

Recommended Course Sequence
Industrial Engineering (January Entry)
2024-2025 Academic Year

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