CHEMISTRY, B.S.

Objectives

The Bachelor of Science in Chemistry degree program provides the student with a flexible program that builds upon a solid fundamental knowledge in chemistry. Students work with their advisors/chairperson to select upper division elective courses in emphasis areas like analytical, organic, inorganic, or physical chemistry or health sciences-which include but are not limited to medicine, pharmacy, dentistry, optometry-and areas such as forensics, environmental chemistry, education, etc.

The Bachelor of Science in Chemistry degree program, approved by the Committee on Professional Training of the American Chemical Society (ACS), ACS-certified track in Chemistry, is designed to prepare the student not only for immediate entry into the profession of chemistry at the Bachelor's level but also for graduate study toward advanced degrees.

Student learning outcomes for the chemistry major:

- Students will be able to apply essential concepts in chemistry and biochemistry.
- Students will be able to complete an experiment in the chemistry/biochemistry laboratory using safe and proper technique.
- Students will be able to analyze and present data in written and oral formats.
- Students will be able to argue why chemistry and the application of green chemistry principles is an integral activity for addressing social issues such as economic, health and/or environmental problems.

Major Requirements

Code	Title	Semester Hours
Lower Division Requirements		
CHEM 110	General Chemistry I	3
CHEM 111	General Chemistry I Lab	1
CHEM 112	General Chemistry II	3
CHEM 113	General Chemistry II Lab	1
CHEM 190	World of Chemistry and Biochemistry	1
CHEM 220	Organic Chemistry I	3
CHEM 221	Organic Chemistry I Lab	1
CHEM 222	Organic Chemistry II	3
CHEM 223	Organic Chemistry II Lab	1
or CHEM 225	Organic Chemistry II Lab for Molecular Sciences	
BIOL 101	General Biology I	3
BIOL 111	General Biology I Lab	2
MATH 131	Calculus I	4
MATH 132	Calculus II	4
PHYS 1100	Introduction to Mechanics	4
PHYS 2100	Introduction to Electricity and Magnetism	4
Subtotal		38
Upper Division Requirements		
CHEM 330	Inorganic Chemistry	3
CHEM 331	Inorganic Chemistry Lab	1
CHEM 340	Physical Chemistry	3
CHEM 341	Physical Chemistry Lab	1
CHEM 342	Advanced Physical Chemistry	3
CHEM 360	Analytical Chemistry and Lab	4
CHEM 370	Biochemistry	3
CHEM 371	Biochemistry Lab	1
CHEM 390	Chemistry Seminar	1
CHEM 391	Chemistry Seminar	1
CHEM 490	Chemistry Seminar	1
CHEM 491	Chemistry Seminar	1
Select nine semester hours of any upper division chemistry electives or other CSE upper division electives approved by and selected in conjunction with your academic advisor/chairperson.		9
Subtotal		32
Total Semester Hours		**70**

Notes:

A grade of at least C (2.0) is required in each of the CHEM courses. With approval of the Chairperson, MATH 122 Calculus for the Life Sciences I and MATH 123 Calculus for the Life Sciences II may be substituted for MATH 131 Calculus I and MATH 132 Calculus II, and PHYS 2500 General Physics I and PHYS 2550 General Physics II may be substituted for PHYS 1100 Introduction to Mechanics and PHYS 2100 Introduction to Electricity and Magnetism. An average of C (2.0) is required for the BIOL, MATH, and PHYS courses.

Except for CHEM 390 Chemistry Seminar and CHEM 490 Chemistry Seminar, a minimum cumulative grade point average of C (2.0) is required in the upper division major requirements for graduation. All upper division courses must be completed at LMU. Strongly recommended for those intending graduate study: CHEM 397 Directed Research/CHEM 497 Directed Research. A maximum of 12 semester hours of Chemistry/Biochemistry Internship and/or Directed Research (CHEM 393 Chemistry/Biochemistry Internship, CHEM 397 Directed Research, CHEM 493 Chemistry/Biochemistry Internship, CHEM 497 Directed Research) may be included toward the 124-hour baccalaureate requirement. CHEM courses with Credit/No Credit grading do not count toward the upper division elective requirements of the major.

To be eligible for the Dean's list, students must have completed 14 semester hours at LMU for that semester.

Chemistry Curriculum

(124 Semester Hours)

Course	Title	Semester Hours
First Year		
Fall		
BIOL 101	General Biology I	3
BIOL 111	General Biology I Lab	2
CHEM 110	General Chemistry I	3
CHEM 111	General Chemistry I Lab	1
CHEM 190	World of Chemistry and Biochemistry	1
MATH 131	Calculus I	4
FFYS 1000 or RHET 1000	First Year Seminar or Rhetorical Arts	4
ORNT 1000	First Year Forum	0
	Semester Hours	**18**
Spring		
CHEM 112	General Chemistry II	3
CHEM 113	General Chemistry II Lab	1

MATH 132	Calculus II	4
PHYS 1100	Introduction to Mechanics	4
RHET 1000 or FFYS 1000	Rhetorical Arts or First Year Seminar	3-4
	Semester Hours	**15-16**
Sophomore Year		
Fall		
CHEM 220	Organic Chemistry I	3
CHEM 221	Organic Chemistry I Lab	1
PHYS 2100	Introduction to Electricity and Magnetism	4
University Core		4
University Core		4
	Semester Hours	**16**
Spring		
CHEM 222	Organic Chemistry II	3
CHEM 223 or CHEM 225	Organic Chemistry II Lab or Organic Chemistry II Lab for Molecular Sciences	1
CHEM 360	Analytical Chemistry and Lab	4
University Core		4
University Core		4
	Semester Hours	**16**
Junior Year		
Fall		
CHEM 340	Physical Chemistry	3
CHEM 341	Physical Chemistry Lab	1
CHEM 370	Biochemistry	3
CHEM 371	Biochemistry Lab	1
CHEM 390	Chemistry Seminar	1
University Core		4
University Core		4
	Semester Hours	**17**
Spring		
CHEM 342	Advanced Physical Chemistry	3
CHEM 391	Chemistry Seminar	1
CHEM Upper Division Elective		3
University Core/Elective [1]		4
Elective		3-4
	Semester Hours	**14-15**
Senior Year		
Fall		
CHEM 330	Inorganic Chemistry	3
CHEM 331	Inorganic Chemistry Lab	1
CHEM 491	Chemistry Seminar	1
Upper Division Elective		3-4
Elective		3-4
Elective		3-4
	Semester Hours	**14-17**
Spring		
CHEM 490	Chemistry Seminar	1
CHEM Upper Division Elective		3
CHEM Upper Division Elective		3
Upper Division Elective		3-4
Elective		3-4
Dean's list requires minimum 14 semester hours.		
	Semester Hours	**13-15**
	Minimum Semester Hours	**123-130**

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Chemistry majors are required to complete 32 semester hours of core courses to satisfy the University Core requirements.