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

Fall 2019 – Spring 2020

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__♠	3	_____	_____	____
Mathematics: Statistics	MAT 121 or 125	3	_____	_____	____
Interdisciplinary ("I")	_____	3	_____	_____	____
Diverse Communities ("J")	_____♥	3	_____	_____	____
Ethics ("ET")	_____♥	3	_____	_____	____

Writing Emphasis *Nine credits♣, integrated across General Education & Major courses.*

	BIO 220	___	_____	_____	____
	_____	___	_____	_____	____
One at 300/400-level:	_____	___	_____	_____	____

Speaking Emphasis *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.*
- *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 200.

_____	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 – 17 credits (to reach 120 total credits for the B.S. degree)

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

IV. SUPPORTING COURSES (28 credits)

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	_____	_____	_____

V. BIOLOGY COURSES (42 credits; 30 credits taken at the undergraduate level, 12 credits taken at graduate level are applied to the B.S.) Must have 3.00 GPA for graduate admission.

A. *Required courses* (18 credits)

General Biology ***	BIO 110	3	_____	_____	_____
General Botany ***	BIO 215	3	_____	_____	_____
General Zoology ***	BIO 217	3	_____	_____	_____
Cell Physiology ***	BIO 220	3	_____	_____	_____
Genetics ***	BIO 230	3	_____	_____	_____
General Ecology ***	BIO 270	3	_____	_____	_____

B. *Biology Electives* Ω (12 credits; 12 additional credits completed at graduate level)

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

VI. GRADUATE COURSES Δ

A. *Core courses* (12 credits)

Graduate Seminar in Biology	BIO 510	3	_____	_____	_____
Experimental Design and Analysis	BIO 511	3	_____	_____	_____
Topics & Methods in Cellular, Microbial, and Molecular Biology	BIO 520	3	_____	_____	_____
Topics & Methods in Ecology, Evolution, and Organismal Biology	BIO 521	3	_____	_____	_____

B. *Electives* ξ (9 credits)

_____	___	_____	_____	____
_____	___	_____	_____	____
_____	___	_____	_____	____

C. *Research and Capstone* Σ (9 credits)

Thesis Proposal	BIO 608	3	_____	_____	____
Thesis Research	BIO 609	3	_____	_____	____
Thesis and Defense	BIO 610	3	_____	_____	____

Notes and Requirements

The Accelerated B.S. + M.S. program is only open to thesis students. Students should begin discussing research topics with prospective faculty advisors during the 2nd year in preparation for application to the accelerated program during their 3rd 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.

* 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 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.

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

Ω - Biology electives are selected from BIO 214, 275, 277, or BIO courses at or above the 300 level, except BIO 307 and BIO 469.

Δ - To be considered for the accelerated program and enroll in BIO 608 (Thesis Proposal), students must have attained (completed) 75 credits with a minimum of 18 biology credits. Students must have a minimum cumulative GPA of 3.00 including a minimum GPA of 3.00 for biology courses. BIO 608 requires departmental permission to enroll; students must arrange a committee meeting prior to enrolling in BIO 608 (e.g., during their third year). The accelerated program in biology is only open to thesis students. Any student wishing to switch out of the thesis option will be required to complete all requirements of the B.S. degree. Once admitted to the graduate program, graduate policies apply, including minimum GPA (3.00). *See the Graduate Catalog for further details.*

ξ – 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.

Σ - A letter grade must be obtained for BIO 608 before the student can enroll in BIO 609. Likewise, a letter grade must be obtained for BIO 609 before the student can enroll in BIO 610.

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

Integrative Biology Concentration

Fall 2019 – Spring 2020

	Semester #1 (17 credits)		**Semester #2 (16 credits)**
____	FYE 100 (4)	____	WRT 2___ (3)
____	WRT 120 (3)	____	BIO 215 or 217 (3)
____	BIO 110 (3)	____	CHE 104/CRL 104 (3)/(1)
____	CHE 103/CRL 103 (3)/(1)	____	MAT 145 (3) or MAT 143/161
____	MAT 121 or MAT 125 (3)	____	Gen Ed Distributive: Behavioral & Social Science (3)
	Semester #3 (15 credits)		**Semester #4 (15 credits)**
____	BIO 215 or 217 (3)	____	BIO 220 (3)
____	CHE 231 (4)	____	BIO 230 (3)
____	CRL 231 (2)	____	CHE 232 (3)
____	Gen Ed distributive: Humanities & Ethics (ET) course (3)	____	Gen Ed distributive: Arts (3)
____	Diversity (J) elective (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 130/170 (4)	____	PHY 140/180 (4)
____	Gen Ed distributive: Humanities (3)	____	Interdisciplinary (I) elective (3)
____	Directed elective (3)	____	Directed elective (3)
	Semester #7 $^{\Delta}$ (14 credits)		**Semester #8 (12 credits)**
____	BIO 510 (3)	____	BIO 511 (3)
____	BIO 520 (3)	____	BIO 521 (3)
____	Directed elective (3)	____	Directed elective (3)
____	Directed elective (2)	____	Directed elective (3)
____	BIO 608 $^{\Delta}$ (3)		
	Semester #9 (9 credits)		**Semester #10 (9 credits)**
____	BIO elective (3)	____	BIO elective (3) (Graduate)
____	BIO elective (3) (Graduate)	____	BIO elective (3) (Graduate)
____	BIO 609 (3)	____	BIO 610 (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.**