

**Recommended Course Sequence**  
**Industrial Engineering (Co-op)**  
**2024-2025 Academic Year**

	SUMMER /1	FALL /2	WINTER /4
<b>YEAR 1</b>		<b>ENGR 213 Applied Ord. Differential Eq. (3.00)</b> The following course must be completed previously or concurrently: MATH 204 (Cegep Mathematics 105). The following course must be completed previously: MATH 205 (Cegep Mathematics 203).	<b>ACCO 220 Financial &amp; Managerial Acco. (3.00)</b> Prerequisite: none
		<b>INDU 211 Intro Prod &amp; Manufacturing Sys. (3.00)</b> Prerequisites: none.	<b>ENCS 282 Technical Writing &amp; Comm. (3.00)</b> Students must have satisfied the requirements in Section 71.20.7 Writing Skills Requirement, by passing the Engineering Writing Test (EWT) or by passing ENCS 272 with a grade of C- or higher, prior to enrolling.
		<b>MIAE 211 Mech. Engineering Drawing (3.50)</b> Prerequisites: none.	<b>ENGR 201 Professional Practice &amp; Resp. (1.50)</b> Prerequisites: none.
		<b>MIAE 215 Programming for Mech &amp; Indu Eng. (3.50)</b> The following course must be completed previously: MATH 204 (Cegep mathematics 105).	<b>ENGR 245 Mechanical Analysis (3.00)</b> The following course must be completed previously: PHYS 204. The following course must be completed previously or concurrently: ENGR 213.
		<b>MIAE 221 Materials Science (3.00)</b> The following course must be completed previously: CHEM 205 (Cegep Chemistry 101).	<b>MIAE 313 Machine Drawing and Design (3.50)</b> The following course must be completed previously: MECH 211 or MIAE 211.
<b>YEAR 2</b>	<b>ENGR 202 Sust. Dev. Enviro. Stewardship (1.50)</b> Prerequisites: none.	<b>WORK TERM 1</b>  <b>(You must complete 30 program credits, including ENCS 282 before your first work-term)</b>	<b>INDU 323 Operations Research I (3.50)</b> The following course must be completed previously: ENGR 213, ENGR 233; INDU 211.
	<b>ENGR 233 Applied Advanced Calculus (3.00)</b> The following course must be completed previously: MATH 204 (Cegep Mathematics 105); MATH 205 (Cegep Mathematics 203).		<b>INDU 371 Stochastic Models in Indu. Engr (3.00)</b> The following course must be completed previously: ENGR 371.
	<b>ENGR 251 Thermodynamics I (3.00)</b> The following course must be completed previously: MATH 203 (Cegep Mathematics 103).		<b>INDU 372 Quality Control and Reliability (3.00)</b> The following course must be completed previously: ENGR 371.
	<b>ENGR 371 Probability &amp; Stats in Eng. (3.00)</b> The following courses must be completed previously: ENGR 213, ENGR 233.		<b>INDU 411 Comp. Integrated Manufac. (3.50)</b> The following course must be completed previously: MECH 311 or MIAE 311. The following course must be completed previously or concurrently: MIAE 312.
	<b>MIAE 311 Manufacturing Processes (3.00)</b> The following course must be completed previously: MECH 313 or MIAE 313.		<b>MIAE 380 Product Design &amp; Development (3.00)</b> The following course must be completed previously: MECH 211 or MIAE 211. The following course must be completed previously or concurrently: ENCS 282.
	<b>MIAE 312 EDML Lab (1.00)</b> The following course must be completed previously or concurrently: MIAE 311.		
<b>YEAR 3</b>	<b>ENGR 301 Engr. Manage. Principles Econ (3.00)</b> Prerequisites: none.	<b>INDU 311 Simulation of Industrial Systems (3.50)</b> The following course must be completed previously: ENGR 371.	<b>WORK TERM 2</b>
	<b>ENGR 311 Transform Calc. &amp; Partial Diff. Eq. (3.00)</b> The following courses must be completed previously: ENGR 213, ENGR 233.	<b>INDU 320 Production Engineering (3.00)</b> The following course must be completed previously: INDU 323.	
	<b>ENGR 391 Numerical Methods in Engr. (3.00)</b> The following courses must be completed previously: ENGR 213, ENGR 233; COMP 248 or COEN 243 or MECH 215 or MIAE 215 or BCEE 231.	<b>INDU 324 Operations Research II (3.50)</b> The following course must be completed previously: INDU 323.	
	<b>ENGR 392 Impact of Technology on Society (3.00)</b> The following courses must be completed previously: ENCS 282; ENGR 201, ENGR 202.	<b>INDU 330 Engineering Management (3.00)</b> The following course must be completed previously or concurrently: ENCS 282. The following course must be completed previously: ENGR 301.	
	<b>INDU 412 Human Factors Engineering (3.50)</b> The following course must be completed previously: ENGR 371.		
<b>YEAR 4</b>	<b>WORK TERM 3</b>	<b>INDU 421 Facilities &amp; Material Handling (3.50)</b> The following course must be completed previously or concurrently: INDU 311. The following course must be completed previously: INDU 320.	<b>INDU 321 Lean Manufacturing (3.00)</b> The following course must be completed previously: INDU 320.
		<b>INDU 423 Inventory Control (3.50)</b> The following course must be completed previously: INDU 320.	<b>INDU 342 Logistics Network Models (3.00)</b> The following course must be completed previously: INDU 324.
		<b>Technical Electives (Undergraduate Calendar, Sec. 71.40.1)</b> Review your advisement report for the number of credits required. Speak with your Undergraduate Program Assistant if you have any further questions.	
		<b>INDU 490 Capstone Industrial Engineering Design Project (6.00)</b> The following courses must be completed previously: ENGR 301; MIAE 380. The following courses must be completed previously or concurrently: INDU 421. Students must complete 75 credits in the program prior to enrolling.	

