

<b>CHEMICAL ENGINEERING</b>										2017-2018					
<b>Cr. Hrs</b>	<b>SEM 1</b>	<b>Cr. Hrs</b>	<b>SEM 2</b>	<b>Cr. Hrs</b>	<b>SEM 3</b>	<b>Cr. Hrs</b>	<b>SEM 4</b>	<b>Cr. Hrs</b>	<b>SEM 5</b>	<b>Cr. Hrs</b>	<b>SEM 6</b>	<b>Cr. Hrs</b>	<b>SEM 7</b>	<b>Cr. Hrs</b>	<b>SEM 8</b>
4	<b>MATH 1220 or 1700 Calculus I</b>	4	<b>MATH 1230 or 1710 Calculus II</b>	4	<b>MATH 2720 Multivariate Calculus</b>	4	<b>MATH 3740 Differential Equations</b>	3	<b>CHEM 4300 Physical Chemistry I (F)</b>	3+	<b>CHEM 3750+3760 Organic Chemistry I (L) (F,Sp,Su1)</b>	3+	<b>CHEM 3770+3780 Organic Chemistry II (L) (F,Sp,Su2)</b>	2	<b>CHEG 4810 Unit Operations Lab: Fluid Flow, Heat &amp; Mass</b>
	MATH 1180 ≥ C or placement		MATH 1220 or 1700 ≥ C		MATH 1230 or 1710 ≥ C		MATH 2720 ≥ C		PHYS 2050+2060 ≥ C PHYS 2070+2080 ≥ C MATH 2720 ≥ C CHEM 1120+1130 ≥ C		CHEM 1120+1130 ≥ C Recommended CHEM 3760 concurrently		CHEM 3750+3760 ≥ C Recommended CHEM 3780 concurrently		CHEG 3120 ≥ C CHEG 3300 ≥ C IEE 2610 ≥ C
3+1	<b>CHEM 1100+1110 General Chemistry I (L)</b>	4+	<b>PHYS 2050+2060 University Physics I (L)</b>	4+	<b>PHYS 2070+2080 University Physics II (L)</b>	4	<b>BIOS 1610 Molecular &amp; Cellular Biology (F, Sp, Su I)</b>	3	<b>CHEG 3110 Unit Operations I (L) (F)</b>	3	<b>CHEG 3120 Unit Operations II (L) (Sp)</b>	3	<b>CHEG 4100 Chemical Reaction Engineering (F)</b>	3	<b>CHEG 4870 Senior Design Project (Sp)</b>
	MATH 1110 ≥ C or placement		MATH 1220 or 1700 ≥ C MATH 1230 or 1710 ≥ C or taking concurrently		PHYS 2050 ≥ C MATH 1230 or 1710 ≥ C MATH 2720 or 2300 ≥ C or taking concurrently		BIOS 1600 or CHEG 2960 ≥ C (may be taken concurrently)		CHEG 2960 ≥ C CHEM 1120 ≥ C		CHEG 3110 ≥ C		CHEM 4300 or CHEG 3200 ≥ C MATH 3740 ≥ D		CHEG 4600 ≥ C
3	<b>CHEG 1010 Intro to Chemical Engineering (L) (F)</b>	3+	<b>CHEM 1120+1130 General Chemistry II (L)</b>	1	<b>CHEG 2810 Data Acquisition &amp; Handling (F, Sp)</b>	3	<b>CHEG 2611 Environmental Engineering (F, Sp)</b>	3	<b>CHEG 3200 Chemical Engineering Thermodynamics (F)</b>	3	<b>CHEG 3300 Mass Transfer (Sp)</b>	3	<b>CHEG 4600 Plant Economics &amp; Project Design (F)</b>	1	<b>CHEG 4400 Safety and Hazards Mgmt (Sp)</b>
	Co-requisite CHEM 1100 & IEE 1020		CHEM 1100+1110 ≥ C		CHEG 1810 ≥ C		CHEM 1100 ≥ C MATH 1230 or 1710 ≥ C		CHEM 1120+1130 ≥ C CHEG 2960 ≥ C		CHEG 3120 ≥ C or taking concurrently		CHEG 3120 and 3300 ≥ C CHEG 3810 ≥ C or taking concurrently		CHEG 3120 ≥ C
3	<b>IEE 1020 Technical Communication</b>	2	<b>CHEG 1810 Chemical Engineering Computation (L) (F, Sp)</b>	3	<b>IEE 2610 Engineering Statistics (F, Su1)</b>	4	<b>CHEG 2960 Material &amp; Energy Balance (L) (F, Sp)</b>	1	<b>CHEG 3810 Computer Modeling and Simulation (F)</b>	3	<b>CHEG 3550 Bioprocess Engineering (Sp)</b>	4	<b>CHEG 4830 Process Control I (L) (F)</b>	3	<b>APPROVED ELECTIVE FROM AN OPTION**</b>
	English 1000 or placement		CHEG 1010 ≥ C or PAPER 1000 ≥ C or taking concurrently MATH 1180 ≥ C		MATH 1220 or 1700 ≥ C		CHEM 1100 and MATH 1230 ≥ C PHYS 2050 and CHEG 1810 ≥ C or taking concurrently		CHEG 2960 ≥ C		BIOS 1610 ≥ D CHEG 2960 ≥ C		CHEG 3120 ≥ C PHYS 2070 ≥ C MATH 3740 ≥ D or taking concurrently		
3	<b>GEN ED I* Fine Arts</b>	3	<b>GEN ED III* U.S. Cultures and Issues</b>	4	<b>APPROVED ELECTIVE FROM AN OPTION**</b>	4	<b>APPROVED ELECTIVE FROM AN OPTION**</b>	3	<b>ECON 2010 Microeconomics</b>	3	<b>GEN ED II* Humanities</b>	3	<b>APPROVED ELECTIVE FROM AN OPTION**</b>	3	<b>APPROVED ELECTIVE FROM AN OPTION**</b>
								2	<b>GEN ED VIII* Health &amp; Well-Being</b>				4	<b>GEN ED IV* Other Cultures &amp; Civilizations</b>	
	17 hours		18 hours		17 hours		19 hours		15 hours		16 hours		17 hours		16 hours
															135 total hours

