ADVISING SHEETS
B. S. IN BIOLOGY: INTEGRATIVE CONCENTRATION
Fall 2024 – Spring 2025

I. ACADEMIC FOUNDATIONS & DEGREE REQUIREMENTS

Requirement	*Course*	*Credits*	*Term*	*Year*	*Grade*
First Year Experience	FYE 100	4			
Effective Writing I	WRT 120 or 123	3			
Effective Writing II	WRT 200	3			
Mathematics: Statistics	MAT 121♠ or 125♠	3			
Interdisciplinary ("INT")		3			
Diverse Communities ("DIV")	♥	3			
Ethics ("ETH")	♥	3			

Writing Emphasis ("WRT") *Nine credits♣, integrated across General Education & Major courses.*

	BIO 211	4			
One at 300/400-level:					

Speaking Emphasis ("SPE") *Nine credits♣, integrated across General Education & Major courses.*

One at 300/400-level:	BIO 490/491/492	3			

II. GENERAL EDUCATION DISTRIBUTIVE REQUIREMENTS

- *Courses must be selected from the approved General Education list (see the catalog).*
- *Interdisciplinary courses cannot also be a General Education distributive course.*
- *Biology majors fulfill their science requirements with CHE 103 and PHY 130/170.*
- *Distributive requirements can be simultaneously satisfied with other degree requirements, see some examples♦.*

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

	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.
Note: Students taking the MCAT should take PSY 100 and SOC 100.

	3			
	3			

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

	3			

III. DIRECTED ELECTIVES – 15 credits (as many as needed to reach 120 total credits)

_____	___	_____	_____	_____	
_____	___	_____	_____	_____	
_____	___	_____	_____	_____	
_____	___	_____	_____	_____	
_____	___	_____	_____	_____	
_____	___	_____	_____	_____	

IV. SUPPORTING COURSES (28-29 credits)

Calculus ♠**	MAT__	3	_____	_____	_____
General Chemistry I	CHE 103	3	_____	_____	_____
General Chemistry I Lab	CRL 103	1	_____	_____	_____
General Chemistry II	CHE 104	3	_____	_____	_____
General Chemistry II Lab	CRL 104	1	_____	_____	_____
Organic Chemistry I	CHE 231	4	_____	_____	_____
Organic Chemistry I Lab	CRL 231	2	_____	_____	_____
Organic Chemistry II	CHE 232	3	_____	_____	_____
General Physics I **	PHY 130	4	_____	_____	_____
General Physics II	PHY 140	4	_____	_____	_____

V. BIOLOGY COURSES (42 credits) -- GPA must be 2.0 or higher to graduate.

A. *Required Core Courses* (19 credits)

General Biology I ***	BIO 110	4	_____	_____	_____
General Biology II ***	BIO 111	4	_____	_____	_____
Genetics ***	BIO 210	3	_____	_____	_____
Genetics Lab ***	BIO 210L	1	_____	_____	_____
Cell Biology ***	BIO 211	4	_____	_____	_____
Biology Capstone ***△	BIO 490/491/492	3	_____	_____	_____

B. *Other Required Courses* (3 credits)

General Ecology ***	BIO 270	3	_____	_____	_____

C. *Biology Electives* △ (20 credits)

Select courses under advisement from BIO 214, BIO 275, BIO 277, or BIO courses at or above the 300 level (except BIO 307). Because of content overlap, students may take either BIO 468 or BIO 469 for Biology Elective credit, but not both.

_____	___	_____	_____	_____	
_____	___	_____	_____	_____	
_____	___	_____	_____	_____	
_____	___	_____	_____	_____	
_____	___	_____	_____	_____	
_____	___	_____	_____	_____	
_____	___	_____	_____	_____	

Notes and Requirements

Total degree program: 120 credits.

♥ The Diverse Communities ("DIV") course and the Ethics ("ETH") courses can be satisfied through another requirement (e.g., General Education Distributive) as long as the course carries the appropriate attribute(s). *Note*: Credits are not duplicated such that if a course satisfies two requirements, those credits must be made up via directed electives (the minimum total credits for a B.S. degree is 120).

♣ Students must take at least 9 credits of Writing Emphasis courses and 9 credits of Speaking Emphasis courses. Students who enter WCU with 30-60 transfer credits only need 6 credits of each; students who enter with 61-90 transfer credits only need 3 credits of each. **All students with < 91 transfer credits must take at least 3 credits of Writing Emphasis and 3 credits of Speaking Emphasis at the 300-400 level.** Students who enter WCU with > 90 transfer credits are exempt from all Writing and Speaking Emphasis courses.

