

Chemistry

Major Requirements

The major requirements for the B.A. and the B.S. degree in Chemistry are as follows:

Bachelor of Arts

1. Lower-division requirements (51-53 units)

a) CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC (or CHEM 01HA and CHEM 1HLA, CHEM 01HB and CHEM 1HLB, CHEM 01HC and CHEM 1HLC), CHEM 005

b) MATH 008B or MATH 009A, MATH 009B, MATH 009C, MATH 010A

c) PHYS 040A, PHYS 040B, PHYS 040C (or PHYS 002A, PHYS 002B, PHYS 002C, PHYS 02LA, PHYS 02LB, PHYS 02LC)

2. Upper-division requirements (38 units)

A minimum grade of "C-" for any upper-division course used to fulfill the requirements for the B.A. degree.

a) CHEM 110A, CHEM 110B, CHEM 112A, CHEM 112B, CHEM 112C, CHEM 113, CHEM 125, CHEM 150A, CHEM 191, and either CHEM 111 or CHEM 166

b) Ten (10) additional upper-division units in Chemistry if the year of organic chemistry is taken at a community college.

Bachelor of Science

1. Lower-division requirements (64-66 units)

a) CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC (or CHEM 01HA and CHEM 1HLA, CHEM 01HB and CHEM 1HLB, CHEM 01HC and CHEM 1HLC), CHEM 005

b) MATH 008B or MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B, MATH 046

c) PHYS 040A, PHYS 040B, PHYS 040C, PHYS 040D

2. Upper-division requirements (50 units)

A minimum grade of "C-" for any upper-division course used to fulfill the requirements for the B.S. degree.

a) CHEM 110A, CHEM 110B, CHEM 111, CHEM 112A, CHEM 112B, CHEM 112C, CHEM 113, CHEM 125, CHEM 150A, CHEM 191

b) Two laboratory courses from CHEM 140, CHEM 166, BCH 102

c) One course from BCH 110A, CHEM 135/ENSC 135/ENTX 135, CHEM 136/ENSC 136/ENTX 136/SWSC 136, CHEM 150B

Chemical Physics Option

Students must consult with their Chemistry advisor before electing this option.

1. Lower-division requirements (64-66 units)

a) CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC (or CHEM 01HA and CHEM 1HLA, CHEM 01HB and CHEM 01HLB, CHEM 01HC and CHEM 1HLC), CHEM 005

b) MATH 008B or MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B, MATH 046

c) PHYS 040A, PHYS 040B, PHYS 040C, PHYS 040D

2. Upper-division requirements (74 units)

A minimum grade of "C-" for any upper-division course used to fulfill the requirements for the Chemical Physics option.

a) CHEM 110A, CHEM 110B, CHEM 111, CHEM 112A, CHEM 112B, CHEM 112C, CHEM 113, CHEM 140, CHEM 150A, CHEM 150B, CHEM 191

b) Twenty-four (24) units of upper-division course work in Mathematics or Physics (110 or above excluding 190 series)

c) Nine (9) additional units in physical chemistry

Environmental Chemistry Option

Students must consult with their Chemistry advisor before electing this option.

1. Lower-division requirements (76-78 units)

a) CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC (or CHEM 01HA and CHEM 1HLA, CHEM 01HB and CHEM 1HLB, CHEM 01HC and CHEM 1HLC), CHEM 005

b) MATH 008B or MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B, MATH 046

c) PHYS 040A, PHYS 040B, PHYS 040C, PHYS 040D

d) BIOL 005A, BIOL 05LA, BIOL 005B, BIOL 005C

2. Upper-division requirements (66-67 units)

A minimum grade of "C-" for any upper-division course used to fulfill the requirements for the Environmental Chemistry option.

a) CHEM 110A, CHEM 110B, CHEM 111, CHEM 112A, CHEM 112B, CHEM 112C, CHEM 113, CHEM 125, CHEM 135/ENSC 135/ENTX 135, CHEM 136/ENSC 136/ENTX 136/SWSC 136, CHEM 140, CHEM 150A, CHEM 166, CHEM 191

b) One course from ENSC 104/SWSC 104 or GEO 137

c) Two additional courses from CHEM 150B, CHEM 197, CHEM 199, ENSC 100, ENSC 101, ENSC 102, ENSC 104/SWSC 104, ENSC 140/SWSC 140, ENSC 142, ENSC 155, ENSC 163, ENTX 101, GEO 132, GEO 137, GEO 157 (4 units total from CHEM 197 and/or CHEM 199)

Undergraduate Research is strongly encouraged for students with the requisite ability. Students wishing to participate in this activity should consult Chemistry faculty, their Chemistry advisor, or visit the CNAS Undergraduate Research at UCR Web site, at www.cnas-ugresearch.ucr.edu for research opportunities or check:

www.chem.ucr.edu/undergradresearch2008.html.

Sample Program

Student programs are planned on an individual basis with their advisors, and there is considerable flexibility in the sequence in which courses required for the major are taken. For example, PHYS 040A, PHYS 040B, PHYS 040C can be started equally well during either the freshman or sophomore year. The sample program is typical for a well-prepared entering freshman who seeks the B.S. degree.

Freshman Year

Fall Winter Spring

CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC (or CHEM 01HA and CHEM 1HLA, CHEM 01HB and CHEM 1HLB, CHEM 01HC and CHEM 1HLC)
PHYS 040A, PHYS 040B
MATH 008B or MATH 009A, MATH 009B, MATH 009C
ENGL 001A, ENGL 001B, ENGL 001C
Elective (optional)

Total Units 17 18 18

Sophomore Year

Fall Winter Spring

CHEM 112A, CHEM 112B,
CHEM 112C
PHYS 040C, PHYS 040D
MATH 010A, MATH 010B,
MATH 046
CHEM 005
Electives

Total Units 18 13 16

Junior Year

Fall Winter Spring

CHEM 110A, CHEM 110B,
CHEM 113
CHEM 150A, CHEM 150B
Biological Science
w/Lab, CHEM 125, CHEM 191
Electives

Total Units 16 17 17

Senior Year

Fall Winter Spring

CHEM 111, CHEM 140
CHEM 166
Electives

Total Units 12 12 12

Minor

The minor in Chemistry consists of 28 upper-division units in chemistry.

1. Of the specified upper-division units, a minimum of 16 units must be unique to the minor and may not be used to satisfy major requirements.
2. At least one of the courses used to satisfy the 28 units must be in CHEM 125, CHEM 111, CHEM 140 or CHEM 166 (courses which include laboratory work).
3. No more than 4 units of 190-199 courses may be used in fulfilling the upper-division units for a minor.

All of the upper-division courses in chemistry have a prerequisite of CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC, or CHEM 01HA and CHEM 1HLA, CHEM 01HB and CHEM 1HLB, CHEM 01HC and CHEM 1HLC and most have CHEM 005 as a prerequisite.

Students with a minor in Chemistry should consult with their Chemistry advisor to construct a specific program consistent with their career goals.

See Minors under the College of Natural and Agricultural Sciences in the Colleges and Programs section of this catalog for additional information on minors.