PROJECTED STUDENT PATHWAY

YEAR 1: 31 CREDITS

Fall Term — 15.5 credits

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

MIAE 221
Materials Science (3)
Section Y

CHME 200
Introduction to Chemical Process Engineering (3)
Pre: MATH 203, MATH 205

CHME 214
Applied Linear Algebra For Chemical Engineers (3)
Pre: MATH 204, MATH 205

CHME 215
Programming for Chemical and Materials Engineers (3.5)
Pre: MATH 204

Winter Term — 15.5 credits

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

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

ENGR 251
Thermodynamics I (3)
Pre: MATH 203

CHME 216
Advanced Programming for Chemical Engineers (3.5)
Pre: CHME 215 or equivalent

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

YEAR 2: 31.5 CREDITS

Fall Term — 16.5 credits

ENGR 202
Sustainable Development & Environmental Stewardship (1.5)

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

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

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

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

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

Winter Term — 15 credits

ENGR 201
Professional Practice and Responsibility (1.5)

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

CHME 240
Chemical Engineering Lab (1.5)
Pre: CHME 200, CHME 214, CHME 351, ENGR 361

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

YEAR 3: 31.5 CREDITS

Fall Term — 15 credits

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

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 470
Biochemical Engineering (3)
Pre: CHME 301, CHME 362

Winter Term — 16.5 credits

ENGR 301
Engineering Management Principles & Economics (3)

ENGR 391
Numerical Methods in Engineering (3)
Pre: ENGR 213, ENGR 233, CHME 215 or equivalent

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

YEAR 4: 26 CREDITS

Fall Term — 14 credits

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

Winter Term — 12 credits

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)

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	ENGR Core Courses	Technical Elective Course	General Education Elective Course	Course spanned over two terms
90 credits 30 courses	24 credits 9 courses	3 credits 1 course	3 credits 1 course	6 credits 1 course

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

WINTER TERM COHORT: PROJECTED STUDENT PATHWAY

YEAR 1: 30 CREDITS

Winter Term — 16.5 credits

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)
Pre: MATH 203, MATH 205

CHME 214
Applied Linear Algebra For Chemical Engineers (3)
Pre: MATH 204, MATH 205

Summer Term — 13.5 credits

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

YEAR 2: 32.5 CREDITS

Fall Term — 15.5 credits

MIAE 221
Materials Science (3)
Section Y

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

CHME 215
Programming for Chemical and Materials Engineers (3.5)
Pre: MATH 204

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

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

Winter Term — 17 credits

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 240
Chemical Engineering Lab (1.5)
Pre: CHME 200, CHME 214, CHME 351, ENGR 361

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

YEAR 3: 31.5 CREDITS

Fall Term — 15 credits

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

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 470
Biochemical Engineering (3)
Pre: CHME 301

Winter Term — 16.5 credits

ENGR 301
Engineering Management Principles & Economics (3)

ENGR 391
Numerical Methods in Engineering (3)
Pre: ENGR 213, ENGR 233, CHME 215 or equivalent

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

YEAR 4: 26 CREDITS

Fall Term — 14 credits

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

Winter Term — 12 credits

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

Technical Elective
Course (3)

General Education Elective
Course (3)

COLOUR LEGEND

CHME Core Courses	ENGR Core Courses	Technical Elective Course	General Education Elective Course	Course spanned over two terms
90 credits 30 courses	24 credits 9 courses	3 credits 1 course	3 credits 1 course	6 credits 1 course

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.

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