♦ Students should think about how requirements can be simultaneously satisfied. As examples: LNC 110 is a Humanities distributive that satisfies the Ethics requirement; PHI 180 is a Humanities distributive that satisfies the Diverse Communities & Ethics requirements; LIT 165 is a Humanities distributive that is also Writing Emphasis; PSC 101 is a Behavioral & Social Science distributive that satisfies the Diverse Communities requirement.

♠ All students will need to complete the Math Placement Exam before they can enroll in MAT courses. For information, please visit the Math Department website. Please direct any questions to mathexam@wcupa.edu.

* The Biology Department recommends MAT 145 (Calculus for the Life Sciences; 3 credits) or MAT 161 (Calculus I; 4 credits). MAT 143 (Brief Calculus; 3 credits) is also acceptable. You must meet the necessary pre-requisites or obtain a minimum score on the Math Placement Exam♠ to enroll in a calculus class. Visit the Math Department website to take the exam. If you receive a score of 60 or lower on the exam, you must take MAT 113 (Algebra and Functions) or MAT 115 (Algebra, Functions, and Trigonometry) as preparation for Calculus (MAT 143 or MAT 145). If you score a 44 or lower, you will need to take MAT 112 (Algebra and Functions with Support) before you can enroll in MAT 113 or MAT 115. If you score 29 or lower, you will need to take MAT Q30 before you can enroll in MAT 112. If you receive a score of 61 or above, you can enroll directly into MAT 143 or MAT 145. You must score a 75 or above to enroll into MAT 161 or take the pre-requisite of MAT 131. Students can repeat the math placement exam to improve their score.

** The recommended Physics sequence is PHY 130 & PHY 140. Students may substitute the PHY 170 & PHY 180 sequence, but 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.

*** Course must be passed with a "C-" or better.

△ Students may only do one Capstone course (BIO 490/491/492). Students taking BIO 490/491/492 must be aware that they are fulfilling a Capstone requirement, the credits will not also count as Biology Electives. A maximum of 3 combined credits from BIO 391 and BIO 392 may be applied to the total Biology Elective credits.

Suggested Sequence for B.S. Biology Majors

Integrative Biology Concentration

Fall 2024 – Spring 2025

	Semester #1 (15 credits)		Semester #2 (17 credits)
____	FYE 100 (4)	____	WRT 200 (3)
____	WRT 120 (3)	____	BIO 111 (4)
____	BIO 110 (4)	____	CHE 104 (3) & CRL 104 (1)
____	CHE 103 (3) & CRL 103 (1)	____	MAT 121 or MAT 125 (3)
		____	Gen Ed Distributive: Behavioral & Social Science (3)
	Semester #3 (16 credits)		**Semester #4 (16-17 credits)**
____	BIO 210 (3) & BIO 210L (1)	____	BIO 211 (WRT) (4)
____	CHE 231 (4) & CRL 231 (2)	____	CHE 232 (3)
____	Diverse Communities Course (DIV) (3)	____	MAT 145 (3) or MAT 143 (3) /161 (4)
____	Gen Ed Distributive: Humanities & Ethics Course (ETH) (3)	____	Gen Ed Distributive: Arts (3)
		____	Gen Ed Distributive: Behavioral & Social Science (3)
	Semester #5 (16 credits)		**Semester #6 (16 credits)**
____	BIO 270 (3)	____	BIO Elective (3)
____	BIO Elective (3)	____	BIO Elective (3)
____	PHY 130 (4)	____	PHY 140 (4)
____	Directed Elective (3)	____	Interdisciplinary Course (INT) (3)
____	Gen Ed Distributive: Humanities (3)	____	Speaking Emphasis Course (SPE) (3)
	Semester #7 (12 credits)		**Semester #8 (15 credits)**
____	BIO Elective (3)	____	BIO Elective (3)
____	BIO Elective (3)	____	BIO Elective (3)
____	Directed Elective (3)	____	Directed Elective (3)
____	Upper-level Directed Elective (WRT)(3)	____	Directed Elective (3) (if needed)
		____	BIO 490/491/492 (SPE) (3)

- All required 200 level Biology courses should be completed by the end of Semester #5.
- Students should take Statistics (MAT 121 or 125) in the first year.
- Students may choose to take MAT 145, 143 or 161 Semester 4.
- Students must take at least 9 credits of Writing Emphasis courses and 9 credits of Speaking Emphasis courses. Students who enter WCU with 30-60 transfer credits only need 6 credits of each; students who enter with 61-90 transfer credits only need 3 credits of each. **All students with < 91 transfer credits must take at least 3 credits of Writing Emphasis and 3 credits of Speaking Emphasis at the 300-400 level.** Students who enter WCU with > 90 transfer credits are exempt from all Writing and Speaking Emphasis courses.