Engineering Science/Design)

Course Number	Course Title	Term 1	Term 2	Summer	Not Offered
MECH 327	Thermodynamics II	✓			
MECH 329	Materials for Mechanical Design	✓			
MECH 380	Fluid Dynamics		✓		
MECH 386	Industrial Fluid Mechanics	✓			
MECH 392	Manufacturing Processes	✓			
MECH 471 (previously MECH 410A)	Pulp & Paper Technology		✓		
MECH 410D	Special Topics: Engineering Dynamics	✓			
MECH 426	Mechanical Design	✓			
MECH 433	Biofluids	✓			
MECH 435	Orthopaedic Biomechanics		✓		
MECH 436	Fundamentals of Injury Biomechanics	✓			
MECH 462	Finite Element Analysis	✓			
MECH 469	Dynamic System Modeling	✓			
MECH 477	Aerospace Propulsion	✓			
MECH 478	Internal Combustion Engines		✓		
MECH 481	Aerodynamics of Aircraft I	✓			
MECH 484	Aircraft Design: Aerodynamics		✓		
MECH 485	Aircraft Design: Structures	✓			
MECH 488	Introduction to Ship Hydrodynamics	✓			
MECH 489	Experimental Thermofluids		✓		
MECH 491	Computer-Aided Manufacturing	✓			

Group B Technical Electives for 2023W

MECH Courses (not Engineering Science/Design)

Course Number	Course Title	Term 1	Term 2	Summer	Not Offered
MECH 359 (previously MECH 358)	Engineering Analysis		✓		
MECH 410 C/F	Undergraduate Research I/II (Term 1/2)	✓	✓		
MECH 445	Fuel Cell Systems		✓		
MECH 464	Industrial Robotics		✓		
MECH 468	Modern Control Engineering		✓		
MECH 479	Computational Fluid Dynamics	✓			
MECH 493 (T1-T2)	Introduction to Academic Research	✓	✓		
MECH 495	Industrial Engineering		✓		
MECH 496	Engineering Management		✓		
MECH 497	Research Skills and Data Analysis			✓	
MECH 498	Research Communication			✓	

Please register by August 1 as courses with low registration may be cancelled. The courses on the SSC will represent the most up-to-date course listings.

See page 15 for how many electives you need. Availability of electives in any given year is subject to instructor availability.

Group C Technical Electives for 2023W

Outside Department – Engineering Courses

Course Number	Course Title	Term 1	Term 2	Summer	Not Offered
APSC 440	New Product Development		✓		
CEEN 501	Thermal Energy Systems		✓		
CHBE 355	Kinetics and Reactor Design		✓		
CHBE 370	Fundamentals of Sustainable Engineering	✓			
CHBE 373	Water Pollution Control	✓			
CHBE 402	Biomass Fractionation Technology		✓		
CHBE 477	Fuel Cell and Electrochemical Engineering		✓		
CHBE 483	Energy Engineering	✓			
CHBE 485	Air Pollution Prevention and Control	✓			
CIVL 478	Building Science	✓			
CPEN 312	Digital Systems and Microcomputers		✓		
ELEC 344	Applied Electronics and Electromechanics	✓	✓		
IGEN 450	Pipeline Engineering I	✓			
IGEN 451	Pipeline Engineering II		✓		
IGEN 452	Pipeline Design		✓		
MANU 370	Production Systems Management II	✓			
MANU 485	Metal Cutting and Machine Tool Vibrations		✓		
MINE 470	Indigenous Peoples and Mining in Canada	✓			
MTRL 340	Manufacturing in Materials Engineering		✓		
MTRL 365	Mechanical Behaviour of Materials		✓		
MTRL 382	Ceramics		✓		
MTRL 394	Polymers and Polymer Matrix Composites		✓		
MTRL 460	Monitoring and Optimization of Materials Processing	✓			
MTRL 478	Electronic Materials		✓		
MTRL 485	Failure of Materials	✓			
MTRL 486	Nondestructive Evaluation	✓			
MTRL 494	Composite Materials		✓		
MTRL 495	Biomaterials		✓		
MTRL 496	Biomimetic Materials Processing		✓		

Many of these non-MECH courses may not be offered each year and may have prerequisite requirements that you may not meet - contact the course instructor to see if your preparation is appropriate. Although Mech approves these towards your degree requirements, it is up to the offering department to decide if the course will accept out of department registrants.

