

PROJECTED STUDENT PATHWAY

YEAR 1: 31 CREDITS

Fall Term	Winter Term
15.5 credits	15.5 credits
ENGR 213 Applied Ordinary Differential Equations (3) Pre/Co: MATH 204 Pre: MATH 205	ENCS 282 Technical Writing and Communication (3) Pre: EWT or ENCS 272
MIAE 221 Materials Science (3)	ENGR 233 Applied Advanced Calculus (3) Pre: MATH 204, or MATH 205
CHME 200 Introduction to Chemical Process Engineering (3)	ENGR 251 Thermodynamics I (3) Pre: MATH 203
CHME 214 Applied Linear Algebra For Chemical Engineers (3) Pre: MATH 204, and MATH 205	CHME 216 Advanced Programming for Chemical Engineers (3.5) Pre: CHME 215 or equivalent
CHME 215 Programming for Chemical and Materials Engineers (3.5)	CHME 220 Material Properties and Chemical Characterization (3) Co: MIAE 221

YEAR 2: 31.5 CREDITS

Fall Term	Winter Term
16.5 credits	15 credits
ENGR 202 Sustainable Development & Environmental Stewardship (1.5)	ENGR 201 Professional Practice and Responsibility (1.5)
ENGR 245 Mechanical Analysis (3) Pre: PHYS 204 Pre/Co: ENGR 213	CHME 201 Innovative, Sustainable, and Safe Manufacturing in Chemical Industry (3) Pre: ENGR 251, CHME 220
ENGR 311 Transform Calculus & Partial Differential Equations (3) Pre: ENGR 213, ENGR 233	CHME 240 Chemical Engineering Lab (1.5) Pre: CHME 200, CHME 351 Co: ENGR 361
ENGR 361 Fluid Mechanics I (3) Pre: ENGR 213, ENGR 233, ENGR 251	CHME 301 Chemical Reaction Engineering (3) Pre: CHME 200, CHME 351
CHEM 221 Organic Chemistry (3) Pre: CHEM 205, CHEM 206	CHME 320 Technical and Advanced Materials (3) Pre: CHME 220
CHME 351 Chemical Engineering Thermodynamics (3) Pre: ENGR 251 Co: ENGR 311	CHME 360 Heat Transfer (3) Pre: CHME 351, ENGR 311

YEAR 3: 31.5 CREDITS

Fall Term	Winter Term
15 credits	16.5 credits
ENGR 371 Probability and Statistics in Engineering (3) Pre: ENGR 213, ENGR 233	ENGR 301 Engineering Management Principles & Economics (3)
CHME 300 Industrial and Engineering Chemistry (3) Pre: CHME 200	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 321 Chemical and Materials Product Design (3) Pre: CHME 320	CHME 330 Chemical Process Dynamics and Control (3) Pre: ENGR 311, CHME 301, CHME 361
CHME 361 Mass Transfer and Unit Operations (3) Pre: CHME 360	CHME 340 Chemical Engineering Lab II (1.5) Pre: CHME 240, CHME 301, CHME 361
CHME 470 Biochemical Engineering (3) Pre: CHME 301, CHME 362	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

YEAR 4: 26 CREDITS

Fall Term	Winter Term
14 credits	12 credits
CHME 316 Advanced data analysis and machine learning for chemical engineers (3.5) Pre: CHME 216, ENGR 371, ENGR 391	ENGR 392 Impact of Technology on Society (3) Pre: ENCS 282, ENGR 201, ENGR 202
CHME 352 Energy Conversion and Storage (3) Pre: CHME 351	CHME 490 Capstone Chemical Process Design (3) Pre: CHME 390
CHME 415 Computational Modelling for Chemical Engineers (3) Pre: CHEM 205, CHME 351, ENGR 391	General Education Elective Course (3)
CHME 440 Chemical Engineering Lab III (1.5) Pre: CHME 330, CHME 340, CHME 362	Technical Elective Course (3)
CHME 490 Capstone Chemical Process Design (3) Pre: CHME 390	

COLOUR LEGEND & ABBREVIATIONS

Prerequisite (Pre):

A course that must be successfully completed before enrolling in another course.

Corequisite (Co):

A course that must be taken at the same time as another course unless it has already been completed.

CHME Core Courses 90 credits 30 courses	ENGR Core Courses 24 credits 9 courses	Technical Elective Course 3 credits 1 course	General Education Elective Course 3 credits 1 course	Course spanned over two terms 6 credits 1 course
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PROJECTED CO-OP STUDENT PATHWAY

Year	Summer	Fall	Winter
1		Study	Study
2	Study	Work 1	Study
3	Study	Study	Work 2
4	Work 3	Study (Capstone)	Study (Capstone)

TECHNICAL ELECTIVE TOPICS

SUSTAINABLE CHEMICAL ENGINEERING
 MATERIALS ENGINEERING
 DATA ANALYTICS FOR CHEMICAL ENGINEERS
 BIOCHEMICAL & FOOD ENGINEERING
 BIOMOLECULAR MODELLING & DRUG DESIGN
 ADVANCED PROCESS DESIGN & CONTROL
 ADVANCED TOPICS IN CHEMICAL ENGINEERING