

B.S. in Chemistry, ACS-Certified Concentration**Suggested Course Sequence for 8-semester plan***See catalog for additional guidelines and requirements (catalog.wcu.edu)***Freshman Year**

Fall		Spring	
<i>Course</i>	<i>Credits</i>	<i>Course</i>	<i>Credits</i>
†CHEM 139* - General Chemistry I	4	†CHEM 140* - General Chemistry II	4
MATH 153 - Calculus I	4	MATH 255 - Calculus II	4
1 st yr. seminar or ENGL 101	3	1 st yr. seminar or ENGL 101	3
LS** or elective	3	LS or elective	3
<i>Total credit hours:</i>	14	<i>Total credit hours:</i>	14
<i>Hours per week spent in class and lab:</i>	16	<i>Hours per week spent in class and lab:</i>	16

Sophomore Year

Fall		Spring	
<i>Course</i>	<i>Credits</i>	<i>Course</i>	<i>Credits</i>
†CHEM 232* - Quantitative Analysis or PHYS 230* - Physics I	4	†PHYS 230* - General Physics I or CHEM 232* - Quant. Analysis	4
†CHEM 241* - Organic Chemistry I	4	†CHEM 242* - Organic Chemistry II	4
MATH Choice	3 or 4	LS or elective or ENGL 202	3
LS or elective or ENGL 202	3	LS or elective	3
		LS or elective	3
<i>Total credit hours:</i>	14 or 15	<i>Total credit hours:</i>	17
<i>Hours per week spent in class and lab:</i>	18 or 19	<i>Hours per week spent in class and lab:</i>	21

Junior Year

Fall		Spring	
<i>Course</i>	<i>Credits</i>	<i>Course</i>	<i>Credits</i>
CHEM 352 - Physical Chem.: Thermo.	3	†CHEM 361 - Principles of Biochemistry	3
†CHEM 380* - Research in Chemistry	2	†CHEM 370* - Instrumental Analysis I	4
†PHYS 231* - General Physics II	4	†CHEM 380* - Research in Chemistry	2
†CHEM 372* - Chem. Therm. Lab or LS or elective	1 or 3	LS or elective	3 or 1
		or †CHEM 372* - Chem. Therm. Lab	
CHEM 495 - Seminar	1	LS or elective	3
LS or elective	3	LS or elective	3
<i>Total credit hours:</i>	14 or 16	<i>Total credit hours:</i>	18 or 16
<i>Hours per week spent in class and lab:</i>	26 or 23	<i>Hours per week spent in class and lab:</i>	24 or 27

Senior Year

Fall		Spring	
<i>Course</i>	<i>Credits</i>	<i>Course</i>	<i>Credits</i>
†CHEM 321 - Inorganic Chemistry or LS or elective	3	LS or elective or †CHEM 321 - Inorganic Chemistry	3
CHEM 435* - Instrumental Analysis II	3	CHEM 453 - Physical Chem.: Quantum	3
CHEM 472* - Chemical Syntheses	1	CHEM 471* - Inorganic Syntheses	1
LS or elective	3	CHEM 475* - Biochemistry Laboratory	1
LS or elective	3	CHEM 473* - Quantum Chem. and Spec. Lab	1
LS or elective	3	LS or elective	3
<i>Total credit hours:</i>	16	<i>Total credit hours:</i>	12
<i>Hours per week spent in class and lab:</i>	20	<i>Hours per week spent in class and lab:</i>	18

† This course is offered every semester

** LS = liberal studies course

* This course has a laboratory component

**B.S. in Chemistry, ACS-Certified Concentration
Program Requirements (Effective Fall 2025)**

See catalog for additional guidelines and requirements (catalog.wcu.edu).

Term	Grade	Course	Hours
Liberal Studies (C2 and C5 courses are met with major requirements)			33
		First Year Seminar, 19X	3
		C1: ENGL 101 - Writing and Rhetoric	3
		C1: ENGL 202 - Writing and Critical Inquiry	3
		C3: COMM 201 - Foundations Communication	3
		C4: Wellness	3
		*P1: Social Science, course 1	3
		*P1: Social Science, course 2 (<i>must be from a different discipline than course 1</i>)	3
		*P3: History	3
		*P4: Humanities	3
		*P5: Fine & Performing Arts	3
		*P6: World Cultures	3
		<i>*Note: at least one of the LS perspectives must be at the junior-senior level *Students entering WCU Fall 2025 and later must take either HIST 131(P1) or PSC 101(P1) to fulfill the Foundations of American Democracy requirement.</i>	

Chemistry Core (note that some courses have grade prerequisites)			47
		CHEM 139 - General Chemistry I	4
		CHEM 140 - General Chemistry II (C- or better in CHEM139 lecture or B or better in CHEM132 required)	4
		CHEM 232 - Quantitative Analysis (passing grade in either MATH146 or MATH153 and a C- or better in CHEM140 lecture required)	4
		CHEM 241 - Organic Chemistry I (C- or better in CHEM140 lecture required)	4
		CHEM 242 - Organic Chemistry II (C- or better in CHEM241 lecture required)	4
		CHEM 321 - Inorganic Chemistry (C- or better in CHEM140 lecture required)	3
		CHEM 352 - Physical Chemistry: Chemical Thermodynamics (C- or better in CHEM232 and C- or better MATH153 required)	3
		CHEM 361 - Principles of Biochemistry (C- or better in CHEM242 lecture required)	3
		CHEM 370 - Instrumental Analysis I (C- or better in both CHEM232 and CHEM241 (lecture) required)	4
		CHEM 372 - Chemical Thermodynamics Laboratory (Simultaneous enrollment or passing grade in CHEM352 required)	1
		CHEM 495 - Seminar in Chemistry	1
		MATH 153 - Calculus I (MATH146 or placement required)	4
		PHYS 230 - General Physics I (MATH152 or MATH153 required)	4
		PHYS 231 - General Physics II (Passing grade in PHYS230 required)	4

ACS-Certified Concentration			21 or 22
		CHEM 380 - Research in Chemistry (take at least two 2-credit sections)	4
		CHEM 435 - Instrumental Analysis II (Passing grade in CHEM370 and simultaneous enrollment or passing grade in CHEM352 required)	3
		CHEM 453 - Physical Chemistry: Quantum Chemistry and Spectroscopy (Passing grade in both MATH255 and PHYS230; C- or better in CHEM232 required)	3
		CHEM 471 - Inorganic Syntheses (C- or better in both CHEM242 (lecture and lab) and CHEM321 required)	1
		CHEM 472 - Organic Syntheses (C- or better in CHEM242 (lecture and lab) required)	1
		CHEM 473 - Quantum Chemistry and Spectroscopy Laboratory (Simultaneous enrollment or passing grade in CHEM453 or CHEM 553 required)	1
		CHEM 475 - Biochemistry Laboratory (C- or better in BIOL361 or CHEM361 required)	1
		MATH 255 - Calculus II (Passing grade in MATH153 required)	4
		MATH Choice (MATH 256, MATH 270, MATH 320, MATH 340)	3 or 4

General Electives (Suggested Electives: ENGL 402 (3), CS 150 (4), CS 151 (4))			18 or 19

Graduation Check

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| ☐ 30 hours of 300-400 level classes at WCU | ☐ GPA in major $\geq$ 2.0 |
| ☐ Upper-level perspective | ☐ 120 total hours |