The Group C table is not an exhaustive list, but includes courses outside of Mech that students in the past have been interested in. If you are interested in taking a course within UBC Engineering that is not included on this list, you must email students@mech.ubc.ca with the following information:

- Your name, student number
- The course number, title, and description (from the Academic Calendar)
- The course syllabus (either a link to an online version, or a .txt, .rtf, .doc or .pdf attachment)
- Confirmation that the course will not conflict with any other courses you are taking
- The reason(s) you would like to take the course and why it's of relevance to your studies

Please note that any new course requests must:

- Support your academic and career goals
- Be 300 level or above
- Be designed for students in that discipline (eg. no engineering courses that are designed for Arts students like APSC 366)

Group D Technical Electives for 2023W

Outside Department – Non-Engineering Courses

Course Number	Course Title	Term 1	Term 2	Summer	Not Offered
ADHE 329	Developing Short Courses, Workshops and Seminars	✓	✓		
BIOC 301	Biochemistry Laboratory	✓	✓		
BIOC 302	General Biochemistry	✓	✓		
COMR 329	Principles of Organizational Behavior	✓	✓		
COMR 457	Fundamentals of Financial Accounting	✓	✓		
COMR 458	Fundamentals of Managerial Accounting		✓		
COMR 465	Marketing Management	✓	✓		
COMR 473	Business Finance	✓	✓		
ENST 310	Environment and Sustainability				✓
ENST 311	Urban Environments	✓			
ENST 319	Environmental Impact Assessment				✓
GRSJ 300	Intersectional Approaches to Thinking Gender	✓	✓		
GRSJ 301	Gender, Race and Indigeneity in Canada		✓		
MATH 300	Introduction to Complex Variables	✓	✓		
MATH 400	Applied Partial Differential Equations	✓	✓		
PHYS 318	Experimental Acoustics				✓
PHYS 330	Modern Physics				✓
PHYS 333	Energy and Climate	✓			
PHYS 438	Zoological Physics		✓		
PHYS 404	Introduction to Medical Physics	✓			
PHYS 405	Radiation Biophysics	✓			

Students are **not** allowed to double count technical elective courses towards both their Mech program requirements and the requirements of a minor. This is particularly important for students to note who are pursuing a Minor in Commerce, as under the old curriculum double counting was permitted.

Many of these non-MECH courses may not be offered each year and may have prerequisite requirements that you may not meet - contact the course instructor to see if your preparation is appropriate. Although Mech approves these towards your degree requirements, it is up to the offering department to decide if the course will accept out of department registrants.

The Group D table is not an exhaustive list, but includes courses outside of Engineering that students in the past have been interested in. If you are interested in taking a course outside of UBC Engineering that is not included on this list, you must email students@mech.ubc.ca with the following information:

- Your name, student number
- The course number, title, and description (from the Academic Calendar)
- The course syllabus (either a link to an online version, or a .txt, .rtf, .doc or .pdf attachment)
- Confirmation that the course will not conflict with any other courses you are taking
- The reason(s) you would like to take the course and why it's of relevance to Mechanical Engineering

Please note that any new course requests must:

- Support your academic and career goals
- Be 300 level or above
- Be designed for students in that discipline (eg. no science courses that are designed for Arts students)

APSC 486: New Venture Design

APSC 486 is an interdisciplinary (Engineering / Commerce) project course that has the primary goal of providing students of both Faculties with knowledge and practical experience related to the formation of an entrepreneurial enterprise based on the development of a new product or process.

APSC 486 may be taken as a technical elective with the following provisions:

- General, Biomedical, and Thermofluids students may use it to cover 3 credits of Group C and 3 credits of Group D technical elective
- Mechatronics students may use it to cover their 3 credits of technical elective. The remaining 3 credits will not be used towards your degree.

Students are also eligible to combine APSC 486 and MECH 45X (Capstone Design Project) by using the same project as the basis for both courses. By doing this, your total credit load for the combined courses (APSC 486 + APSC 496A) will be 9 credits (you will receive 6 credits towards the MECH 45X requirement and 3 credits as a Group D technical elective). MECH students who enroll in both courses for a total of 9 credits will be co-supervised both by APSC 486 instructors and one of the MECH 45X instructors. The project will primarily follow the APSC 486 curriculum, but students will also work out a plan with their MECH 45X instructor to satisfy some of the key design requirements of MECH 45X. Students are expected to attend all MECH 45X classroom and presentation sessions. For more details, please see <http://design.engineering.ubc.ca/design-courses/new-venture-design/>

Practical Advice for Planning a Lighter Course Load

Mechanical Engineering at UBC is a very demanding program, and for some students the workload is overwhelming. A potential solution to this is planning a lighter course load, and extending your degree by 1-2 terms. If you are thinking of doing so, here are some things to consider:

