



## CHEMICAL FOCUS AREA: Pre-Medicine

Department of Chemical and Biochemical Engineering

### General Education (19 sh) sh

ALL	RHET:1030 Rhetoric	4
F/S	Diversity & Inclusion	3
ALL	Be Creative	3
ALL	Approved Gen Ed Course	3
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### Math & Basic Science Core (24 sh) sh

F/S	MATH:1550 Math I: Single Variable Calculus (P: ALEKS score $\geq 75$ or MPT Level 3 score $\geq 9$ )	4
ALL	MATH:1560 Math II: Multivariable Calculus (P: MATH:1550)	4
ALL	MATH:2550 Math III: Matrix Algebra (P: MATH:1550)	2
ALL	MATH:2560 Math IV: Differential Equations (P: MATH:1560 & MATH:2550)	3
ALL	CBE:3020 Appl Stat Chem & Natural Resource Engr	3 OR
ALL	STAT:2020 Probability & Stats for Engr & Phys Sci (P: MATH:1560)	3 OR
ALL	STAT:3510 Biostatistics	3
ALL	CHEM:1110 Principles of Chemistry I (P: ALEKS score $\geq 55$ or MPT Level 3 score $\geq 9$ )	4
ALL	PHYS:1611 Introductory Physics I / Lab (C: MATH:1550)	4

### Engineering Core (7 sh) sh

F	ENGR:1000 Engineering Success for First-Year Students (First semester standing)	1
F	ENGR:1100 Intro to Engineering Problem Solving	3
F/S	ENGR:1300 Intro to Engineering Computing (C: MATH:1550)	3

### ChemE Requirements (53 sh) sh

ALL	CHEM:1120 Principles of Chemistry II (P: CHEM:1110 with a minimum grade of C-)	4
ALL	CHEM:2210 Organic Chemistry I (P: CHEM:1120 with a minimum grade of C-)	3 OR
F	CHEM:2230 Organic Chemistry I for Majors (P: CHEM:1120 with a minimum grade of C-)	3
ALL	CHEM:2220 Organic Chemistry II (P: CHEM:2210 or CHEM:2230 with a minimum grade of C-)	3
S	CHEM:2240 Organic Chemistry II for Majors (P: CHEM:2210 or CHEM:2230 with a minimum grade of C-)	3 OR
ALL	CHEM:2410 Organic Chemistry Laboratory (P: CHEM:1120 & (CHEM:2210 or CHEM:2230), both with a minimum grade of C-; C: CHEM:2220 or CHEM:2240)	3
S	CHEM:2420 Organic Chemistry Lab for Majors (P: CHEM:1120 & (CHEM:2210 or CHEM:2230), both with a minimum grade of C-; C: CHEM:2220 or CHEM:2240)	3 OR
ALL	ENGR:2130 Thermodynamics (P: CHEM:1110 & PHYS:1611; C: MATH:1560)	3
ALL*	ENGR:2720 Materials Science (P: CHEM:1110; C: MATH:1550)	3
F	CBE:2110 Computational Tools for Chemical Engineers (P: MATH:1550; C: MATH:1560)	2
F/S	CBE:2105 Process Calculations (P: MATH:1550)	3
S	CBE:3105 ChE Thermodynamics (P: ENGR:2130; C: CBE:2105)	3
S	CBE:3109 Fluid Flow (C: CBE:2105)	2
F	CBE:3113 Heat & Mass Transfer (P: MATH:2560 & CBE:2105; R: CBE:3109)	3
F	CBE:3117 Separations (P: CBE:2105 & CBE:3105; C: CBE:3113)	3
F/S	CBE:3120 Chemical Reaction Engineering (P: MATH:2560; C: CBE:3105; R: CBE:3113)	3
F	CBE:3125 Chemical Process Safety (P: CBE:3105 & CBE:3109; C: CBE:3113)	3
S	CBE:3150 Thermodynamics / Transport Laboratory (P: CBE:3105 & CBE:3113)	3
F	CBE:3155 Chemical Reaction Engineering / Separation Lab (P: CBE:3117; C: CBE:3120; R: Statistics Elective)	3
S	CBE:3205 Introduction Biochemical Engineering (P: CBE:2105; C: CME:3109; R: CBE:3120)	3
F	CBE:4105 Process Dynamics & Control	3

### ChemE Capstone Design Courses (5 sh) sh

F	CBE:4109 Chemical Engineering Process Design I (P: CBE:3109, CBE:3113, & CBE:3117; C: CBE:3120 & CBE:3125)	2
S	CBE:4110 Chemical Engineering Process Design II (P: CBE:4109; R: CBE:4105 & CBE:3205)	3

### ChemE Departmental Seminars (5 sh) sh

S	CBE:1000 CBE Departmental Seminar	1
F/S	CBE:3000 CBE Professional Seminar (1 sh x4); (P: CBE:2105)	4
S	CBE:4195 Senior Enriching Activities Seminar (C: CBE:4110)	0

### Recommended GEC Courses sh

ALL	PSY:1001 Elementary Psychology	3
S	PSY:2130 Advanced Psychology for Pre-Medical Track (P: PSY:1001)	3
ALL	SOC:1010 Introduction to Sociology	3

### Advanced Chemistry/Science Electives

F/S	BIOC:3120 Biochemistry and Molecular Biology I (P: 2 semesters general chemistry and 1 organic chemistry; Recommended: BIOL:1411, BIOL:1412, and an additional organic chemistry course)	3	
AND	F/S	BIOC:3130 Biochemistry and Molecular Biology II (P: BIOC:3120 w/min C-)	3
OR			
ALL	BIOC:3110 Biochemistry (P: one year each college-level biology and chemistry; Recommended: one Advanced Chemistry/Biochemistry or Science Course)	3	
AND			3

### Focus Area Electives

ALL	BIOL:1411 Foundations of Biology (P: CHEM:1110 w/min C- or CHEM:1070 w/min A-)	4
ALL	BIOL:1412 Diversity of Form and Function (P: BIOL:1411 w/min C-)	4
F/S	PHYS:1612 Introductory Physics II (P: PHYS:1611; C: MATH:1560 or MATH:1860)	4

A chemistry minor can be obtained if an advanced chemistry course is taken (3000 and above). A recommended science course is MICR:2157 General Microbiology, otherwise an advanced (3000 and above) science course should be taken.