CHEMISTRY
Bachelor of Science in Chemistry

COURSE | TITLE | S.H.
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FIRST YEAR REQUIREMENT - STUDENT SUCCESS
YSU 1500 | Success Seminar | 1-2
or SS 1500 | Strong Start Success Seminar | 1-2
or HONR 1500 | Intro to Honors | 1-2

General Education Requirements
ENGL 1550 | Writing 1 | 3-4
or ENGL 1549 | Writing 1 with Support | 3-4
ENGL 1551 | Writing 2 | 3
CMST 1545 | Communication Foundations | 3

Mathematics requirement (met through MATH in major)

Some courses are categorized in more than one Knowledge Domain.
Courses can only be used once within the GE model.

Arts and Humanities (6 s.h.)

Social Science (6 s.h.)

Natural Sciences (2 courses, 1 with lab) (6-7 s.h.)
Requirement is met through science courses in the major

Social and Personal Awareness (6 s.h.)

Total Semester Hours: 120-122

The following CHEM core courses are required (39 s.h.)
Grade of 'C' or better is required. Courses cannot be taken 'CR/NC'

CHEM 1515 & 1515L | General Chemistry 1 and General Chemistry 1 Laboratory | 4
CHEM 1515R | Recitation for General Chemistry 1 | 1
CHEM 1516 & 1516L | General Chemistry 2 and General Chemistry 2 Laboratory | 4
CHEM 1516R | Recitation for General Chemistry 2 | 1
CHEM 2604 & 2604L | Quantitative Analysis and Quantitative Analysis Laboratory | 5
CHEM 3719 & 3719L | Organic Chemistry 1 and Organic Chemistry 1 Laboratory | 4
CHEM 3719R | Organic Chemistry Recitation 1 | 1
CHEM 3720 & 3720L | Organic Chemistry 2 and Organic Chemistry 2 Laboratory | 4
CHEM 3729 | Inorganic Chemistry | 3
CHEM 3739 & 3739L | Physical Chemistry 1 and Physical Chemistry 1 Laboratory | 4
CHEM 3740 & 3740L | Physical Chemistry 2 and Physical Chemistry 2 Laboratory | 4
CHEM 3785 | Biochemistry 1 | 3

The following capstone is required (3 s.h.)

CHEM 4850 | Chemistry Research | 1

The following non-CHEM courses are required (22 s.h.)

MATH 1571 | Calculus 1 | 4
MATH 1572 | Calculus 2 | 4
MATH 2673 | Calculus 3 | 4
PHYS 2610 & 2610L | General Physics 1 and General Physics Laboratory 1 | 5
PHYS 2611 & 2611L | General Physics 2 and General Physics laboratory 2 | 5

Electives:
Select 12 hours of upper-division chemistry electives (from the list below) 12
4 hours of which must be in upper-division laboratory.

Year 1

Fall

S.H.

YSU 1500 | Success Seminar | 1
CHEM 1515 & 1515L | General Chemistry 1 and General Chemistry 1 Laboratory | 4
CHEM 1515R | Recitation for General Chemistry 1 | 1
MATH 1571 | Calculus 1 | 4
ENGL 1550 | Writing 1 | 3-4

Semester Hours: 13-14

Spring

CHEM 1516 & 1516L | General Chemistry 2 and General Chemistry 2 Laboratory | 4
CHEM 1516R |Recitation for General Chemistry 2 | 1
MATH 1572 | Calculus 2 | 4
ENGL 1551 | Writing 2 | 3
GER | | 3

Semester Hours: 15

Year 2

Fall

CHEM 3719 & 3719L | Organic Chemistry 1 and Organic Chemistry 1 Laboratory | 4
CHEM 3719R | Organic Chemistry Recitation 1 | 1
MATH 2604 & 2604L | Quantitative Analysis and Quantitative Analysis Laboratory | 5
PHYS 2610 & 2610L | General Physics 1 and General Physics Laboratory 1 | 5

Semester Hours: 15

Spring

CHEM 3720 & 3720L | Organic Chemistry 2 and Organic Chemistry 2 Laboratory | 4
Electives must include courses to fulfill the students chosen minor. Typically for Chemistry majors, the minor will be in Mathematics, Physics or Biology.

**Learning Outcomes**

- Undergraduate students will demonstrate an understanding of the basic principles of the chemical disciplines included in their curriculum.
- Undergraduate students will demonstrate independent and critical thinking.
- Undergraduate students will demonstrate an understanding of the fundamentals of modern chemical instrumentation.
- Undergraduate students will effectively communicate their ideas both orally and in writing.
- Undergraduate students will acquire basic research skills including planning and performing an experiment and analyzing the results.