DETAILED COURSE INFORMATION  
Industrial Engineering 2024-25

COURSE	TITLE	CREDIT	PRE-REQUISITE	CO-REQUISITE	SUM 1	SUM 2	FALL	WIN
ACCO 220	Financial and Managerial Accounting	3.00						X
BSTA 478	Data Mining Techniques	3.00	Permission from JMSB					X
BTM 480	Project Management	3.00	Permission from JMSB					X
ENCS 282	Technical Writing and Communication	3.00	Passing the Engineering Writing Test (EWT) or ENCS 272 with a grade of C- or higher.		X	X	X	X
ENGR 201	Professional Practice and Responsibility	1.50			X		X	X
ENGR 202	Sustainable Development and Environmental Stewardship	1.50			X		X	X
ENGR 213	Applied Ordinary Differential Equations	3.00	MATH 205 (Cegep Mathematics 203)	MATH 204 (Cegep Mathematics 105)	X		X	X
ENGR 233	Applied Advanced Calculus	3.00	MATH 204 (Cegep Mathematics 105); MATH 205 (Cegep Mathematics 203)		X	X	X	X
ENGR 245	Mechanical Analysis	3.00	PHYS 204	ENGR 213	X			X
ENGR 251	Thermodynamics I	3.00	MATH 203		X	X	X	X
ENGR 301	Engineering Management Principles and Economics	3.00			X	X	X	X
ENGR 311	Transform Calculus and Partial Differential Equations	3.00	ENGR 213, ENGR 233		X	X	X	X
ENGR 371	Probability and Statistics in Engineering	3.00	ENGR 213, ENGR 233		X	X	X	X
ENGR 391	Numerical Methods in Engineering	3.00	ENGR 213, ENGR 233; COMP 248 or COEN 243 or MECH 215 or MIAE 215 or BCEE 231			EC	EC	EC
ENGR 392	Impact of Technology on Society	3.00	ENCS 282; ENGR 201, ENGR 202		X	X	X	X
ENGR 411	Special Technical Report	1.00	ENCS 282. Permission of the Department is required.		X		X	X
ENGR 412	Honours Research Project	3.00	ENCS 282; 75cr in the BEng program, a CGPA of 3.00 or better. Permission of the Dept.		X		X	X
INDU 211	Introduction to Production and Manufacturing Systems	3.00					X	
INDU 311	Simulation of Industrial Systems	3.50	ENGR 371				X	
INDU 320	Production Engineering	3.00	INDU 323				X	
INDU 321	Lean Manufacturing	3.00	INDU 320					X
INDU 323	Operations Research I	3.50	ENGR 213, ENGR 233; INDU 211		X			X
INDU 324	Operations Research II	3.50	INDU 323				X	
INDU 330	Engineering Management	3.00	ENCS 282	ENGR 301			X	
INDU 342	Logistics Network Models	3.00	INDU 324					X
INDU 371	Stochastic Models in Industrial Engineering	3.00	ENGR 371					X
INDU 372	Quality Control and Reliability	3.00	ENGR 371					X
INDU 410	Safety Engineering	3.00	MECH 311 or MIAE 311	MIAE 312			X	
INDU 411	Computer Integrated Manufacturing	3.50	MECH 311 or MIAE 311	MIAE 312				X
INDU 412	Human Factors Engineering	3.50	ENGR 371				X	
INDU 421	Facilities Design and Material Handling Systems	3.50	INDU 320	INDU 311			X	
INDU 423	Inventory Control	3.50	INDU 320				X	
INDU 424	Introduction to Enterprise Resource Planning	3.00	INDU 320					X
INDU 431	Quantitative Methods in Health-care Systems	3.00						X
INDU 441	Introduction to Six Sigma	3.00	INDU 372			X		X
INDU 466	Decision Models in Service Sector	3.00	ENGR 371; INDU 320					X
INDU 475	Advanced Concepts in Quality Improvement	3.00	INDU 372				X	
INDU 480	Cases in Industrial Engineering	3.00	INDU 311, INDU 324					X
INDU 490	Capstone Industrial Engineering Design Project	6.00	ENGR 301; MIAE 380. Students must complete 75cr in the program prior to enrolling.	INDU 421			X	
INDU 498	Topics in Industrial Engineering	3.00	Permission of the Department is required.		N/A	N/A	N/A	N/A
MANA 300	Entrepreneurship: Launching Your Business	3.00					X	X
MIAE 211	Mechanical Engineering Drawing	3.50			X		X	X
MIAE 215	Programming for Mechanical and Industrial Engineers	3.50	MATH 204 (Cegep mathematics 105)			X	X	X
MIAE 221	Materials Science	3.00	CHEM 205 (Cegep Chemistry 101)				X	X
MIAE 311	Manufacturing Processes	3.00	MECH 313 or MIAE 313		X		X	
MIAE 312	Engineering Design and Manufacturing Processes Lab	1.00		MIAE 311	X**		X	
MIAE 313	Machine Drawing and Design	3.50	MECH 211 or MIAE 211				X	X
MIAE 380	Product Design and Development	3.00	MECH 211 or MIAE 211	ENCS 282			X	X

Note: In the case of discrepancies between this and the current Undergraduate Calendar, please contact your Undergraduate Program Assistant for clarification.  
This information was compiled March 2024.

\*AERO 417 reserved for AERO students  
\*\*MIAE 312 reserved for Co-op students