Specimen Curriculum for Chemical Engineering

B.E. in Chemical Engineering with Minor in Business 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
ChBE 2900W	Technical Communications for Chemical Engineers	–	1
ECON 1020	Principles of Microeconomics	3	–
	Business Minor Statistics Requirement[1,2]	–	3
		17	16
JUNIOR YEAR			
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 3600	Chemical Process Control	3	–
ChBE 3900W	Chemical Engineering Laboratory I	–	3
	Chemical and Biomolecular Engineering Elective	–	3
BUS 2100	Essentials of Financial Reporting	1½	–
BUS 2300	Principles of Finance	1½	–
BUS 2400	Organizational Behavior	–	1½
BUS 2600	Principles of Marketing	–	1½
		15	15
SENIOR YEAR			
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
	ChBE Science Elective[3]	3	–
BUS 2700	Managing Operations	–	1½
	Business Pathways Elective[2]	3	3
	Business in Society Elective[2]	–	3
	Liberal Arts Core	3	3
		17	16½

[†]May be replaced by BSCI 1510.

1. Selected from ECON 1500, 1510, MATH 1011, 2810, 2820, 2821, PSY 2100, PSY-PC 2110, SOC 2100, BME 3200.
2. Selected to satisfy 6 hours of Technical Electives (from ENGM 3000, 3650, 3700 and one of MATH 2810, 2820, 2821) and 6 hours of Liberal Arts Core Electives requirements from approved BUS minor courses.
3. Selected from Chem 3300 (preferred) or BSCI 2201 or BSCI 2520.

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**	**Managing Operations BUS 2700 1.5 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**	**Business in Society 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**	**Essentials of Financial Reporting BUS 2100 1.5 hours**	**Organizational Behavior BUS 2400 1.5 hours**	**Business Pathways Elective† 3 hours**	**Business Pathways 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**	**Principles of Finance BUS 2300 1.5 hours**	**Principles of Marketing BUS 2600 1.5 hours**	**Liberal Arts Core Elective 3 hours**	**Liberal Arts Core Elective 3 hours**
		Principles of Microeconomics Econ 1020 3 hours	**Business Statistics Requirement#† 3 hours**				
14 hours	15 hours	17 hours	17 hours	15 hours	15 hours	17 hours	16.5 hours

Total	#Selected from ECON 1500, 1501, MATH 1011, 2810, 2821, PSY 2100, PSY-PC 2110, SOC 2100, BME 3200
126.5 hours	†Selected to satisfy 6 hours of Technical Electives (from ENGM 3000, 3650, 3700, and one of MATH 2810, 2820, 2821)
	and 6 hours of Liberal Arts Core Electives requirements from approved BUS minor courses
	*Chem 3300 is preferred
	‡Switch with ChBE or Liberal Arts elective in a subsequent spring semester