## ACCELERATED PROGRAM - B. S. IN BIOLOGY: INTEGRATIVE BIOLOGY + M. S. IN BIOLOGY

Fall 2022 – Spring 2023

I. ACADEMIC FOUNDATIONS	& DEGREE REQU	<b>IREMENTS</b>			
Requirement	Course	Credits	Term	Year	Grade
First Year Experience	FYE 100	4			
Effective Writing I	WRT 120	3			
Effective Writing II	WRT 2 *	3			
Mathematics: Statistics	MAT $1\overline{21}^{+}$ or $125^{+}$	3			
Interdisciplinary ("I")		3			
Diverse Communities ("J")	•	3			
Ethics ("ET")	<b></b>	3			
Writing Emphasis ("W") Nin	e credits*, integrated ac <u>BIO 211</u>	cross General E	Education &	a Major	courses.
	<u> DIO 211</u>				
One at 300/400-level	<i>!:</i>				
<b>Speaking Emphasis</b> ("SE") N	ine credits* inteorated	across Genera	l Education	& Maio	or courses
Speaking Emphasis (SE) 11	———	———			- ——
200//00 1					
One at 300/400-level	!: 				
<ul> <li>Interdisciplinary ("1") c</li> <li>Biology majors fulfill the</li> <li>Distributive requirement requirements, see some e</li> </ul>	eir science requirements Es can be simultaneou	nts with CHE	103 and P	HY 130	
A. Humanities (6 credits): I  Courses must be sele	E.g., Literature (LIT/C ected from two differen			losophy 	(PHI)
		3			
	cal Science (PSC), Geneted from two difference the MCAT should ta	eography (GE) nt subject area ke PSY 100 an 3	O), Econorus.  ad SOC 10	mics (E	CO)
Music (MHL, MTC), Theate	•		` //	`	**
		3			

III. DI	RECTED ELECTIVES – 1	5 credits (to rea	ach 120	total cre	dits for t	he B.S. degree)	
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						<del></del>	
IV. SU	PPORTING COURSES (2)	8 credits)					
1,,,,,	Calculus **	MAT 145	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				
	DLOGY COURSES (42 creduate level are applied to the FA. Required Core Courses (General Biology I *** General Biology II *** Genetics *** Genetics Lab *** Cell Biology ***  B. Other Required Courses (General Ecology ***  C. Biology Electives Ω (11 cm)	B.S.) Must have 16 credits) BIO 110 BIO 111 BIO 210 BIO 210L BIO 211 (3 credits) BIO 270			_		taken
	D. Graduate Biology Core C	Courses (12 gra	duate cr	edits, se	e below)		
VI. GF	A. Core courses (12 credits) BIO 510: Graduate Seminar in BIO 511: Experimental Design BIO 520: Topics & Methods in	Biology and Analysis	3 3 bial, and	——— Molecul	 ar Biolog	y	
	BIO 521: Topics & Methods in	ı Ecology, Evolu	ation, and	Organis	mal Biolo	ogy	
	B. <i>Electives</i> $\xi$ (15 credits)						
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						<del></del>	

C. Research and Capstone (3 credits)			
Directed Research in Biology BIO 591 <sup>a</sup>	3	 	

## **Notes and Requirements**

Students should begin discussing research topics with prospective faculty advisors during the 3<sup>rd</sup> year in preparation for graduate courses in during their 4<sup>th</sup> year.

Credit requirements: B.S.: 120 credits; M.S.: 30 credits. Twelve credits taken at the graduate level are also applied to the B.S. degree. Therefore the total for both degrees is 138 credits.

