CHEMICAL ENGINEERING (BS)

Program Mission

The mission of Chemical Engineering Program is to provide a multidisciplinary engineering undergraduate education built on an authentically Catholic liberal arts foundation. Graduates of the program will be professionals who are excellent problem solvers, committed to the highest ethical standards, and proficient communicators. They will understand the role of engineering as a profession and their duty as engineers to promote the good of society.

Program Outcomes

The following are the program educational objectives used by the program for ABET accreditation, and thus are styled as broad statements describing the career and professional accomplishments that the program is preparing graduates to achieve.

1. Graduates will maintain a balanced lifestyle pursuing what is good, true, and beautiful. As they live out their vocation, they will contribute significantly to personal, family, workplace, community, and church endeavors.
2. Graduates will demonstrate technical knowledge and expertise in their profession and will innovate beyond the state of the art.
3. Graduates will demonstrate interpersonal and professional skills to effectively lead teams and projects of substantial size.

Program Requirements

Code	Title	Hours
Required General Education Courses		
PHIL-3250	Ethics	3
THEO-2000	Christian Moral Life	3
Science and Mathematics		
CHEM-1200 & CHEM-1201	General Chemistry I Lecture and General Chemistry I Laboratory [1]	4
CHEM-1210 & CHEM-1211	General Chemistry II Lecture and General Chemistry II Lab [1]	4
CHEM-2200 & CHEM-2201	Organic Chemistry I Lecture and Organic Chemistry I Lab [1]	4
CHEM-2210	Organic Chemistry II Lecture [1]	3
Advanced Chemistry Elective		3
MATH-1300	Calculus I [1]	4
MATH-1350	Calculus II [1]	4
MATH-2300	Calculus III [1]	4
MATH-3100	Differential Equations	3
PHYS-2100 & PHYS-2101	Classical Physics I and Classical Physics I Lab	4
PHYS-2110 & PHYS-2111	Classical Physics II and Classical Physics II Lab	4
Engineering Courses		
CENG-2010	Chemical Engineering Fundamentals [2]	3
CENG-3050	Separations	3
CENG-3250	Chemical Engineering Thermodynamics	3
CENG-3300	Unit Operations	3
CENG-3350	Chemical Engineering Laboratory I	2
CENG-4080	Chemical Process Dymamics & Control	3
CENG-4210	Reactor Design	3
CENG-4350	Chemical Engineering Laboratory II	3
CENG-4600	Plant Design I	3
CENG-4610	Plant Design II	3
CENG-4820	Bioprocess Engineering	3
CENG-COMP	Senior Comprehensive Exam	0
EENG-2060	Linear Circuit Analysis I	3
ENGR-1200	Introduction to Engineering	2
ENGR-3150	Statistical Analysis of Data	3
ENGR-3170	Engineering Economy & Society	3
ENGR-3250	Thermodynamics	3
ENGR-3410	Thermofluids Laboratory	2
ENGR-3500	Materials Science	3
ENGR-3600	Heat & Mass Transfer	3
ENGR-4840	Quality Engineerg	3
Chemical Engineering Electives		6
Total Hours		**110**

[1] These courses must be completed with a "C–" or better.
[2] These courses must be completed with a "C+" or better to proceed to the next class in Chemical Engineering.

Courses required for the major may be repeated but students must pass all required courses on their first or second attempt.

Chemical Engineering Electives

CENG-3000+ courses not already utilized for the chemical engineering major.

Advanced Chemistry Electives

Any CHEM-3000+ course not already utilized for the chemical engineering major.

Suggested Sequence of Courses for a Bachelor of Science Degree in Chemical Engineering

Course	Title	Hours
Freshman Year		
First Semester		
ENGR-1200	Introduction to Engineering	2
CHEM-1200	General Chemistry I Lecture	3
CHEM-1201	General Chemistry I Laboratory	1
MATH-1300	Calculus I	4
PHYS-2100	Classical Physics I	3
PHYS-2101	Classical Physics I Lab	1
EXSC-1115	Wellness for Life	1
GNST-1000	BC Experience	1
	Hours	**16**
Second Semester		
CHEM-1210	General Chemistry II Lecture	3
CHEM-1211	General Chemistry II Lab	1
MATH-1350	Calculus II	4
PHYS-2110	Classical Physics II	3

PHYS-2111	Classical Physics II Lab	1
ENGL-1010	English Composition	3
THEO-1100	Introduction to Theology	3
	Hours	**18**
Sophomore Year		
First Semester		
CENG-2010	Chemical Engineering Fundamentals	3
CHEM-2200	Organic Chemistry I Lecture	3
CHEM-2201	Organic Chemistry I Lab	1
MATH-2300	Calculus III	4
Historical Foundation		3
PHIL-1750	Principles of Nature	3
	Hours	**17**
Second Semester		
THEO-2000	Christian Moral Life	3
CENG-3300	Unit Operations	3
ENGR-3150	Statistical Analysis of Data	3
ENGR-3250	Thermodynamics	3
CHEM-2210	Organic Chemistry II Lecture	3
MATH-3100	Differential Equations	3
	Hours	**18**
Junior Year		
First Semester		
CENG-3250	Chemical Engineering Thermodynamics	3
Advanced Chemistry Elective		3
ENGR-3500	Materials Science	3
THEO-2000	Christian Moral Life	3
ENGR-3170	Engineering Economy & Society	3
CENG-3350	Chemical Engineering Laboratory I	2
	Hours	**17**
Second Semester		
CENG-3050	Separations	3
CENG-4820	Bioprocess Engineering	3
ENGR-3410	Thermofluids Laboratory	2
ENGR-3600	Heat & Mass Transfer	3
Aesthetic Foundation		3
PHIL-3250	Ethics	3
	Hours	**17**
Senior Year		
First Semester		
CENG-4600	Plant Design I	3
CENG-4080	Chemical Process Dymamics & Control	3
CENG-4210	Reactor Design	3
Foreign Language		4
Historical Foundation		3
	Hours	**16**
Second Semester		
CENG-4610	Plant Design II	3
Faith Foundation		3
Chemical Engineering Elective		3
Foreign Language		4
Aesthetic Foundation		3
	Hours	**16**
Ninth Semester		
CENG-COMP	Senior Comprehensive Exam	0
CENG-4350	Chemical Engineering Laboratory II	3
ENGR-4840	Quality Engineerg	3
Chemical Engineering Elective		3
EENG-2060	Linear Circuit Analysis I	3
Philosophical Inquiry		3
EXSC Fitness Course		1
	Hours	**16**
	Total Hours	**151**