

B.S. IN CHEMISTRY-BIOLOGY

College of the Sciences and Mathematics

Curriculum

Code	Title	Credits
GENERAL EDUCATION REQUIREMENTS (http://catalog.wcupa.edu/undergraduate/general-education-requirements/)		
Academic Foundations		
First Year Experience requirement		4
English Composition requirement		6-7
Mathematics requirement ⁴		3-4
Interdisciplinary requirement		3
PHI 371	Medical Ethics	
Diverse Communities requirement		3
Ethics requirement		3
Distributed Disciplinary Foundations		
Science requirement ⁵		6-8
Behavioral & Social Science requirement		6
Humanities requirement		6
Arts requirement		3
ADDITIONAL BACCALAUREATE REQUIREMENTS (http://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 418	Chemical Information ¹	1
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 ¹	2
BIO 110	General Biology I	4
MAT 121	Introduction to Statistics I	3
or MAT 125	Introduction to Statistics and Probability	
MAT 161	Calculus I	4
Other Required Courses ¹		
BIO 111	General Biology II	4
BIO 210	Genetics	3
BIO 210L	Genetics Lab	1
BIO 211	Cell Biology	4
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
CRL 476	Biochemistry I Lab	2

Select one of the following sequences:	8
PHY 130 General Physics I & PHY 140 and General Physics II	
PHY 170 Physics I & PHY 180 and Physics II	
Concentration Electives ²	
Selected from upper-division chemistry and biology courses	9-10
Capstone Requirement	
CHE 491 Seminar in Chemistry ^{1,3}	1
Total Minimum Credits Required	120

¹ A grade of C- or better is necessary in all required science and mathematics courses.

² 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 (12 credits).

³ This course fulfills the Capstone requirement.

⁴ MAT 161 fulfills the Mathematics General Education requirement.

⁵ BIO 110 and PHY 130 (or PHY 170) fulfill the Science Distributive General Education requirements.

Sample Course Plan

To track their individual degree progress, students are advised to access their Degree Progress Report (DPR) via myWCU regularly. For more information, visit wcupa.edu/DegreeProgressReport (<http://wcupa.edu/degreeprogressreport/>).

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	General Chemistry I	4
& CRL 103	and General Chemistry I Lab	
BIO 110	General Biology I	4
MAT 161	Calculus I	4
FYE 100X	First Year Experience	4
Credits		16
Spring		
CHE 104	General Chemistry II	4
& CRL 104	and General Chemistry II Lab	
BIO 111	General Biology II	4
WRT 120	Effective Writing I	3
MAT 121	Introduction to Statistics I	3
or	or Introduction to Statistics and	
MAT 125	Probability	
Behavioral & Social Science Gen Ed		3
Credits		17
Year Two		
Fall		
CHE 231	Organic Chemistry I	6
& CRL 231	and Organic Chemistry I Lab	
BIO 210	Genetics	4
& 210L	and Genetics Lab	
PHY 130	General Physics I	4
or	or Physics I	
PHY 170		

WRT 2XX	200-Level WRT Course	3
Credits		17
Spring		
CHE 232	Organic Chemistry II	3
BIO 211	Cell Biology	4
PHY 140	General Physics II	4
or	or Physics II	
PHY 180		
Behavioral & Social Science Gen Ed		3
Student Elective		3
Department Safety Examination		
Credits		17
Year Three		
Fall		
CHE 321	Analytical Chemistry I	3
CHE 418	Chemical Information	1
CHE 476	Biochemistry I	5
& CRL 476	and Biochemistry I Lab	
BIO 357	Comparative Vertebrate Anatomy	4
Credits		13
Spring		
BIO 468	Comparative Vertebrate Physiology ¹	4
BIO/CHE XXX	Biology or 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
Humanities Gen Ed		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		2
Credits		12
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.