- ♠ The second (200-level) WRT course is chosen from WRT 200, 204, 205, 206, 208, or 220.
- ▶ The Diverse Communities ("J") course and the Ethics ("ET") courses can be satisfied through another requirement (e.g., Interdisciplinary or 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).
- All students must take at least 9 credits of Writing Emphasis courses and 9 credits of Speaking Emphasis courses. Students who enter WCU with 40-70 transfer credits only need 6 credits of each; students who enter 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.
- ♦ 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 student will need to complete the Math Placement Exam before they can enroll in MAT courses. For information, please visit the link below. Please direct any questions to <a href="mathexam@wcupa.edu">mathexam@wcupa.edu</a>. <a href="https://www.wcupa.edu/sciences-mathematics/mathematics/mathematics/mathematics/lacement.aspx">https://www.wcupa.edu/sciences-mathematics/mathematics/mathematics/lacement.aspx</a>
- \* 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 3 or lower on the placement exam, you must take MAT 115 (Algebra, Functions, and Trigonometry) or MAT 131 (Precalculus) as preparation for Calculus (MAT 143 or MAT 145). If a student scores a 2 or lower, they will need to take MAT Q30 before they can enroll in MAT 115 or MAT 131. Students can repeat the mathematics assessment to improve their score. If you receive a score of 4 or above, you can enroll directly into MAT 143 or MAT 145. You must score a 5 to enroll into MAT 161 or take the pre-requisite of MAT 131.
- \*\* 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.

<sup>\*\*\*</sup> Course must be passed with a "C-" or better.

- $\Omega$  Biology electives are selected from BIO 214, 275, 277, or BIO courses at or above the 300 level, except BIO 307 and BIO 469.
- $\Delta$  To complete BIO 591 successfully, the student must present the results of the project in an open seminar. In addition, the student must pass a written comprehensive examination prepared by the student's advisory committee. Students who fail this examination will not receive a grade for this capstone course.
- $\xi$  Any other 500-level BIO course except BIO 591. If a course is offered at both the 400 and 500 levels, the student must take the 500-level course. No more than 6 credits of 400-level courses may be counted toward the M.S. degree. With prior departmental approval, up to 6 credits of graduate course work from another department or university may be applied toward the M.S. degree. BIO 535, 536, and 537 may be repeated for credit provided the topic is different.

## Suggested Sequence for Accelerated B.S. + M.S. Biology Majors

## Integrative Biology Concentration Fall 2021 – Spring 2022

Semester #1 (15 credits) FYE 100 (4) WRT 120 (3) BIO 110 (4) CHE 103 (3) & CRL 103 (1)	 Semester #2 (17 credits) WRT 2 (3) BIO 111 (4) CHE 104 (3) & CRL 104 (1) MAT 125 or MAT 121 (3) Gen Ed Distributive: Behavioral & Social Science (3)
 Semester #3 (16 credits) BIO 210 (3) & BIO 210L (1) CHE 231 (4) & CRL 231 (2) Gen Ed Distributive: Humanities & Ethics Course (ET) (3) Diverse Communities Course (J) (3)	 Semester #4 (16-17 credits) BIO 211 (4) CHE 232 (3) Gen Ed Distributive: Arts (3) Gen Ed Distributive: Behavioral & Social Science (3) MAT 145 (3) or MAT 143 (3) /161 (4)
Semester #5 (16 credits) BIO 270 (3) BIO Elective (3) PHY 130 (4) Gen Ed Distributive: Humanities (3) Directed Elective (W) (3)	Semester #6 (16 credits) BIO Elective (3) BIO Elective (3) PHY 140 (4) Interdisciplinary Course (I) (3) Speaking Emphasis Course (SE) (3)
Semester #7 <sup>\(\Delta\)</sup> (14 credits) BIO 510 (3) BIO 520 (3) Upper-level Directed Elective (W) (3) Directed Elective (2) BIO Elective (3) (Graduate)	 Semester #8 (12 credits) BIO 511 (3) BIO 521 (3) Directed Elective (3) Directed Elective (3)
 Semester #9 (9 credits) BIO Elective (3) BIO Elective (3) (Graduate) BIO Elective (3) (Graduate)	 Semester #10 (9 credits) BIO Elective (3) (Graduate) BIO Elective (3) (Graduate) BIO 591 <sup>A</sup> (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.

All students must take at least 9 credits of Writing Emphasis courses and 9 credits of Speaking Emphasis courses. Students who enter WCU with 40-70 transfer credits only need 6 credits of each; students who enter 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.