GADOMSKI SCHOOL OF ENGINEERING

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 engineering emphasis. Some of the courses should be taken in this order due to prerequisite structures; others may be switched.

FRESHMAN YEAR

Semester I		Credits
CH E 119	Fundamentals of Chemical Engineering	2
CHEM 113 & 113L	Principles of Chemistry I & Lab	4
ENG 121/L or 122/L or 123	Writing & Critical Literacy	4 (3)
MATH 131	Calculus I	3
BIOL 111 & 111L	Principles Biology I & Lab	4
CBU 101	Orientation	0
Total		**17(16)**

Semester II		Credits
BIOL 112 & 112L	Principles of Biology II & Lab	4
CHEM 114 & 114L	Principles of Chemistry II & Lab	4
CH E 120	Introduction to Chemical Engineering	2
ENG 130	Writing & Critical Research	3
MATH 132	Calculus II	3
Total		**16**

SOPHOMORE YEAR

Semester I		Credits
CH E 305	Elementary Thermodynamics	3
CHEM 211 & 211L	Organic Chemistry I	4
MATH 231	Differential Equations	3
PHYS 150 & 150L	Physics I	4
–	General Education	3
Total		**17**

Semester II		Credits
CH E 232	Material & Energy Bal	4
CHEM 212 & 212L	Organic Chemistry II & Lab	4
MATH 232	Calculus III	3
PHYS 251 & 251L	Physics II & Lab	4
–	General Education	3
Total		**18**

JUNIOR YEAR

Semester I		Credits
CE 351	Engineering Economy	2
CH E 323	Fluid Mechanics	3
CH E 325	Junior Lab I	1
CH E 327	Chemical Engineering Thermodynamics	3
CHEM 351 & 351L	Physical Chemistry I & Lab	4
–	General Education	3
Total		**16**

Semester II		Credits
BIOL 321 & 321L	Microbiology & Lab	4
CH E 324	Heat Transfer	3
CH E 326	Junior Lab II	1
CHE 330	Mass Transfer & Separations	3
ECE 221	Electrical Circuits I	3
–	General Education	3
Total		**17**

SENIOR YEAR

Semester I		Credits
CH E 401	CH E Project	2
CH E 425	Process Design I	3
CH E 437	Modeling & Control	3
CH E 441	Senior Lab I	1
CH E 443	Reactor Design	3
CHEM 315 & 315L	Biochemistry & Lab	4
Total		**16**

Semester II		Credits
CH E 402	CH E Project	2
CH E 426	Process Design II	3
CH E 442	Senior Lab II	1
CH E 446	Biochemical Engineering	3
–	General Education	6
Total		**15**

Total credits required for bachelor's degree completion: 132(131)

GADOMSKI SCHOOL OF ENGINEERING

B.S. IN CHEMICAL ENGINEERING

Chemical Engineering Curricula

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

FRESHMAN YEAR

Semester I		Credits
CH E 119	Fundamentals of Chemical Engineering	2
CHEM 113 & 113L	Principles of Chemistry I & Lab	4
ENG 121/L or 122/L or 123	Writing & Critical Literacy	4 (3)
MATH 131	Calculus I	3
CBU 101	Orientation	0
–	General Education	3
Total		**16(15)**

Semester II		Credits
CHEM 114 & 114L	Principles of Chemistry II & Lab	4
CH E 120	Introduction to Chemical Engineering	2
ENG 130	Writing & Critical Research	3
MATH 132	Calculus II	3
–	General Education	6
Total		**18**

SOPHOMORE YEAR

Semester I		Credits
CH E 305	Elementary Thermodynamics	3
CH E 328	Materials Science	3
CHEM 211 & 211L	Organic Chemistry I	4
MATH 231	Differential Equations	3
PHYS 150 & 150L	Physics I	4
Total		**17**

Semester II		Credits
CH E 232	Material & Energy Bal	4
CHEM 212 & 212L	Organic Chemistry II & Lab	4
MATH 232	Calculus III	3
PHYS 251 & 251L	Physics II & Lab	4
CE 201	Statics	3
Total		**18**

JUNIOR YEAR

Semester I		Credits
CE 351	Engineering Economy	2
CH E 323	Fluid Mechanics	3
CH E 325	Junior Lab I	1
CH E 327	Chemical Engineering Thermodynamics	3
CHEM 351 & 351L	Physical Chemistry I & Lab	4
–	General Education	3
Total		**16**

Semester II		Credits
CH E 324	Heat Transfer	3
CH E 326	Junior Lab II	1
CHE 330	Mass Transfer & Separations	3
ECE 221	Electrical Circuits I	3
–	Chemistry Elective (300+ w/lab)	4
–	General Education	3
Total		**17**

SENIOR YEAR

Semester I		Credits
CH E 401	CH E Project	2
CH E 425	Process Design I	3
CH E 437	Modeling & Control	3
CH E 441	Senior Lab I	1
CH E 443	Reactor Design	3
–	Program Option	3
Total		**15**

Semester II		Credits
CH E 402	CH E Project	2
CH E 426	Process Design II	3
CH E 442	Senior Lab II	1
CH E 444	Polymers	3
–	Program Option	3
–	General Education	3
Total		**15**

Total credits required for bachelor's degree completion: 132(131)