

**BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING**  
**CO-OPERATIVE EDUCATION OPTION #1**

FALL SEMESTER YEAR 1	Credits	SPRING SEMESTER YEAR 1	Credits
CHEM 1035 General Chemistry <i>Pre: None</i>	3	CHEM 1036 General Chemistry <i>Pre: None</i>	3
CHEM 1045 General Chemistry Lab <i>Co: CHEM 1035</i>	1	CHEM 1046 General Chemistry Lab <i>Co: CHEM 1036</i>	1
ENGL 1105 First-Year Writing <i>Pre: None</i>	3	ENGL 1106 First-Year Writing <i>Pre: ENGL 1105</i>	3
MATH 1225 Calculus of a Single Variable <i>Pre: Math Ready</i>	4	MATH 1226 Calculus of a Single Variable <i>Pre: MATH 1225</i>	4
ENGE 1215 Foundations of Engineering (C-) <i>Co: MATH 1225</i>	2	PHYS 2305 Found of Physics I w/lab <i>Pre: MATH 1225; Co: MATH 1226</i>	4
CLE (Area 2, 3, or 7)	3	ENGE 1216 Foundations of Engineering (C-) <i>Pre: ENGE 1215</i>	2
<b>TOTAL</b>	<b>16</b>	<b>TOTAL</b>	<b>17</b>

FALL SEMESTER YEAR 2	Credits	SPRING SEMESTER YEAR 2
CHEM 2535 Organic Chemistry <i>Pre: CHEM 1036 -OR- CHEM 2565 Principles of Organic Chem Pre: CHEM 1036</i>	3 <sup>[F, SII]</sup> or <sup>[F]</sup>	<b>Co-operative Education Term #1</b>
CHEM 2545 Organic Chemistry Lab <i>Pre: CHEM 1046; Co: CHEM 2535</i>	1 <sup>[F, SII]</sup>	
MATH 2204 Intro to Multivariable Calculus <i>Pre: MATH 1226</i>	3	
CHE 2114 Mass & Energy Balances (C-) <i>Pre: MATH 1226, CHEM 1036</i>	3 <sup>[F, S]</sup>	
PHYS 2306 Foundations of Physics I & Lab <i>Pre: PHYS 2305</i>	4	
MATH 1114 Elementary Linear Algebra <i>Pre: MATH 1225 or 1226</i>	2	
<b>TOTAL</b>	<b>16</b>	

FALL SEMESTER YEAR 3	Credits	SPRING SEMESTER YEAR 3
CHEM 2536 Organic Chemistry <i>Pre: CHEM 2535 or 2565 -OR- CHEM 2566 Principles of Organic Chem Pre: CHEM 2565</i>	3 <sup>[S, SII]</sup> or <sup>[S]</sup>	<b>Co-operative Education Term #2</b>
CLE (Area 6)	1	
CHEM 3615 Physical Chemistry <i>Pre: CHEM 1036, MATH 2204, PHYS 2306</i>	3 <sup>[F, SII]</sup>	
MATH 2214 Intro to Differential Eqns <i>Pre: MATH 1226, MATH 1114</i>	3	
ENGL 3764 Technical Writing	3	
CLE (Area 2, 3, or 7)	6	
<b>TOTAL</b>	<b>16</b>	

FALL SEMESTER YEAR 4	Credits	SPRING SEMESTER YEAR 4	Credits
MATH 4564 Operational Methods <i>Pre: MATH 2214</i>	3	CHE 2004 CHE Sophomore Seminar	1 <sup>[S]</sup>
CHE 2164 CHE Thermodynamics (C-) <i>Pre: 2114. Co: CHEM 3615</i>	3 <sup>[F, S]</sup>	CHE 2124 CHE Simulations (C-) <i>Pre: 2114, MATH 2204 Co: MATH 1114</i>	2 <sup>[S]</sup>
CHE 3114 Fluid Transport (C-) <i>Pre: 2114, PHYS 2305, MATH 2204; Co: MATH 4564</i>	3 <sup>[F, S]</sup>	CHE 3015 Process Measure & Control (C-) <i>Pre: MATH 4564; Co: 3184, 3044, 2124</i>	3 <sup>[S]</sup>
CHE 3134 Separation Processes (C-) <i>Pre: 2114; (2164 or CHEM 3615)</i>	3 <sup>[F, S]</sup>	CHE 3044 Heat Transfer (C-) <i>Pre: 2164, 3114, MATH 4564</i>	2 <sup>[S]</sup>
STAT 4604 Stats Methods for Engrs <i>Pre: MATH 1226 - OR- STAT 4705 Prob &amp; Stat for Engrs Pre: MATH 2204</i>	3	CHE 3144 Mass Transfer (C-) <i>Pre: 2164, 3114, MATH 4564</i>	3 <sup>[S]</sup>
CLE (Area 2, 3, or 7)	3	CHE 3184 Chem Reactor Analysis & Des (C-) <i>Pre: 2164, MATH 2214; Co: 3144, 3044</i>	3 <sup>[S]</sup>
<b>TOTAL</b>	<b>18</b>	CHEM 3625 Physical Chemistry Lab <i>Pre: CHEM 3615</i>	1 <sup>[F, S, SII]</sup>
		<b>TOTAL</b>	<b>15</b>

SUMMER TERM I OR II	Credits
CHE 4014 CHE LABORATORY (C-) <i>PRE: 3015, 3044, 3134, 3144, 3184, ENGL 3764</i>	5 <sup>[S, SII]</sup>
<b>TOTAL</b>	<b>5</b>

FALL SEMESTER YEAR 5		Credits	SPRING SEMESTER YEAR 5		Credits
CHE 4185 Process & Plant Design (C-) <i>Pre: 4014</i>		4 <sup>[F]</sup>	CHE 4186 Process & Plant Design (C-) <i>Pre: 4185</i>		4 <sup>[S]</sup>
CHE 4104 Process Materials (C-) <i>Pre: 2164, (CHEM 2535 or CHEM 2565)</i>		3 <sup>[F]</sup>	CHE 4134 Chemical Process Modeling (C-) <i>Pre: 2124, 3114; Co: 3044, 3144, 3184</i>		2 <sup>[S]</sup>
			CHEM 2536 Organic Chemistry <i>Pre: CHEM 2535 or 2565</i>		3 <sup>[S, SII]</sup>
			<b>-OR-</b> CHEM 2566 Principles of Organic Chem <i>Pre: CHEM 2565</i>		or [S]
CLE (Area 2, 3, or 7)		3	CHEM 2546 Organic Chemistry Lab <i>Pre: CHEM 2536</i>		1 <sup>[S, SII]</sup>
Technical Elective		6	CLE (Area 6)		1
			Free Electives		6
		<b>TOTAL 16</b>			<b>TOTAL 17</b>