ADVISING SHEET:
B.S. in BIOCHEMISTRY
Effective Fall 2021

I. ACADEMIC FOUNDATIONS & DEGREE REQUIREMENTS

Requirement	*Course*	*Credits*	*Term*	*Year*	*Grade*
First Year Experience	FYE 100	4			
Effective Writing I	WRT 120	3			
Effective Writing II	WRT 2__ [1]	3			
Mathematics	MAT 161 [4,5]	4			
Interdisciplinary ("I")		3			
Diverse Communities ("J") [2]	PHI 180	3			
Ethics ("ET") [2]	PHI 180	3			

Writing Emphasis ("W") [2,3] *Nine credits, integrated across General Education & Major courses.*

One at 300/400-level					

Speaking Emphasis ("SE") [2,3] *Nine credits integrated across General Education & Major courses.*

One at 300/400-level					

II. GENERAL EDUCATION DISTRIBUTIVE REQUIREMENTS

- *Courses must be selected from the approved General Education list (see the catalog).*
- *Interdisciplinary ("I") courses cannot also be a General Education distributive course.*
- *Chemistry-Biology majors fulfill their Science requirements with BIO 110 and PHY 170.*
- *Distributive requirements can be simultaneously satisfied with other degree requirements.*

IV. Humanities (6 credits): e.g. Literature (LIT/CLS), History (HIS), Philosophy (PHI)
Courses must be selected from two different subject areas.

PHI 180	3			
	3			

B. Behavioral and Social Sciences (6 credits): e.g. Psychology (PSY), Sociology (SOC), Anthropology (ANT), Political Science (PSC), Geography (GEO), Economics (ECO)
Courses must be selected from two different subject areas.

	3			
	3			

C. Arts (3 credits): e.g. Art (ART), Art History (ARH), Dance (DAN), Film (FLM), Music (MHL, MTC), Theater (THA)

	3			

III. STUDENT ELECTIVES: 9 credits (or as many as needed to reach 120 total credits)

IV. SUPPORTING COURSES (16 credits)

Calculus I	MAT 161[4,5]	4			
Calculus II	MAT 162[4,5]	4			
Physics I	PHY 170[5]	4			
Physics II	PHY 180[5]	4			

V. CHEMISTRY COURSES (60 credits)

A. Required Courses (57 credits)

General Chemistry I	CHE 103[5]	3			
General Chemistry I Lab	CRL 103[5]	1			
General Chemistry II	CHE 104[5]	3			
General Chemistry II Lab	CRL 104[5]	1			
Organic Chemistry I	CHE 231[5]	4			
Organic Chemistry I Lab	CRL 231[5]	2			
Organic Chemistry II	CHE 232[5]	3			
Organic Chemistry II Lab	CRL 232[5]	2			
Analytical Chemistry I	CHE 321[5]	3			
Analytical Chemistry I Lab	CRL 321[5]	2			
Physical Chemistry I	CHE 341[5]	4			
Physical Chemistry I Lab	CRL 341[5]	2			
Physical Chemistry II	CHE 342[5]	3			
Physical Chemistry II Lab	CRL 342[5]	2			
Advanced Inorganic Chemistry	CHE 411[5]	3			
Inorganic Syntheses Lab	CRL 411[5]	2			
Chemical Information	CHE 418[5]	1			
Advanced Analytical Chemistry	CHE 424[5]	3			
Analytical Chemistry II Lab	CRL 424[5]	2			
Biochemistry I	CHE 476[5]	3			
Biochemistry I Lab	CRL 476[5]	2			
Biochemistry II	CHE 477[5]	3			
Biochemistry II Lab	CRL 477[5]	2			
Chemistry Seminar	CHE 491[5]	1			

B. Biochemistry Elective.[5] Select 3 credits under advisement. Course may be selected from CHE 333, CHE 410, CHE 479, or CHE/PPD 535.

VI. BIOLOGY COURSES (6-7 credits)

A. Required Course (3 credits)

General Biology I	BIO 110[5]	4	_____	_____	_____

B. Biology Elective

Select 3-4 credits from the following courses under advisement.

Genetics	BIO 210[5]	3	_____	_____	_____
Cell Biology	BIO 211[5]	4	_____	_____	_____
Microbiology	BIO 214[5]	4	_____	_____	_____

VII. DEPARTMENT SAFETY EXAM

The department safety exam must be taken and passed before graduation and preferably immediately following CRL 232.

NOTES:

Total degree program: 120 credits.

[1]The second (200-level) WRT course is any WRT course at the 200-level.

