

Bachelor of Engineering, Chemical Engineering Co-op Student Path			
	Summer Term	Fall Term	Winter Term
Year 0 16.5 credits			ENGR 201 Professional Practice and Responsibility (1.5) ENGR 213 Applied Ordinary Differential Equations (3) <i>Pre/Co: MATH 204, Pre: MATH 205</i> ENGR 245 Mechanical Analysis (3) <i>Pre: PHYS 204, Pre/Co: ENGR 213</i> ENGR 251 Thermodynamics I (3) Pre: MATH 203 CHME 200 Introduction to Chemical Process Engineering (3) CHME 214 Applied Linear Algebra (3) <i>Pre: MATH 204, MATH 205</i> Winter: 16.5 credits
Year 1 37 credits	ENGR 233 Applied Advanced Calculus (3) <i>Pre: MATH 204, or MATH 205</i> <i>Summer 1</i> ENCS 282 Technical Writing and Communication (3) <i>Pre: EWT or ENCS 272</i> <i>Summer 1 or 2</i> ENGR 311 Transform Calculus & Partial Differential Equations (3) <i>Pre: ENGR 213, ENGR 233</i> <i>Summer 2</i> Summer: 9 credits	MIAE 221 Materials Science (3) ENGR 361 Fluid Mechanics I (3) <i>Pre: ENGR 213, ENGR 233, ENGR 251</i> CHME 215 Programming for Chemical and Materials Engineers (3.5) CHME 220 Material Properties and Chemical Characterization (3) <i>Co: MIAE 221</i> CHME 351 Chemical Engineering Thermodynamics (3) <i>Pre: ENGR 251, Co: ENGR 311</i> Fall: 15.5 credits	ENGR 202 Sustainable Development & Environmental Stewardship (1.5) CHEM 221 Organic Chemistry (3) <i>Pre: CHEM 205, CHEM 206</i> CHME 201 Innovative, Sustainable, and Safe Manufacturing in Chemical Industry (3) <i>Pre: ENGR 251, CHME 220</i> CHME 216 Advanced Programming for Chemical Engineers (3.5) <i>Pre: CHME 215 or equivalent</i> CHME 240 Chemical Engineering Lab I (1.5) <i>Pre: CHME 200, CHME 351, Co: ENGR 361</i> Winter: 12.5 credits
Year 2 24 credits	ENGR 301 Engineering Management Principles & Economics (3) <i>Summer 1 or 2</i> ENGR 371 Probability and Statistics in Engineering (3) <i>Pre: ENGR 213, ENGR 233</i> <i>Summer 1 or 2</i> ENGR 392 Impact of Technology on Society (3) <i>Pre: ENCS 282, ENGR 201, ENGR 202</i> <i>Summer 1 or 2</i> General Education Elective Course (3) <i>Summer 1 or 2</i> Summer: 12 credits	Work Term 1	ENGR 391 Numerical Methods in Engineering (3) <i>Pre: ENGR 213, ENGR 233, COMP 248 or COEN 243 or MECH 215 or MIAE 215 or BCEE 231.</i> CHME 301 Chemical Reaction Engineering (3) <i>Pre: CHME 200, CHME 351</i> CHME 320 Technical and Advanced Materials (3) <i>Pre: CHME 220</i> CHME 360 Heat Transfer (3) <i>Pre: CHME 351, ENGR 311</i> Winter: 12 credits
Year 3 25.5 credits	CHME 321 Chemical and Materials Product Design (3) <i>Pre: CHME 320</i> <i>Summer 1</i> CHME 361 Mass Transfer and Unit Operations (3) <i>Pre: CHME 360</i> <i>Summer 1</i> CHME 470 Biochemical Engineering (3) <i>Pre: CHME 301</i> <i>Summer 1</i> Technical Elective Course (3) <i>Summer 1 or 2</i> Summer: 12 credits	CHME 300 Industrial and Engineering Chemistry (3) <i>Pre: CHME 200</i> CHME 330 Chemical Process Dynamics and Control (3) <i>Pre: ENGR 311, CHME 301, CHME 361</i> CHME 340 Chemical Engineering Lab II (1.5) <i>Pre: CHME 240, CHME 301, CHME 361</i> CHME 362 Chemical Separations Engineering (3) <i>Pre: CHME 361</i> CHME 390 Design Project (3) <i>Pre: CHME 201, CHME 301, CHME 321</i> <i>Co: ENGR 301, CHME 330, CHME 362</i> Fall: 13.5 credits	Work Term 2
Year 4 17 credits	Work Term 3	CHME 490 Capstone Chemical Process Design (3) <i>Pre: CHME 390</i> CHME 316 Advanced Data Analysis and Machine Learning for Chemical Engineers (3.5) <i>Pre: CHME 216, ENGR 371, ENGR 391</i> CHME 415 Computational Modelling for Chemical Engineers (3) <i>Pre: CHEM 205, CHME 351, ENGR 391</i> CHME 440 Chemical Engineering Lab III (1.5) <i>Pre: CHME 330, CHME 340, CHME 362</i> CHME 352 Energy Conversion and Storage (3) <i>Pre: CHME 351</i> Fall: 14 credits	CHME 490 Capstone Chemical Process Design (3) <i>Pre: CHME 390</i> Winter: 3 credits

Engineering Core Course

24 credits
9 Courses

CHME Core Course

84 Credits
28 Courses

Technical Elective Course

9 Credits
3 Courses

**General Education Elective
Course**

3 Credits
1 Courses

Spanned Course over two
terms

6 Credits
1 Courses

Prerequisites and corequisites: a prerequisite is a specific course students need to take before another course. A co-requisite is when a specific course must be taken in the same academic term as another course unless students have already successfully completed it.

Pre= Prerequisite
Course
Co= Corequisite Course

Total Program Credits: 120
Total No. of Courses: 41