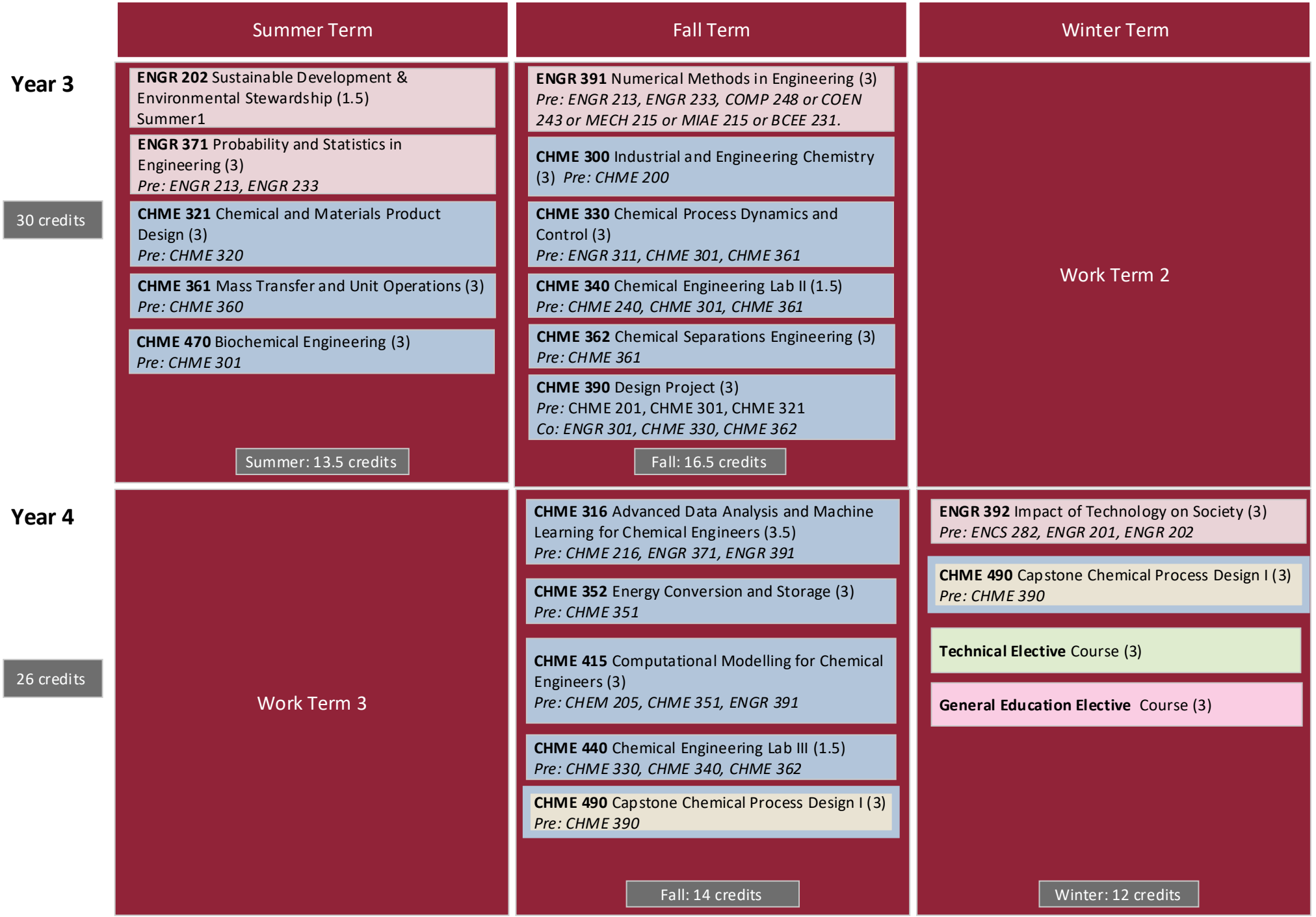
Bachelor of Engineering, Chemical Engineering Co-op Student Path

	Summer Term	Fall Term	Winter Term
Year 1		**ENGR 213** Applied Ordinary Differential Equations (3) *Pre/Co: MATH 204, Pre: MATH 205*	**ENGR 233** Applied Advanced Calculus (3) *Pre: MATH 204, or MATH 205*
		CHME 200 Introduction to Chemical Process Engineering (3)	**CHEM 221** Organic Chemistry (3) *Pre: CHEM 205, CHEM 206*
32.5 credits		**CHME 215** Programming for Chemical and Materials Engineers (3.5)	**CHME 216** Advanced Programming for Chemical Engineers (3.5) *Pre: CHME 215 or equivalent*
		MIAE 221 Materials Science (3)	**CHME 220** Material Properties and Chemical Characterization (3) *Co: MIAE 221*
		CHME 214 Applied Linear Algebra (3) *Pre: MATH 204, MATH 205*	**ENGR 251** Thermodynamics I (3) Pre: MATH 203
		ENGR 201 Professional Practice and Responsibility (1.5) Summer 1	
		Fall: 17 credits	Winter: 15.5 credits
Year 2	**ENGR 361** Fluid Mechanics I (3) Summer 1 *Pre: ENGR 213, ENGR 233, ENGR 251*	Work Term 1	**ENGR 245** Mechanical Analysis (3) *Pre: PHYS 204, Pre/Co: ENGR 213*
	ENCS 282 Technical Writing and Communication (3) *Pre: EWT or ENCS 272*		**CHME 240** Chemical Engineering Lab I (1.5) *Pre: CHME 200, CHME 351, Co: ENGR 361*
31.5 credits	**CHME 351** Chemical Engineering Thermodynamics (3) *Pre: ENGR 251, Co: ENGR 311*		**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 301*** *Chemical Reaction Engineering (3)* *Pre: CHME 200, CHME 351*
	ENGR 301 Engineering Management Principles & Economics (3)		**CHME 320** Technical and Advanced Materials (3) *Pre: CHME 220*
			CHME 360 Heat Transfer (3) *Pre: CHME 351, ENGR 311*
	Summer: 15 credits		Winter: 16.5 credits


Summer Term
Fall Term
Winter Term
Year 3
30 credits
ENGR 202 Sustainable Development & Environmental Stewardship (1.5) Summer1
ENGR 371 Probability and Statistics in Engineering (3)
Pre: ENGR 213, ENGR 233
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
Summer: 13.5 credits
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 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
Fall: 16.5 credits
Work Term 2
Year 4
26 credits
Work Term 3
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 I (3)
Pre: CHME 390
Fall: 14 credits
ENGR 392 Impact of Technology on Society (3)
Pre: ENCS 282, ENGR 201, ENGR 202
CHME 490 Capstone Chemical Process Design I (3)
Pre: CHME 390
Technical Elective Course (3)
General Education Elective Course (3)
Winter: 12 credits

Engineering Core Course	**CHME Core Course**	**Technical Elective Course**	**General Education Elective Course**	**Spanned Course** over two terms
24 credits 9 Courses	84 Credits 28 Courses	9 Credits 3 Courses	3 Credits 1 Courses	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