NOTE: Prerequisite courses are shown in smaller print.

\* See your academic advisor for general education requirements.

\*\* See page 2 and 3 for approved elective from an option courses.

40 Cr. Pre-Engineering Req.

69 Cr. CHEG Req.

9 Cr. Gen Ed Req.

17 Cr. Elective Req.

A 'C' or better is required for admission to upper level CEAS courses



# CHEMICAL ENGINEERING APPROVED ELECTIVES BASED ON OPTION (CONT'D)

Cr. Hrs	Elective	Cr. Hrs	Elective	Cr. Hrs	Elective	Cr. Hrs	Elective	Cr. Hrs	Elective	Cr. Hrs	Elective
---------	----------	---------	----------	---------	----------	---------	----------	---------	----------	---------	----------

## POLLUTION PREVENTION OPTION

1	<b>CHP 3100 Work Experience/Co-op</b>	3	<b>PAPR 3531 Wastewater Treatment Systems</b>	3	<b>ECON 3190 - Environmental Economics</b>	4	<b>BIOS 2320 - Microbiology and Infectious Diseases</b>	3+1	<b>CHEM 2250+2260 - Quantitative Analysis (L)</b>	3	<b>CHEG 3611* Advanced Topics in Environmental Engineering</b>	3	<b>CHEG 4440* - Energy Management Engineering (F)</b>	3	<b>CHEG 4611* - Sustainable Chemical Process Development</b>
	Junior Standing		CHEG 2610 ≥ C or CHEG 2611 ≥ C		EECON 2010				CHEM 1120 and 1130 ≥ C and		CHEG 2611		(CHEG 3120 and 3200) or (ME 4310 and ME 4320)		CHEG 2611 and CHEG 2960
	Departmental consent														
3+1	<b>CHEM 3550+3560 Introductory Biochemistry (L)</b>	3	<b>IEE 3100 - Engineering Economy</b>	1 to 3	<b>CHEG 5950 Topics In Chem Engineering</b>										
	(CHEM 3700 and CHEM 3710) or (CHEM 3770 and 3780)		MATH 1230 ≥ C and junior standing						<b>*CHEG 3611, CHEG 4440 and CHEG 4611 are required. Select balance of 8 credit hours from remaning courses</b>						

## LIFE SCIENCES OPTION

4	<b>BIOS 1620 Ecology and Evolution</b>	4	<b>BIOS 2110 Human Anatomy</b>	4	<b>BIOS 2320 Microbiology and Infectious Diseases</b>	4	<b>BIOS 2400 Human Physiology</b>	3	<b>BIOS 2500 Genetics</b>	5	<b>BIOS 3500 Human Physiology for Majors</b>	3	<b>BIOS 5310 Biology of Aging</b>	3	<b>BIOS 5610 Pharmacology</b>
	BIOS 1500		BIOS 1600 or BIOS 1120				BIOS 1120 or BIOS 1610 or BIOS 1510 or BIOS 1910		CHEM 1120		BIOS 2500		Junior Standing		Junior Standing
							BIOS 2110 recommended		(BIOS 1500 or BIOS 1610)		CHEM 3750+3760 or CHEM 3700+3710		12 credits in Biology including BIOS 2400 or BIOS 3500		12 credits in Biology including BIOS 3500, CHEM 3750 and CHEM 3760
									(BIOS 1510 or BIOS 1620) or taking concurrently		Junior Standing		BIOS 2110 recommended		
3	<b>CHEG 5950 Topics In Chem. Engineering</b>	1	<b>CHP 3100 Work Experience/ Co-op</b>	3	<b>CHEM 3550 Introductory Biochemistry</b>		<b>BIOS 5970 Topics in Biological Sciences</b>								
	Departmental approval prior to registration		Junior Standing		(CHEM 3770 and 3780) or (CHEM 3700 and 3710)		Junior Standing		<b>Select 17 hours including one course at the 3000 or greater level other than CHEG 3100.</b>						
			Departmental Consent												