

B.S. IN CHEMISTRY-BIOLOGY

Curriculum

Code	Title	Credits
GENERAL EDUCATION REQUIREMENTS (https://catalog.wcupa.edu/undergraduate/general-education-requirements/)		
Academic Foundations		
	First Year Experience requirement	4
	English Composition requirement	6-7
	Mathematics requirement ¹	3-4
	MAT 161 Calculus I	
	Interdisciplinary requirement	3
	PHI 371 Medical Ethics	
	Diverse Communities requirement	3
	Ethics requirement	3
Distributed Disciplinary Foundations		
	Science requirement ¹	6-8
	BIO 110 General Biology I	
	PHY 130 General Physics I ²	
	or PHY 170 Physics I	
	Behavioral & Social Science requirement	6
	Humanities requirement	6
	Arts requirement	3
ADDITIONAL BACCALAUREATE REQUIREMENTS (https://catalog.wcupa.edu/undergraduate/general-education-requirements/)		
University Requirements		
	Writing Emphasis requirement	9
	Speaking Emphasis requirement	9
Degree Requirements		
	Capstone requirement	1-15
MAJOR REQUIREMENTS		
Core Courses ¹		
CHE 103	General Chemistry I	3
CHE 104	General Chemistry II	3
CHE 231	Organic Chemistry I	4
CHE 232	Organic Chemistry II	3
CHE 321	Analytical Chemistry I	3
CHE 476	Biochemistry I	3
CRL 103	General Chemistry I Lab	1
CRL 104	General Chemistry II Lab	1
CRL 231	Organic Chemistry I Lab	2
CRL 321	Analytical Chemistry I Lab ³	2
MAT 121	Introduction to Statistics I	3
or MAT 125	Introduction to Statistics and Probability	
Other Required Courses ¹		
BIO 111	General Biology II	4
BIO 210	Genetics	3
BIO 357	Comparative Vertebrate Anatomy	4
BIO 468	Comparative Vertebrate Physiology	4
or BIO 469	Human Physiology	
CHE 345	Physical Chemistry for the Life Sciences	3
CHE 418	Chemical Information	1
CRL 476	Biochemistry I Lab	2
PHY 140	General Physics II ²	4

or PHY 180 Physics II

Concentration Electives ^{1,3}		
Selected from advanced standing chemistry courses, except CHE 310.		6
Capstone Requirement		
CHE 491	Seminar in Chemistry ^{1,4}	1
Total Minimum Credits Required		120

- ¹ A grade of C- or better is necessary in all required science and mathematics courses.
- ² Either PHY 130 & PHY 140 OR PHY 170 & PHY 180 may be taken. PHY 130 may not be used as a prerequisite for PHY 180 and PHY 170 may not be used as a prerequisite for PHY 140.
- ³ Students may, with the permission of the department chair and the coordinator of the pre-medical program, substitute an approved 6-12 credit internship for selected requirements and concentration electives. The courses with this footnote would be replaced by the internship.
- ⁴ This course fulfills the Capstone requirement.

Sample Course Plan

To track their individual degree progress, students are advised to access their Degree Audit via RamPortal regularly. For more information, visit the Degree Audit FAQ webpage (<https://www.wcupa.edu/academicEnterpriseSystems/student-system-modernization/degree-audit-faqs.aspx>).

The following is a sample suggested course sequence for this program; course offerings and availability are not guaranteed. Students should consult their academic advisor with any questions.

Course	Title	Credits
Year One		
Fall		
CHE 103 & CRL 103	General Chemistry I and General Chemistry I Lab	4
BIO 110	General Biology I	4
MAT 161	Calculus I	4
FYE 100X	First Year Experience	4
Credits		16
Spring		
CHE 104 & CRL 104	General Chemistry II and General Chemistry II Lab	4
BIO 111	General Biology II	4
WRT 120	Effective Writing I	3
MAT 121	Introduction to Statistics I	3
or MAT 125	or Introduction to Statistics and Probability	
Student Elective		3
Credits		17
Year Two		
Fall		
CHE 231 & CRL 231	Organic Chemistry I and Organic Chemistry I Lab	6
BIO 210	Genetics	3
PHY 130	General Physics I	4
or PHY 170	or Physics I	
WRT 2XX	200-Level WRT Course	3
Credits		16
Spring		
CHE 232	Organic Chemistry II	3

PHY 140 or PHY 180	General Physics II or Physics II	4
Behavioral & Social Science Gen Ed		3
Humanities Gen Ed		3
Student Elective		3
Department Safety Examination		
Credits		16
Year Three		
Fall		
CHE 321	Analytical Chemistry I	3
CHE 418	Chemical Information	1
CHE 476 & CRL 476	Biochemistry I and Biochemistry I Lab	5
BIO 357	Comparative Vertebrate Anatomy	4
Credits		13
Spring		
BIO 468	Comparative Vertebrate Physiology ¹	4
CHE XXX	Chemistry Elective ^{2,3,4}	4
Arts Gen Ed		3
Student Elective		3
Credits		14
Year Four		
Fall		
CHE 345	Physical Chemistry for the Life Sciences	3
CRL 321	Analytical Chemistry I Lab ⁴	2
PHI 371	Medical Ethics	3
CHE XXX	Chemistry Elective	3
Student Elective		3
Credits		14
Spring		
CHE 491	Seminar in Chemistry	1
CHE XXX	Chemistry Elective ^{2,4}	3
Humanities Gen Ed		3
Student Elective		3
Student Elective		4
Credits		14
Total Credits		120

¹ BIO 469 will also satisfy this requirement; however, be aware that it is only offered in the fall.

² Biology and chemistry electives must be at the 300 level or above.

³ A 3-credit course would also be acceptable here, provided that the student takes enough classes to meet the 120 credit requirement.

⁴ Students may, with the permission of their academic advisor and department chair, substitute an approved internship in the biochemical or biomedical field. These 12 credit hours are replaced with a 12-credit-hour internship.