

## 2018-2019 SAMPLE PARADIGM for a B.S. in Chemical Engineering Biochemical Engineering Curricula

This sample paradigm shows a normal 4 year progression towards a degree in chemical engineering with a biochemical emphasis. Some of the courses should be taken in this order due to prerequisite structures, others may be switched.

### FRESHMAN YEAR - Semester I

CH E 101	CH E Project	1 cr.
CHEM 113 & 113L	Principles of Chemistry I & Lab	4 crs.
ENG 111	English Composition I	3 crs.
Math 131	Calculus I	3 crs.
BIOL 111& 111L	Principles of Biology I & Lab	4 crs.
CBU 101	Orientation	0 cr.
	<i>Total</i>	<i>15 crs.</i>

### FRESHMAN YEAR - Semester II

BIOL 112 & 112L	Principles of Biology II & Lab	4 crs.
CHEM 114 & 114L	Principles of Chemistry II & Lab	4 crs.
CH E 120	Introduction to Chemical Engineering	2 crs.
ENG 112	English Composition II	3 crs.
MATH 132	Calculus II	3 crs.
	<i>Total</i>	<i>16 crs.</i>

### SOPHOMORE YEAR - Semester I

CH E 201	CH E Project	1 cr.
CH E 305	Elementary Thermodynamics	3 crs.
CHEM 211 & 211L	Organic Chemistry I & Lab	4 crs.
MATH 231	Differential Equations	3 crs.
PHYS 150 & 150L	Physics I & Lab	4 crs.
	General Education	3 crs.
	<i>Total</i>	<i>18 crs.</i>

### SOPHOMORE YEAR - Semester II

CH E 232	Material & Energy Balances	4 crs.
CHEM 212 & 212L	Organic Chemistry II & Lab	4 crs.
MATH 232	Calculus III	3 crs.
PHYS 251 & 251L	Physics II & Lab	4 crs.
	General Education	3 crs.
	<i>Total</i>	<i>18 crs.</i>

**JUNIOR YEAR - Semester I**

CH E 314	Engineering Economics	3 crs.
CH E 323	Fluid Mechanics	3 crs.
CH E 325	Junior Lab I	1 cr.
CH E 327	Chem. Engr. Thermodynamics	3 crs.
CHEM 351 & 351L	Physical Chemistry I & Lab	4 crs.
	General Education	3 crs.
	<i>Total</i>	<i>17 crs.</i>

**JUNIOR YEAR - Semester II**

BIOL 321 & 321L	Microbiology & Lab	4 crs.
CH E 324	Heat Transfer	3 crs.
CH E 326	Junior Lab II	1 cr.
CHE 330	Mass Transfer & Separations	3 crs.
ECE 221	Electrical Circuits I	3 crs.
	General Education	3 crs.
	<i>Total</i>	<i>17 crs.</i>

**SENIOR YEAR - Semester I**

CH E 401	CH E Project	2 crs.
CH E 425	Process Design I	3 crs.
CH E 437	Modeling & Control	3 crs.
CH E 441	Senior Lab I	1 cr.
CH E 443	Reactor Design	3 crs.
CHEM 315 & 315L	Biochemistry & Lab	4 crs.
	<i>Total</i>	<i>16 crs.</i>

**SENIOR YEAR - Semester II**

CH E 402	CH E Project	2 crs.
CH E 426	Process Design II	3 crs.
CH E 442	Senior Lab II	1 cr.
CH E 444	Biochemical Engineering	3 crs.
	General Education (2 courses)	6 crs.
	<i>Total</i>	<i>15 crs.</i>

Total credits required for bachelor's degree completion: 132