

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		
<i>Communication</i>		
ENGL 1301	Composition I	3
COMM 1315	Public Speaking I	3
<i>Mathematics</i>		
MATH 2413	Calculus and Analytical Geometry I	4
<i>Life and Physical Sciences¹</i>		
PHYS 2425	University Physics I	4
PHYS 2426	University Physics II	4
<i>Language, Philosophy and Culture</i>		
PHIL 1370	Philosophy of Knowledge	3
	or PHIL 2306 Ethics	
<i>Creative Arts</i>		
Select one of the following:		3
ARTS 1301	Art Appreciation	
ARTS 1303	Art History I	
DANC 2304	Dance Appreciation	
MUSI 1306	Music Appreciation	
COMM 1375	Film Appreciation	
COSC 1324	The Art of Computer Game Development	
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	
<i>American History</i>		
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	
<i>Government/Political Science</i>		
POLS 2301	Intro to American Government I	3
POLS 2302	Intro/American Government II	3
<i>Social and Behavioral Sciences</i>		
INEN 2373	Engineering Economics	3
<i>Component Area Option</i>		
MATH 2414	Calculus and Analytical Geometry II	4
Required Major Courses		
<i>Engineering Courses</i>		
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

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CHEM 3311	Organic Chemistry I	3
CHEM 3112	Organic Chemistry II Laboratory	1
CHEM 3312	Organic Chemistry II	3
CHEM 3401	Quantitative Analysis	4
CHEN 1101	Introduction to Chemical Engineering	1
CHEN 2100	Computer Aided Modeling	1
CHEN 2140	Professional Seminar	1
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 2318	Linear Algebra	3
MATH 2415	Calculus III	4
MATH 3301	Ordinary Differential Equations	3
MATH 3370	Introduction to the Theory of Statistical Inference	3
<i>Elective Courses</i>		
Select three Technical Electives ²		9
Total Hours		129

¹ Additional hours are applied to Component Area Option.

² Must be approved by the department chair. At least 3 hours must be an engineering course.

Course	Title	Hours
First Year		
Fall		
ENGL 1301	Composition I	3
MATH 2413	Calculus and Analytical Geometry I	4
CHEM 1311	General Chemistry I	3
CHEM 1111	General Chemistry I Laboratory	1
CHEN 1101	Introduction to Chemical Engineering	1
HIST 1301	U S History I 1763-1877	3
Hours		15
Spring		
PHIL 2306 or PHIL 1370	Ethics or Philosophy of Knowledge	3
MATH 2414	Calculus and Analytical Geometry II	4
PHYS 2425	University Physics I	4
CHEM 1312	General Chemistry II	3
CHEM 1112	General Chemistry II Laboratory	1
Hours		15
Second Year		
Fall		
PHYS 2426	University Physics II	4
MATH 2415	Calculus III	4
MATH 2318	Linear Algebra	3

INEN 2373	Engineering Economics	3
CHEN 2140	Professional Seminar	1
CHEN 2374	Thermodynamics I	3
Hours		18
Spring		
CHEM 3401	Quantitative Analysis	4
CHEN 3340	Process Analysis	3
MATH 3301	Ordinary Differential Equations	3
COMM 1315	Public Speaking I	3
HIST 1302	U S History II Since 1877	3
CHEN 2100	Computer Aided Modeling	1
Hours		17
Third Year		
Fall		
MATH 3370	Introduction to the Theory of Statistical Inference	3
CHEN 3330	Thermodynamics II	3
CHEN 3311	Momentum Transfer	3
POLS 2301	Intro to American Government I	3
CHEM 3311	Organic Chemistry I	3
CHEN 3111	Organic Chemistry I Laboratory	1
Hours		16
Spring		
CHEN 3320	Heat Transfer	3
CHEN 4410	Reaction Kinetics	4
POLS 2302	Intro/American Government II	3
CHEM 3312	Organic Chemistry II	3
CHEN 3112	Organic Chemistry II Laboratory	1
Technical Elective		3
Hours		17
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		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		3
Hours		16
Total Hours		129

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