CHEMICAL AND BIOMOLECULAR ENGINEERING (B.S.)

Degree: Bachelor of Science

Major: Chemical Engineering

Total Hours: 129

Entrance Requirements

Entering freshmen and new transfer students are considered provisional majors. The Engineering Advisors in the Undergraduate Advising Center are responsible for the academic advisement of provisional engineering majors with less than 60 credit hours.

The entrance requirements from high school for engineering degree programs are:

English - 4 units
Mathematics: Algebra - 2 units, Geometry - 1 unit, Pre-calculus or Equivalent - 1 unit
Natural Sciences: Chemistry - 1 unit, Physics - 1 unit
Foreign Language - 1 unit

Transfer students must have a cumulative transfer GPA of at least 2.0 to be accepted into the Engineering program. Transfer credit is considered for STEM (Science, Technology, Engineering & Math) coursework with a grade of "C" or better. Returning students (engineering or other majors) must have a cumulative Lamar University GPA of at least 2.0 to be accepted into the Engineering program.

College Of Engineering Standards

In addition to the university requirements, the College of Engineering enforces the following standards:

Students are required to take courses in the sequence shown in the Lamar University General Catalog for each degree program.

Engineering students are required to maintain a GPA of 2.0 to remain in the program. Students who fall below the required GPA of 2.0 will be placed on probation and given two long semesters to raise their GPA to a 2.0 or better (maximum load of 13 semester hours). Students who fail to meet this requirement will be suspended from their Engineering Major for one long term. Students returning from suspension must prepare a performance contract in consultation with their academic advisor. A minimum term of the contract requires the student to remove deficiencies every semester of enrollment. Students who fail to meet the terms of their contract will be permanently suspended.
Engineering students must make a 'C' or better in all STEM (Science, Technology, Engineering & Math) courses in order to satisfy degree plan/prerequisite requirements.
A course may be repeated for additional credit toward a degree only as specified by the official course description in the General Catalog. After the second unsuccessful attempt at a major related course, before re-enrolling student is required to obtain approval from department chair. Any student who wishes to repeat a course must do so before completing a more advanced course in the same subject matter field.
Upon the completion of the first two years of the specific degree plan with a GPA of 2.0 or higher on all required courses, will be considered for admission to their professional engineering program. For all engineering programs, it is required that at least 45 semester hours (at least 25 semester hours in engineering at the 3000 and 4000 level) be earned after admission to the professional program.
The student's advisor must approve all electives.

The Dean of Engineering may require students to meet the current degree requirements or program standards.

Code	Title	Hours
General Education Core Curriculum		
Communication		
ENGL 1301	Composition I	3
COMM 1315	Public Speaking I	3
Mathematics		
MATH 2413	Calculus and Analytical Geometry I	4
Life and Physical Sciences [1]		
PHYS 2425	University Physics I	4
PHYS 2426	University Physics II	4
Language, Philosophy and Culture		
PHIL 1370	Philosophy of Knowledge	3
or PHIL 2306	Ethics	
Creative Arts		
Select one of the following:		3
ARTS 1301	Art Appreciation	
ARTS 1303	Art History I	
COMM 1375	Film Appreciation	
COSC 1324	The Art of Computer Game Development	
DANC 2303	Dance Appreciation	
MUSI 1306	Music Appreciation	
MUSI 1306	Music Appreciation	
MUSI 1309	Jazz History and Appreciation	
MUSI 1310	History of Rock and Roll	
PHIL 1330	Arts and Ideas	
THEA 1310	Theatre Appreciation	
American History		
Select two of the following:		6
HIST 1301	U S History I 1763-1877	
HIST 1302	U S History II Since 1877	
HIST 2301	Texas History	
Government/Political Science		
POLS 2301	Intro to American Government I	3
POLS 2302	Intro/American Government II	3
Social and Behavioral Sciences		
INEN 2373	Engineering Economics	3
Component Area Option		
MATH 2414	Calculus and Analytical Geometry II	4
Required Major Courses		
Engineering Courses		
CHEM 1111	General Chemistry I Laboratory	1
CHEM 1311	General Chemistry I	3
CHEM 1112	General Chemistry II Laboratory	1
CHEM 1312	General Chemistry II	3
CHEM 3111	Organic Chemistry I Laboratory	1