[2]The Diverse Communities ("J") course, the Ethics ("ET"), Writing Emphasis ("W") and Speaking Emphasis ("SE") courses can be satisfied through another requirement (e.g., Interdisciplinary or Distributive) as long as the course carries the appropriate attribute(s). Credits are not duplicated. If a course satisfied two requirements, those credits must be made up via student electives so that the minimum total credits is 120.

[3]At least 9 credits of Writing Emphasis ("W") courses and at least 9 credits of Speaking Emphasis ("SE") courses are required for students who enter WCU with 0-39 credits of transfer credits. Students who enter WCU with 40-70 transfer credits only need 6 credits of each; students who enter WCU with >70 transfer credits only need 3 credits of each. All students must take at least 3 credits of Writing Emphasis and 3 credits of Speaking Emphasis at the 300/400-level.

[4]All students will need to complete the Math Placement Exam before they can enroll in MAT courses. For information, please visit the following link: https://www.wcupa.edu/sciences-mathematics/mathematics/mathematicsPlacement.aspx
Students can repeat the Math Placement Exam to improve their score. If a student does not obtain the necessary score on the Math Placement Exam, the student will be required to take lower level mathematics courses before being allowed to enroll in the required mathematics courses for this degree.

[5]All science and mathematics courses must be passed with a "C–" or better.

Suggested Sequence for B.S. Biochemistry

Effective Fall 2021

1st Year

CHE	103	General Chemistry I	3	CHE	104	General Chemistry II	3
CRL	103	Gen Chem I Lab	1	CRL	104	Gen Chem II Lab	1
MAT	161	Calculus I [Math]	4	MAT	162	Calculus II	4
BIO	110	General Biology [Science]	4	WRT	120	Effective Writing I	3
FYE	XXX	First Year Experience	4	PHI	180	Introduction to Ethics [E, J, Hum 1]	3
				BIO	VVV	Biology Elective♥	3
			16				**17**

2nd Year

CHE	231	Organic Chemistry I	4	CHE	232	Organic Chemistry II	3
CRL	231	Org Chem I Lab	2	CRL	232	Org Chem II Lab	2
CHE	321	Analytical Chemistry I	3	XXX	xxx	Student Elective	3
CRL	321	Analyt Chem I Lab	2	WRT	2xx	Writing Course	3
PHY	170	Physics I [Science]	4	PHY	180	Physics II	4
		Department Safety Examination					
			15				**15**

3rd Year

CHE	341	Physical Chemistry I	4	CHE	342	Physical Chemistry II	3
CRL	341	Phys Chem I Lab	2	CRL	342	Phys Chem II Lab	2
GED	xxx	B/SS (1)	3	GED	xxx	Humanities (2)	3
CHE	476	Biochemistry I	3	CHE	477	Biochemistry II	3
CRL	476	Biochem I Lab	2	CRL	477	Biochemistry II Lab	2
CHE	418	Chemical Information	1	GED	xxx	Arts	3
			15				**16**

4th Year

CHE	YYY	Biochemistry Elective♣	3	CHE	411	Adv Inorganic Chemistry	3
GED	xxx	B/SS (2)	3	CRL	411	Inorganic Syntheses Lab	2
XXX	xxx	Student Elective	3	CHE	424	Adv Analytical Chemistry	3
CHE	491	Chemistry Seminar	1	CRL	424	Analyt Chem II Lab	2
GED	xxx	Interdisciplinary [I]	3	XXX	xxx	Student Elective	3
			13				**13**
						total	**120**

___ ___ ___ Writing Emphasis Courses ___ ___ ___ Speaking Emphasis Courses ___ Diverse Communities ___ Ethics

♥ This course is a biochemistry program elective in the Biology Department. Each student must complete one elective from the following selected courses: BIO 210 Genetics, BIO 211 Cell Biology, or BIO 214 Microbiology.

♣ This course is a biochemistry program elective in the Chemistry Department. Each student must complete one elective from the following selected courses: CHE 410, CHE 479, CHE 333, or CHE/PPD535

The Mathematics General Education requirement is satisfied with MAT 161.

The Science General Education Distributive requirements are satisfied with BIO 110 and PHY 170.

Students must take 9 credits of "W" (writing emphasis) courses; at least 3 credits must be in 300 or 400 level courses.

Students must take 9 credits of “S” (speaking emphasis) courses; at least 3 credits must be in 300 or 400 level courses.

Students must take 3 credits of “J” (diverse communities) courses.

Students must take 3 credits of “E” (ethics) courses.

Students must take at least 120 credits.