Chemistry B.S.

Click here to view the Suggested Plan of Study (p. 3)

General Education Foundations

Please use this link to view a list of courses that meet each GEF requirement. (http://registrar.wvu.edu/gef)

NOTE: Some major requirements will fulfill specific GEF requirements. Please see the curriculum requirements listed below for details on which GEFs you will need to select.

**General Education Foundations**

F1 - Composition & Rhetoric

- ENGL 101
- ENGL 102
- ENGL 103

Introduction to Composition and Rhetoric or Accelerated Academic Writing

F2A/F2B - Science & Technology

- ENGL 103: Accelerated Academic Writing

Total Hours: 3-6

F3 - Math & Quantitative Skills

MATH 153 & MATH 154: Calculus 1a with Precalculus and Calculus 1b with Precalculus

Total Hours: 3-4

F4 - Society & Connections

Total Hours: 3

F5 - Human Inquiry & the Past

Total Hours: 3

F6 - The Arts & Creativity

Total Hours: 3

F7 - Global Studies & Diversity

Total Hours: 3

F8 - Focus (may be satisfied by completion of a minor, double major, or dual degree)

Total Hours: 9

Total Hours: 31-37

Please note that not all of the GEF courses are offered at all campuses. Students should consult with their advisor or academic department regarding the GEF course offerings available at their campus.

Degree Requirements

Students must complete WVU General Education Foundations requirements, College B.S. requirements, major requirements, and electives to total a minimum of 120 hours. For complete details on these requirements, visit the B.S. Degrees tab on the Eberly College of Arts and Sciences (http://catalog.wvu.edu/undergraduate/eberlycollegeofartsandsciences/#bachelorofsciencetext) page. Students may not earn both a B.A. and a B.S. in Chemistry.

Departmental Requirements for the B.S. in Chemistry

- **Capstone Requirement**: The university requires the successful completion of a Capstone course, which for the B.S. Chemistry degree involves CHEM 401 and CHEM 403.

- **Writing Requirement**: Chemistry Bachelor of Science fulfill the Writing and Communication Skills requirement by completing ENGL 101 and ENGL 102 (or ENGL 103), and two additional SpeakWrite Certified Courses™: CHEM 349, and either CHEM 401 or CHEM 403.

- **Calculation of GPA in the major**: A grade of C- or better in all chemistry courses below 300-level is required. In addition, a grade of C- or better is required in the following courses: PHYS 111 and PHYS 112; MATH 155 (or MATH 153 and MATH 154), MATH 156, and MATH 251; a 2.0 average must be maintained in all Chemistry 300-level or above courses, excluding 490–497 courses.

- **Benchmarks expectations**: For details, go to the chemistry admissions tab (http://catalog.wvu.edu/undergraduate/eberlycollegeofartsandsciences/bennetdepartmentofchemistry/#admissionstext).

Curriculum Requirements

**UNIVERSITY REQUIREMENTS**

- CHEM 191: First-Year Seminar

  GEF: Number of courses may vary depending on overlap

**COLLEGE REQUIREMENT**

- Global Studies and Diversity Requirement

- MATH 153: Calculus 1a with Precalculus
- MATH 154: and Calculus 1b with Precalculus
Chemistry B.S.

DEPARTMENTAL REQUIREMENTS

Core Chemistry courses: 45

Select one of the following options:

1. CHEM 115 & CHEM 116
   - Fundamentals of Chemistry
   - Fundamentals of Chemistry

2. CHEM 215
   - Introductory Analytical Chemistry

OR

1. CHEM 117 & CHEM 118
   - Principles of Chemistry
   - Principles of Chemistry

Take all courses:

CHEM 233
- Organic Chemistry

CHEM 234
- Organic Chemistry

CHEM 235
- Organic Chemistry Laboratory

CHEM 236
- Organic Chemistry Laboratory

CHEM 310
- Instrumental Analysis

CHEM 313
- Instrumental Analysis Laboratory

CHEM 335
- Methods of Structure Determination

CHEM 346
- Physical Chemistry

CHEM 347
- Physical Chemistry Laboratory

CHEM 348
- Physical Chemistry

CHEM 349
- Physical Chemistry Laboratory

CHEM 422
- Intermediate Inorganic Chemistry

CHEM 423
- Inorganic Synthesis Laboratory

AGBI 410
- Introductory Biochemistry

Non-Chemistry Science Requirement 16

MATH 156
- Calculus 2

MATH 251
- Multivariable Calculus

PHYS 111 & PHYS 112
- General Physics
  - and General Physics

Chemistry Electives 6

Select 2 classes:

CHEM 312
- Environmental Chemistry

CHEM 339
- Organic Syntheses

CHEM 440
- Quantum Chemistry

CHEM 460
- Forensic Chemistry

CHEM 462
- Biochemistry 2

CHEM 463
- Forensic Chemistry Lab

CHEM 464
- Biochemistry 2 Laboratory

CHEM 490
- Teaching Practicum: Peer-Led Team Learning

CHEM 490A
- Teaching Practicum-CLC

CHEM 490B
- Teaching Practicum - TA

CHEM 496
- Senior Thesis

CHEM 497
- Research

CHEM 498
- Honors

CHEM 514
- Mass Spectrometry Principles and Practices

CHEM 516
- Bioanalytical Chemistry

CHEM 521
- Organometallic Chemistry

CHEM 531
- Advanced Organic Chemistry 1

CHEM 532
- Advanced Organic Chemistry 2

CHEM 540
- Bonding and Molecular Structure
### Suggested Plan of Study

#### First Year

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<th>Fall</th>
<th>Hours</th>
<th>Spring</th>
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#### Second Year

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#### Fourth Year

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Total credit hours: 120
If a student qualifies to take CHEM 117 and CHEM 118, these courses can be used in lieu of CHEM 115, CHEM 116, and CHEM 215. The student will need to take an additional 2 credit hours of Electives to reach the required minimum of 120 credit hours for graduation.