

THE CHEMISTRY MAJOR (BA OR BS)

Professor: Anthony K. Grafton

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Assistant Professors: Barry Gehm

Visiting Assistant Professor: Carl Hollandsworth

The chemistry major is designed to guide students toward understanding the principles underlying the composition, structure, and properties of substances—both natural and man-made—and the transformations they undergo. The program emphasizes helping students become knowledgeable observers and independent, imaginative problem-solvers, using state-of-the-art equipment in a laboratory setting.

Both Bachelor of Science and Bachelor of Arts degrees are available in chemistry. The B.S. is designed primarily for students who wish to pursue graduate studies within the chemical sciences or seek employment in chemistry related fields. Students planning to enter health-allied professional schools may choose either the B.S. or B.A. degree

MTH 230, CHM 224, and CHM 356 are recommended for those planning to pursue graduate education in chemistry or employment in the chemical industry.

MTH 220 Calculus II is recommended for students who want to pursue a B.A. degree.

NOTES

* Students may take CHM 105, CHM 110, MTH 210, and PHY 240/241 to satisfy core requirements.

* CHM 105 is not required for students who enter Lyon College with a score of 25 or better on the ACT mathematics section (or equivalent SAT score) and a grade of "C" or better in high school chemistry.

NOTE: To graduate with a Bachelor of Arts or Bachelor of Science degree from Lyon College, students must successfully complete a minimum of 120 semester credit hours comprised of our required Core curriculum (44-48 hours), the requirements of at least one major (credit hours vary per major), and a selection of our Liberal Arts electives. They must also earn at least a 2.00 cumulative grade point average for all work taken at Lyon College and a 2.00 cumulative grade point average in their major, minor, and concentration.

Program: Chemistry

SUMMARY OF REQUIREMENTS FOR A MAJOR IN CHEMISTRY LEADING TO A BACHELOR OF SCIENCE DEGREE

Item #	Title	Credits
CHM 105	Introduction to Chemistry	4
CHM 110	General Chemistry I	4
CHM 120	General Chemistry II	4
CHM 210	Organic Chemistry I	4
CHM 220	Organic Chemistry II	4
CHM 302	Instrumental Analysis	4
CHM 350	Chemical Thermodynamics and Kinetics	4
CHM 360	Quantum Chemistry and Spectroscopy	4

CHM 370	Junior Seminar	1
CHM 413	Advanced Inorganic Chemistry	4
CHM 490	Senior Seminar	1
MTH 210	Calculus I	4
MTH 220	Calculus II	4
PHY 240	Fundamentals of Physics I	3
PHY 241	Fundamentals of Physics I Laboratory	1
PHY 250	Fundamentals of Physics II	3
PHY 251	Fundamentals of Physics II Laboratory	1
	Chemistry Elective (3-4 credits)	3 - 4
	Core Curriculum Requirements	44 - 48
	Sub-Total Credits	97-101

SUMMARY OF REQUIREMENTS FOR A MAJOR IN CHEMISTRY LEADING TO A BACHELOR OF ARTS DEGREE

Item #	Title	Credits
CHM 105	Introduction to Chemistry	4
CHM 110	General Chemistry I	4
CHM 120	General Chemistry II	4
CHM 210	Organic Chemistry I	4
CHM 220	Organic Chemistry II	4
CHM 302	Instrumental Analysis	4
CHM 350	Chemical Thermodynamics and Kinetics	4
CHM 370	Junior Seminar	1
CHM 490	Senior Seminar	1
MTH 210	Calculus I	4
	General Physics or Fundamentals of Physics	8
	Chemistry Elective (3-4 credits)	3 - 4
	Core Curriculum Requirements	44 - 48
	Sub-Total Credits	85-89

CATEGORY DESCRIPTIONS

Chemistry Elective (3-4 credits)

Select one of the following:

Item #	Title	Credits
CHM 224	Quantitative Analysis	4
CHM 304	Environmental Chemistry	4
CHM 356	Biochemistry	4
CHM 482	Topics in Chemistry	3

Core Curriculum Requirements

Developmental requirements (up to 6 credits):

Taken in the first semester, if placed into it:

- ENG 001 College English

Taken in the first year, if placed into it:

- MTH 001 Intermediate Algebra

Proficiency requirements (15 credits):

Taken in the first two years, if not placed out of it:

- MTH 101 College Algebra or
- MTH 103 College Algebra w/Lab or
- MTH 105 Mathematics for Liberal Arts

Taken in the first year (depending on placement):

- ENG 101 English Composition I (taken immediately if placed into it or immediately following completion of ENG 001 with a grade of 'C' or better)
- ENG 102 English Composition II (taken immediately following successful completion of ENG 101 with a grade of 'C' or better)

Recommended but not required in the first year:

- First-year of a foreign language

Common Core requirements (13–14 credits):

Taken in the first year (or within one year of completing any pre-requisite coursework):

- COR 100 Year One
- COR 101 Year One OH ONE

Taken anytime in the first TWO years:

- ENG 105 World Literature

- POL 105 The American Experience

Taken anytime prior to graduation:

- HIS 110 World Civilization
- HIS 112 World Civilization II

Distribution requirements:

One fine arts course (3 credits)

Select from the following:

- ART 101 Introduction to Visual Arts
- ART 201, 202 World Art I and II
- MUS 105 Language of Music
- MUS 110 Music Theory
- THE 101 Introduction to Theatre

One social science course (3 credits)

Select from the following:

- ANT 101 Introduction to Cultural Anthropology
- ECO 101 Principles of Economics I
- PSY 101 Introduction to Psychology

One mathematics course (3-4 credits)

Select from the following:

- MTH 105 Mathematics for Liberal Arts
- MTH 110 Elementary Functions
- MTH 115 Discrete Mathematics or MTH 290 Foundations of Modern Mathematics
- ECO 208 Quantitative Methods in Business, Economics, and Decision Science
- MTH 210 Calculus I
- BUS 323 Statistical Applications to Business Decision Making
- PSY 235 Statistics for the Behavioral Sciences

One lab science course (4 credits)

Select from the following:

- BIO 100, 100L Biology in Context
- BIO 110, 110L Principles of Biology I
- CHM 105, 105L Introduction to Chemistry
- CHM 110, 110L General Chemistry I

- PHY 210, 211 General Physics
- PHY 240, 241 Fundamentals of Physics
- SCI 100, 100L Physical Science for Liberal Arts

One religion/philosophy course (3 credits)

Select from the following:

- RPH 110 Old Testament
- RPH 120 New Testament
- RPH 130 Introduction to Christian Theology
- RPH 140 Introduction to World Philosophies
- RPH 150 World Religions
- RPH 205 Introduction to Ethics

Two physical education courses (0-2 credits)

Select from the following:

- PED courses with designations from 101 to 130
- OLP courses with designations from 120 to 130

NOTE: Only one activity (specified PED/OLP) course can be taken per semester. Additionally, only seven activity credits can be counted toward the graduation requirement.

General Physics or Fundamentals of Physics

Select one of the following course sequences:

GENERAL PHYSICS

Item #	Title	Credits
PHY 210	General Physics I	3
PHY 211	General Physics I Laboratory	1
PHY 220	General Physics II	3
PHY 221	General Physics II Laboratory	1

FUNDAMENTALS OF PHYSICS

Item #	Title	Credits
PHY 240	Fundamentals of Physics I	3
PHY 241	Fundamentals of Physics I Laboratory	1

PHY 250	Fundamentals of Physics II	3
PHY 251	Fundamentals of Physics II Laboratory	1