Université Concordia University

GINA CODY SCHOOL OF ENGINEERING AND COMPUTER SCIENCE

Department of Chemical and Materials Engineering

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

Bachelor of Engineering, Chemical Engineering
Winter 2026 cohort - Curriculum Structure

Year 1

Winter Term

ENGR 201 Professional practice and responsibility (1.5)

ENGR 213 Applied Ordinary Differential Equations (3)
Pre/Co: MATH 204, Pre: MATH 205

ENGR 245 Mechanical analysis (3)
Pre: PHYS 204 Pre/Co: ENGR 213

ENGR 251 Thermodynamics I (3)
Pre: MATH 203

CHME 200 Introduction to Chemical Process Engineering (3)

CHME 214 Applied Linear Algebra (3)
Pre: MATH 204, and MATH 205

Fall: 16.5 credits

Summer Term

ENGR 202 Sustainable development & Environmental Stewardship (1.5)

ENGR 233 Applied Advanced Calculus (3)
Pre: MATH 204, or MATH 205

ENGR 311 Transform Calculus & Partial Differential Equations (3)
Pre: ENGR 213, ENGR 233

ENGR 371 Probability and Statistics in Engineering (3)
Pre: ENGR 213, ENGR 233

ENCS 282 Technical Writing and Communication (3)
Pre: EWT or ENCS 272

Winter: 13.5 credits

Year 1: 30.5 credits

Year 2

Fall Term

MIAE 221 Materials Science (3)

ENGR 361 Fluid Mechanics I (3)
Pre: ENGR 213, ENGR 233, ENGR 251

CHME 215 Programming for Chemical and Materials Engineers (3.5)

CHME 220 Material Properties and Chemical Characterization (3)
Co: MIAE 221

CHME 351 Chemical Engineering Thermodynamics (3)
Pre: ENGR 251 Co: ENGR 311

Fall: 15.5 credits

Winter Term

CHME 201 Innovative, Sustainable, and Safe Manufacturing in Chemical Industry (3)
Pre: ENGR 251, CHME 220

CHME 216 Advanced programming for chemical engineers (3.5)
Pre: CHME 215 or equivalent

***CHME 301** Chemical Reaction Engineering (3)*
Pre: CHME 200, CHME 351

CHME 320 Technical and Advanced Materials (3)
Pre: CHME 220

CHME 360 Heat Transfer (3)
Pre: CHME 351, ENGR 311

Winter: 15.5 credits

Year 2: 31 credits

Year 3

Fall Term

CHEM 221 Organic Chemistry (3)
Pre: CHEM 205, CHEM 206

ENGR 391 Numerical methods in Engineering (3)
Pre: ENGR 213, ENGR 233, COMP 248 or COEN 243 or MECH 215 or MIAE 215 or BCEE 231.

CHME 300 Industrial and Engineering Chemistry (3)
Pre: CHME 200

CHME 321 Chemical and Materials Product design (3)
Pre: CHME 320

CHME 361 Mass Transfer and Unit Operations (3)
Pre: CHME 360

CHME 240 Chemical Engineering Lab I (1.5)
Pre: CHME 200, CHME 351 Co: ENGR 361

Fall: 16.5 credits

Winter Term

ENGR 301 Engineering Management Principles & Economics (3)

CHME 330 Chemical Process Dynamics and Control (3)
Pre: ENGR 311, CHME 301, CHME 361

CHME 340 Chemical Engineering Lab II (1.5)
Pre: CHME 240, CHME 301, CHME 361

CHME 362 Chemical Separations Engineering (3)
Pre: CHME 361

CHME 390 Design project (3)
Pre: CHME 201, CHME 301, CHME 321
Co: ENGR 301, CHME 330, CHME 362

CHME 470 Biochemical Engineering (3)
Pre: CHME 301

Winter: 16.5 credits

Year 3: 33 credits

Year 4

Fall Term

CHME 316 Advanced data analysis and machine learning for chemical engineers (3.5)
Pre: CHME 216, ENGR 371, ENGR 391

CHME 352 Energy Conversion and Storage (3)
Pre: CHME 351

CHME 415 Computational Modelling for Chemical Engineers (3)
Pre: CHEM 205, CHME 351, ENGR 391

CHME 440 Chemical Engineering Lab III (1.5)
Pre: CHME 330, CHME 340, CHME 362

CHME 490 Capstone Chemical Process Design (3)
Pre: CHME 390

Fall: 14 credits

Winter Term

ENGR 392 Impact of Technology on Society (3)
Pre: ENCS 282, ENGR 201, ENGR 202

CHME 490 Capstone Chemical Process Design (3)
Pre: CHME 390

General Education Elective Course (3)

Technical Elective Course (3)

Winter: 12 credits

Year 4: 26 credits

Engineering Core Course	CHME Core Course	Technical Elective Course	General Education Elective Course	Spanned Course over two terms
24 credits 9 Courses	90 Credits 30 Courses	3 Credits 1 Courses	3 Credits 1 Courses	6 Credits 1 Courses

Pre= Prerequisite Course
Co= Corequisite Course

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.