

## Specimen Curriculum for Chemical Engineering

*B.E. in Chemical Engineering with Minor in Materials Science and Engineering 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
	Liberal Arts Core	3	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
MSE 1500, 1500L	Materials Science I and Laboratory	–	4
	Chemical and Biomolecular Engineering elective‡	–	3
	Liberal Arts Core	3	–
		—	—
		15	16
<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	–
	Chemical and Biomolecular Engineering elective‡	–	3
MSE 2500	Materials Science II	3	–
	Technical elective	–	3
	Liberal Arts Core	–	6
	Open elective	2	–
		—	—
		16	15

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

<sup>‡</sup>Selected from ChBE 4840, 4850, 4860, 4870, and 4880.

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
General Chemistry Chem 1601 3 hours	General Chemistry Chem 1602 3 hours	Organic Chemistry Chem 2221 3 hours	Organic Chemistry Chem 2222 3 hours	Physical Chemistry Chem 3300* 3 hours	Chemical Reactor Engineering ChBE 3250 3 hours	Chemical Process Control ChBE 3600 3 hours	Chemical Engineering Design Projects ChBE 4951W 3 hours
General Chemistry Laboratory Chem 1601L 1 hour	General Chemistry Laboratory Chem 1602L 1 hour	Organic Chemistry Laboratory Chem 2221L 1 hour	Organic Chemistry Laboratory Chem 2222L 1 hour	Molecular and Cell Biology for Engineers ChBE 2150 3 hours	Mass Transfer and Rate-based Separations ChBE 3350 3 hours	Chemical Engineering Laboratory II ChBE 4900W 3 hours	ChBE Elective† 3 hours
Accelerated Single-Variable Calculus I Math 1300 4 hours	Accelerated Single-Variable Calculus II Math 1301 4 hours	Multivariable Calculus Math 2300 3 hours	Methods of Ordinary Differential Eqs Math 2420 3 hours	Phase Equilibria & Staged-based Separations ChBE 3200 3 hours	Chemical Engineering Laboratory I ChBE 3900W 3 hours	Chemical Engineering Process and Product Design ChBE 4950W 4 hours	Technical Elective 3 hours
Introduction to Engineering ES 1401, 1402, 1403 3 hours	General Physics I Phys 1601 3 hours	General Physics II Phys 1602 3 hours	Chemical Engineering Thermodynamics ChBE 2200 3 hours	Fluid Mechanics & Heat Transfer ChBE 3300 3 hours	ChBE Elective‡ 3 hours	Professional Practice of Safety in ChE Design ChBE 4959 1 hour	Liberal Arts Core Elective 3 hours
Liberal Arts Core Elective 3 hours	General Physics Laboratory I Phys 1601L 1 hour	General Physics Laboratory II Phys 1602L 1 hour	Modeling and Simulation in Chem Eng ChBE 2250 3 hours	Liberal Arts Core Elective 3 hours	Materials Science I MSE 1500 3 hours	Materials Science II MSE 2500 3 hours	Liberal Arts Core Elective 3 hours
	Computer Science Course CS 1100, 1101, 1103, or 1104 3 hours	Chemical Process Principles ChBE 2100 3 hours	Technical Communication for Chemical Engineers ChBE 2900W 1 hour		Materials Science Laboratory MSE 1500L 1 hour	Open Elective 2 hours	
		Liberal Arts Core Elective 3 hours	Liberal Arts Core Elective 3 hours				
14 hours	15 hours	17 hours	17 hours	15 hours	16 hours	16 hours	15 hours
<b>Total</b> <b>125 hours</b>				*Chem 3300 satisfies the ChE Science Electives requirement. ‡Selected from ChBE 4840, 4850, 4860, 4870 and 4880			