

## Specimen Curriculum for Chemical Engineering

*B.E. in Chemical Engineering with Minor in Engineering Management and Minor in Chemistry*

		Semester hours	
		FALL	SPRING
<b>SOPHOMORE YEAR</b>			
Chem 2221	Organic Chemistry	3	–
Chem 2221L	Organic Chemistry Laboratory	1	–
Chem 2222	Organic Chemistry	–	3
Chem 2222L	Organic Chemistry Laboratory	–	1
Math 2300	Multivariable Calculus	3	–
Math 2420	Methods of Ordinary Differential Equations	–	3
Physics 1602	General Physics II	3	–
Physics 1602L	General Physics Laboratory II	1	–
ChBE 2100	Chemical Process Principles	3	–
ChBE 2200	Chemical Engineering Thermodynamics	–	3
ChBE 2250	Modeling and Simulation in Chemical Engineering	–	3
ChBE 2900W	Technical Communications for Chemical Engineers	–	1
ENGM 2210	Technology Strategy	–	3
	Liberal Arts Core	3	–
		—	—
		17	17
<b>JUNIOR YEAR</b>			
Chem 3300*	Physical Chemistry: Quantum Mechanics	3	–
ChBE 2150 <sup>†</sup>	Molecular and Cell Biology for Engineers	3	–
ChBE 3200	Phase Equilibria and Stage-Based Separations	3	–
ChBE 3250	Chemical Reaction Engineering	–	3
ChBE 3300	Fluid Mechanics and Heat Transfer	3	–
ChBE 3350	Mass Transfer and Rate-Based Separations	–	3
ChBE 3900W	Chemical Engineering Laboratory I	–	3
ENGM 2440	Applied Behavioral Science	–	3
	Liberal Arts Core	–	3
		—	—
		15	15
<b>SENIOR YEAR</b>			
ChBE 3600	Chemical Process Control	3	–
ChBE 4900W	Chemical Engineering Laboratory II	3	–
ChBE 4950W	Chemical Engineering Process and Product Design	4	–
ChBE 4951W	Chemical Product Design Projects	–	3
ChBE 4959	Professional Practice of Safety in Chemical Eng Design	1	–
ENGM 3010	System Engineering	3	–
ENGM 3700	Program and Project Management	–	3
	Chemical and Biomolecular Engineering elective	3	3
	Engineering Management elective	–	3
	Liberal Arts Core	3	3
		—	—
		17	15

\*May be replaced by BSCI 2201 or BSC 2520 after completion of ChBE 2150 or BSCI 1510.

<sup>†</sup>May be replaced by BSCI 1510.

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
<b>General Chemistry Chem 1601</b> 3 hours	<b>General Chemistry Chem 1602</b> 3 hours	<b>Organic Chemistry Chem 2221</b> 3 hours	<b>Organic Chemistry Chem 2222</b> 3 hours	<b>Science Elective:</b> Chem 3300* or BSCI 2201‡ or BSC 2520‡ 3 hours	<b>Chemical Reactor Engineering ChBE 3250</b> 3 hours	<b>Chemical Process Control ChBE 3600</b> 3 hours	<b>Chemical Engineering Design Projects ChBE 4951W</b> 3 hours
<b>General Chemistry Laboratory Chem 1601L</b> 1 hour	<b>General Chemistry Laboratory Chem 1602L</b> 1 hour	<b>Organic Chemistry Laboratory Chem 2221L</b> 1 hour	<b>Organic Chemistry Laboratory Chem 2222L</b> 1 hour	<b>Molecular and Cell Biology for Engineers ChBE 2150</b> 3 hours	<b>Mass Transfer and Rate-based Separations ChBE 3350</b> 3 hours	<b>Chemical Engineering Laboratory II ChBE 4900W</b> 3 hours	<b>ChBE Elective</b> 3 hours
<b>Accelerated Single-Variable Calculus I Math 1300</b> 4 hours	<b>Accelerated Single-Variable Calculus II Math 1301</b> 4 hours	<b>Multivariable Calculus Math 2300</b> 3 hours	<b>Methods of Ordinary Differential Eqs Math 2420</b> 3 hours	<b>Phase Equilibria &amp; Staged-based Separations ChBE 3200</b> 3 hours	<b>Chemical Engineering Laboratory I ChBE 3900W</b> 3 hours	<b>Chemical Engineering Process and Product Design ChBE 4950W</b> 4 hours	<b>Program and Project Management ENGM 3700</b> 3 hours
<b>Introduction to Engineering ES 1401, 1402, 1403</b> 3 hours	<b>General Physics I Phys 1601</b> 3 hours	<b>General Physics II Phys 1602</b> 3 hours	<b>Chemical Engineering Thermodynamics ChBE 2200</b> 3 hours	<b>Fluid Mechanics &amp; Heat Transfer ChBE 3300</b> 3 hours	<b>ChBE Elective</b> 3 hours	<b>Professional Practice of Safety in ChE Design ChBE 4959</b> 1 hour	<b>Engineering Management Elective</b> 3 hours
<b>Liberal Arts Core Elective</b> 3 hours	<b>General Physics Laboratory I Phys 1601L</b> 1 hour	<b>General Physics Laboratory II Phys 1602L</b> 1 hour	<b>Modeling and Simulation in Chem Eng ChBE 2250</b> 3 hours	<b>Applied Behavioral Science ENGM 2440</b> 3 hours	<b>Liberal Arts Core Elective</b> 3 hours	<b>Systems Engineering ENGM 3010</b> 3 hours	<b>Liberal Arts Core Elective</b> 3 hours
	<b>Computer Science Course CS 1100, 1101, 1103, or 1104</b> 3 hours	<b>Chemical Process Principles ChBE 2100</b> 3 hours	<b>Technical Communications for Chemical Engineers ChBE 2900W</b> 1 hour			<b>Liberal Arts Core Elective</b> 3 hours	
		<b>Liberal Arts Core Elective</b> 3 hours	<b>Technology Strategy ENGM 2210</b> 3 hours				
14 hours	15 hours	17 hours	17 hours	15 hours	15 hours	17 hours	15 hours
<b>Total</b> <b>125 hours</b>				*Chem 3300 is preferred ‡Switch with an elective in a subsequent semester			