CHEM 3311	Organic Chemistry I	3
CHEM 3401	Quantitative Analysis	4
CHEN 1301	Introduction to Chemical Engineering	3
CHEN 2140	Professional Seminar	1
CHEN 2300	Chemical Engineering Applied Mathematics	3
CHEN 2374	Thermodynamics I	3
CHEN 3311	Momentum Transfer	3
CHEN 3320	Heat Transfer	3
CHEN 3330	Thermodynamics II	3
CHEN 3340	Process Analysis	3
CHEN 4150	Process Control Laboratory	1
CHEN 4310	Laboratory I	3
CHEN 4331	Process Control I	3
CHEN 4332	Process Control II	3
CHEN 4340	Plant Design II	3
CHEN 4350	Advanced Analysis	3
CHEN 4360	Plant Design I	3
CHEN 4410	Reaction Kinetics	4
CHEN 4320	Mass Transfer	3
MATH 2415	Calculus III	4
MATH 3301	Ordinary Differential Equations	3
MATH 3370	Introduction to the Theory of Statistical Inference	3
Elective Courses		
Select four Technical Electives [2]		12
Total Hours		**129**

[1] Additional hours are applied to Component Area Option.

[2] Must be approved by the department chair. At least 6 hours must be an engineering elective and 3 hours must be a chemistry elective.

Course	Title	Hours
First Year		
Fall		
ENGL 1301	Composition I	3
MATH 2413	Calculus and Analytical Geometry I	4
CHEM 1311 & CHEM 1111	General Chemistry I and General Chemistry I Laboratory	4
CHEN 1301	Introduction to Chemical Engineering	3
HIST 1301	U S History I 1763-1877	3
	Hours	**17**
Spring		
MATH 2414	Calculus and Analytical Geometry II	4
CHEM 1312 & CHEM 1112	General Chemistry II and General Chemistry II Laboratory	4
PHYS 2425	University Physics I	4
PHIL 2306	Ethics	3
	Hours	**15**
Second Year		
Fall		
MATH 2415	Calculus III	4
PHYS 2426	University Physics II	4
CHEM 3311	Organic Chemistry I	3
CHEM 3111	Organic Chemistry I Laboratory	1
CHEN 3340	Process Analysis	3
CHEN 2140	Professional Seminar	1
	Hours	**16**
Spring		
CHEM 3401	Quantitative Analysis	4
MATH 3301	Ordinary Differential Equations	3
CHEN 2300	Chemical Engineering Applied Mathematics	3
CHEN 2374	Thermodynamics I	3
COMM 1315	Public Speaking I	3
	Hours	**16**
Third Year		
Fall		
CHEN 3330	Thermodynamics II	3
CHEN 3311	Momentum Transfer	3
POLS 2301	Intro to American Government I	3
INEN 2373	Engineering Economics	3
MATH 3370	Introduction to the Theory of Statistical Inference	3
Technical Elective [1]		3
	Hours	**18**
Spring		
CHEN 3320	Heat Transfer	3
CHEN 4410	Reaction Kinetics	4
POLS 2302	Intro/American Government II	3
Technical Elective [1]		3
HIST 1302	U S History II Since 1877	3
	Hours	**16**
Fourth Year		
Fall		
CHEN 4331	Process Control I	3
CHEN 4320	Mass Transfer	3
CHEN 4310	Laboratory I	3
CHEN 4360	Plant Design I	3
Technical Elective [1]		3
	Hours	**15**
Spring		
CHEN 4332	Process Control II	3
CHEN 4150	Process Control Laboratory	1
CHEN 4340	Plant Design II	3
CHEN 4350	Advanced Analysis	3
Creative Art Core		3
Technical Elective [1]		3
	Hours	**16**
	Total Hours	**129**

Students should meet with their academic advisor to verify their plan and track their progress twice a year.

[1] Must be approved by the department chair. At least 6 hours must be an engineering elective and 3 hours must be a chemistry elective.