1. For the most part, individual courses are offered in either Term 1 or Term 2, not both. Check the current year's course offerings -- core courses do not often shift terms from one year to another, however this does not hold true for electives which can change terms each year.
2. **If you are trying to lighten a term, always remove the complementary studies or technical elective courses first.** You are far more likely to have scheduling issues when you move core courses, and 400 level technical electives are more useful when taken towards the end of your degree.
3. Never, ever drop MECH 360. It's the prerequisite for everything. (Okay, not really – but close. Take it at your first opportunity).
4. If you are a Co-op student, try to avoid removing courses from your first academic term back from coop in third year (i.e. avoid moving the courses MECH 305, MECH 360, and MECH 375 that begin in January). If you need to lighten this term, speak to an advisor first.
5. Make sure you complete Mech 328 before your fourth year, and recall that 454/7/8/9 are full-year project courses (i.e. you must be in school Sept-April).
6. Watch out for prerequisites and corequisites (check the Academic Calendar). In particular:
 - The third-year design courses: 360 is a corequisite for 325 & 426
 - MECH 466 should be taken later in your degree as MECH 463 is its prerequisite.
7. Make sure you check your plan against any minimum credit load requirements you are subject to (student loans, scholarship eligibility, housing, medical insurance, etc.). Sometimes dropping your course load can affect your full-time status for these programs.
8. If you are on co-op, ensure your new schedule will meet the Co-op regulations. Talk to a Co-op advisor if you have questions.

Plot your courses out ahead of time, keeping the above in mind. Remember that even if courses will be offered, there is no guarantee that they won't conflict with each other. **Course times will vary from year to year, and the Faculty of Applied Science does not often allow course conflicts.** Courses that would be taken at the same time by a major "grouping" of students (eg, each STT) won't conflict, so try to group your courses so they more or less conform to a standard STT configuration.

After you do your own research, book an appointment with MECH advisor (log in to the PD portal at <https://pdportal.apsc.ubc.ca/students/student-login.htm> or email students@mech.ubc.ca) to review it. If you are on Co-op, you should also consult with a co-op coordinator.

First Year Advising and Registration Contacts External to MECH

First year curriculum, transfer credits, Complementary Studies courses, APSC courses:

Engineering Academic Services

KAIS 1100

604-822-6556

Via the “Contact Us” on <https://academic-services.engineering.ubc.ca/academic-advising/contact-us/>

BMEG courses

Email students@sbme.ubc.ca. Please include full name, student number, and course code (including section)

ELEC/CPEN courses

Register on to waitlists or email: registration@ece.ubc.ca Please include full name, student number, and course code (including section)

IGEN/MANU/MTRL courses

Email undergraduate@mtrl.ubc.ca. Please include full name, student number, and course code (including section)

MATH courses

Math asks that you continue to try registering online, or email ugradchair@math.ubc.ca. Please include full name, student number, and course code (including section)

CIVL courses

Complete the online course registration form: <https://www.civil.ubc.ca/webform/course-request-registration-form> Please include full name, student number, and course code (including section)

Other out-of-department courses

Contact the Department offering the course for instructions.

Need Help? Here's who to reach out to in MECH:

	Dr. Antony Hodgson ahodgson@mech.ubc.ca	Dr. Yusuf Altintas altintas@mech.ubc.ca	Dr. Antony Hodgson ahodgson@mech.ubc.ca	Dr. Kendal Bushe wkb@mech.ubc.ca	Dr. Patrick Kirchen pkirchen@mech.ubc.ca	Heather Gerrits heather@mech.ubc.ca	Sarah Clayton/ Saxon Bishop students@mech.ubc.ca
Course Planning & Schedule Changes						x	x
Registration Requests & Graduation Checks							x
Requests for Letters (not including references)							x
Personal Advising						x	x
Difficulties During Term						x	x
Career & Academic Plans	x	Mecha x	Biomed x	Aero x	Thermo x		
Technical Elective Approvals						x	x
Exchange Advising (+ Approvals)						x	x
Advising About Different MECH Options						x	x
Challenges related to Mental Health, Equity Diversity and Inclusion (EDI), or Non-Academic Misconduct						x	

Any of the advisors listed above are happy to talk to any student who wishes to see them, regardless of what area they specialize in. We encourage all students to speak to whomever they feel most comfortable approaching, particularly for personal matters. The advising team works together to ensure that every student receives the support they want/need. We can also refer you to other services on campus, ranging from the Writing Centre, to Health Services, to the Centre for Accessibility.

