

# MECHANICAL ENGINEERING PROGRAM CO-OP (MECH:C)

School of Engineering, College of Engineering and Physical Sciences

Mechanical Engineering at Guelph is built around concepts of sustainability and sustainable design to equip graduates to tackle issues associated with emerging technologies. Graduates in mechanical engineering are able to apply mathematical, scientific and engineering principles to a wide variety of fields and find employment across the private and public sectors. The program provides students with a common base of knowledge essential to mechanical engineering, and then allows them to select from a menu of electives to attain a degree of specialization in one of five areas, or to choose electives which broaden their general knowledge base. Elective concentrations are available in the areas of wind and solar energy, food and beverage engineering, mechatronics, manufacturing system design and biomechanics.

## Program Requirements

The Co-op program in Mechanical Engineering is a five year program, including five work terms. Students must follow the academic work schedule as outlined below (also found on the Co-operative Education website: <https://www.recruitguelph.ca/cecs/>).

Mechanical Engineering Academic and Co-op Work Term Schedule

Year	Fall	Winter	Summer
1	Academic Semester 1	Academic Semester 2	Off
2	Academic Semester 3 COOP*1100	Academic Semester 4	COOP*1000 Work Term I
3	Academic Semester 5	COOP*2000 Work Term II	COOP*3000 Work Term III
4	Academic Semester 6	Academic Semester 7	COOP*4000 Work Term IV
5	COOP*5000 Work Term V	Academic Semester 8	N/A

To be eligible to continue in the Co-op program, students must meet a minimum 70% cumulative average requirement after second semester, as well as meet all work term requirements. Please refer to the Co-operative Education program policy with respect to work term performance grading, work term report grading and program completion requirements.

For additional program information students should consult with their Co-op Co-ordinator and Co-op Faculty Advisor, listed on the Co-operative Education web site.

## Credit Summary

(26.00 Total Credits)

Code	Title	Credits
	Required Core Courses	17.25
MECH-1	Mechanical Engineering Electives	3.50
MECH-2	Mechanical Engineering Design Electives	0.75
	Complementary Studies Electives	2.00

Co-op Work Terms	2.50
<b>Total Credits</b>	<b>26</b>

The recommended program sequence is outlined below.

### Major (Honours Program)

Code	Title	Credits
<b>Semester 1 - Fall</b>		
CHEM*1040	General Chemistry I	0.50
CIS*1500	Introduction to Programming	0.50
ENGG*1100	Engineering and Design I	0.75
MATH*1200	Calculus I	0.50
PHYS*1130	Physics with Applications	0.50
<b>Semester 2 - Winter</b>		
ENGG*1210	Engineering Mechanics I	0.50
ENGG*1500	Engineering Analysis	0.50
MATH*1210	Calculus II	0.50
PHYS*1010	Introductory Electricity and Magnetism	0.50
	0.50 restricted electives	0.50
<b>Semester 3 - Fall</b>		
COOP*1100	Introduction to Co-operative Education	0.00
ENGG*1070	Occupational Health and Safety	0.25
ENGG*2100	Engineering and Design II	0.75
ENGG*2120	Material Science	0.50
ENGG*2160	Engineering Mechanics II	0.50
ENGG*2400	Engineering Systems Analysis	0.50
MATH*2270	Applied Differential Equations	0.50
<b>Semester 4 - Winter</b>		
ENGG*2180	Introduction to Manufacturing Processes	0.50
ENGG*2230	Fluid Mechanics	0.50
ENGG*2340	Kinematics and Dynamics	0.50
ENGG*2450	Electric Circuits	0.50
MATH*2130	Numerical Methods	0.50
STAT*2120	Probability and Statistics for Engineers	0.50
<b>Summer Semester</b>		
COOP*1000	Co-op Work Term I	0.50
<b>Semester 5 - Fall</b>		
ENGG*3240	Engineering Economics	0.50
ENGG*3260	Thermodynamics	0.50
ENGG*3280	Machine Design	0.75
ENGG*3510	Electromechanical Devices	0.50
HIST*1250	Science and Technology in a Global Context	0.50
	0.50 restricted electives	0.50
<b>Winter Semester</b>		
COOP*2000	Co-op Work Term II	0.50
<b>Summer Semester</b>		
COOP*3000	Co-op Work Term III	0.50
<b>Semester 6 - Fall</b>		
ENGG*3140	Mechanical Vibration	0.50
	2.50 restricted electives	2.50
<b>Semester 7 - Winter</b>		
ENGG*3100	Engineering and Design III	0.75

ENGG*3370	Applied Fluids and Thermodynamics	0.50
ENGG*3410	Systems and Control Theory	0.50
ENGG*3430	Heat and Mass Transfer	0.50
1.00 restricted electives		1.00
<b>Summer Semester</b>		
COOP*4000	Co-op Work Term IV	0.50
<b>Fall Semester</b>		
COOP*5000	Co-op Work Term V	0.50
ENGG*4000	Proposal for Engineering Design IV	0.00
<b>Semester 8 - Winter</b>		
ENGG*4160	Mechanical Engineering Design IV	1.00
1.75 restricted electives		1.75

## Restricted Electives

(see Program Guide for more information)

The Engineering Program requires Mechanical Engineering students to complete the following combination of elective credits to complete their program:

- 3.50 credits from the MECH-1 Mechanical Engineering electives
- 0.75 credits from the MECH-2 Mechanical Engineering design electives
- 2.00 credits from Complementary Studies electives

Consult the Program Guide for further information on the prerequisite requirements specific to each elective. Students can take a maximum of 1.50 credits at the 1000 level from the above list of electives.