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		3-6
ENGL 101 & ENGL 102	Introduction to Composition and Rhetoric and Composition, Rhetoric, and Research	
or ENGL 103	Accelerated Academic Writing	
F2A/F2B - Science & Technology		4-6
F3 - Math & Quantitative Skills		3-4
F4 - Society & Connections		3
F5 - Human Inquiry & the Past		3
F6 - The Arts & Creativity		3
F7 - Global Studies & Diversity		3
F8 - Focus (may be satisfied by completion of a minor, double major, or dual degree)		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/bennettdepartmentofchemistry/#admissionstext).

Curriculum Requirements

UNIVERSITY REQUIREMENTS		19
CHEM 191	First-Year Seminar	
GEF: Number of courses may vary depending on overlap		
COLLEGE REQUIREMENT		4
Global Studies and Diversity Requirement		
MATH 153 & MATH 154	Calculus 1a with Precalculus and Calculus 1b with Precalculus	

OR		
MATH 155	Calculus 1	
Science Requirements - see Eberly page (may overlap with GEF and major)		
DEPARTMENTAL REQUIREMENTS		
Core Chemistry courses:		45
Select one of the following options:		
CHEM 115 & CHEM 116	Fundamentals of Chemistry and Fundamentals of Chemistry	
CHEM 215	Introductory Analytical Chemistry	
OR		
CHEM 117 & CHEM 118	Principles of Chemistry and 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	

CHEM 547	Chemical Crystallography	
CHEM 552	Biochemical Toxicology	
Capstone Experience		2
CHEM 401	Chemical Literature	
CHEM 403	Undergraduate Seminar	
General Electives		28
Number of Electives may vary depending on overlap		
Total Hours		120

FOOTNOTES

* Only three hours of CHEM 490, CHEM 493, CHEM 496 or CHEM 497, separately or combined, may be counted toward the six-hour requirement.

Suggested Plan of Study

First Year

Fall	Hours	Spring	Hours
CHEM 191	1	ENGL 101 (GEF 1)	3
GEF 4	3	CHEM 116 (GEF 8; B.S. First Area 2)*	4
ECAS Global Studies and Diversity Requirement (GEF 7)	3	MATH 156 (GEF 8; B.S. Second Area 1)	4
CHEM 115 (GEF 2; B.S. First Area 1)*	4	General Elective	3
MATH 155 (GEF 3)	4	General Elective	1
	15		15

Second Year

Fall	Hours	Spring	Hours
CHEM 215*	4	ENGL 102 (GEF 1)	3
CHEM 233 & CHEM 235	4	GEF 5	3
MATH 251 (B.S. Second Area 2)	4	CHEM 234 & CHEM 236	4
PHYS 111 (GEF 8; B.S. Third Area 1)	4	PHYS 112 (B.S. Third Area 2)	4
	16		14

Third Year

Fall	Hours	Spring	Hours
GEF 6	3	CHEM 310	3
AGBI 410	3	CHEM 348 & CHEM 347	4
CHEM 335	4	General Elective	3
CHEM 346	3	General Elective	4
General Elective	3		
	16		14

Fourth Year

Fall	Hours	Spring	Hours
CHEM 349	2	CHEM 403 (Capstone)	1
CHEM 313	1	CHEM 423	2
CHEM 401 (Capstone)	1	Chemistry Elective 2	3
CHEM 422	3	General Elective	3
Chemistry Elective 1	3	General Elective	3
General Elective	3	General Elective	3
General Elective	2		
	15		15

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.