Specimen Curriculum for Chemical Engineering with emphasis in Environmental Engineering

B.E. in Chemical Engineering with Minor in Environmental Engineering and Minor in Chemistry

		Semester hours	
SOPHOMORE YEAR		FALL	SPRING
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
	Liberal Arts Core	3	3
		17	16
JUNIOR YEAR			
Chem 3300*	Physical Chemistry I	3	–
ChBE 2150†	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	–	4
CE 3600	Environmental Engineering	3	–
	Environmental Engineering elective	–	3
	Liberal Arts Core	–	3
		15	16
SENIOR YEAR			
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	Senior Engineering Design Seminar	1	–
ENVE 4600	Environmental Chemistry	3	–
	Chemical and Biomolecular Engineering elective	–	6
	Environmental Engineering elective	3	3
	Liberal Arts Core	–	6
		17	18

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

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	Science Elective: Chem 3300* or BSCI 2201‡ or BSC 2520** 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	ChBE 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	Environmental Engineering Elective 3 hours	Professional Practice of Safety in ChE Design ChBE 4959 1 hour	Environmental Engineering 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	Environmental Engineering CE 3600 3 hours	Liberal Arts Core Elective 3 hours	Environmental Chemistry ENVE 4600 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 Communications for Chemical Engineers ChBE 2900W 1 hour			Environmental Engineering Elective 3 hours	Liberal Arts Core Elective 3 hours
		Liberal Arts Core Elective 3 hours	Liberal Arts Core Elective 3 hours				
14 hours	15 hours	17 hours	17 hours	15 hours	15 hours	17 hours	18 hours

Total
128 hours

*Chem 3300 is preferred
‡Switch with a ChBE or other elective in subsequent spring semester
**Switch with an elective from an subsequent semester