

ADVISING SHEETS:
B. S. IN BIOLOGY: INTEGRATIVE BIOLOGY CONCENTRATION
 Fall 2018 – Spring 2019

REQUIREMENT	COURSE	CREDITS	TERM	YEAR	GRADE
-------------	--------	---------	------	------	-------

I. ACADEMIC FOUNDATIONS (18 credits)

Effective Writing I	WRT 120	3	_____	_____	_____
Writing II	WRT ____*	3	_____	_____	_____
Statistics	MAT 121	3	_____	_____	_____
Communication	SPK ____*	3	_____	_____	_____
Diverse Communities (“J”)	_____	3	_____	_____	_____
Interdisciplinary (“I”)	_____	3	_____	_____	_____

II. LIBERAL ARTS DISTRIBUTIVE REQUIREMENTS (*Approved courses only*)

No course that carries the Interdisciplinary attribute (“I” course) may be used to fulfill any of these requirements, even if it carries a LIT, GEO, MHL, etc. prefix.

A. Approved courses in the Humanities (6 credits)

Select courses from at least 2 of the following areas.

Literature (LIT/CLS)	History (HIS)	Philosophy (PHI)
_____	3	_____
_____	3	_____

B. Approved courses in the Behavioral and Social Sciences (6 credits)

Select courses from at least 2 of the following areas.

Anthropology (ANT)	Psychology (PSY)	Sociology (SOC)
Economics (ECO)	Geography (GEO)	Government (PSC)
_____	3	_____
_____	3	_____

Students taking the MCAT should take at least one semester of psychology and one semester of sociology.

C. Approved courses in the Arts (3 credits)

Select a course in Art, Cinematography, Dance, Music, Photography, or Theatre.

_____	3	_____
-------	---	-------

Note: Biology majors will fulfill their distributive requirements in the Sciences with CHE 103 and PHY 130/170. These courses are listed under Supporting Courses.

III. DIRECTED ELECTIVES – 16-17 credits (as many as needed to reach 120 credits at graduation)

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

IV. SUPPORTING COURSES (28-29 credits)

Calculus ***	MAT ____	3/4	_____	_____	_____
General Chemistry I	CHE 103	3	_____	_____	_____
Exp. General Chemistry I	CRL 103	1	_____	_____	_____
General Chemistry II	CHE 104	3	_____	_____	_____
Exp. General Chemistry II	CRL 104	1	_____	_____	_____
Organic Chemistry I	CHE 231	4	_____	_____	_____
Exp. Organic Chemistry I	CRL 231	2	_____	_____	_____
Organic Chemistry II	CHE 232	3	_____	_____	_____
General Physics I ****	PHY 130	4	_____	_____	_____
or Physics I	PHY 170	4	_____	_____	_____
General Physics II	PHY 140	4	_____	_____	_____
or Physics II	PHY 180	4	_____	_____	_____

V. Biology Courses (42 credits) Must have 2.0 to graduate.

A. Required courses (21 credits)

General Biology **	BIO 110	3	_____	_____	_____
Botany **	BIO 215	3	_____	_____	_____
Zoology **	BIO 217	3	_____	_____	_____
Cell Physiology **	BIO 220	3	_____	_____	_____
Genetics **	BIO 230	3	_____	_____	_____
Ecology **	BIO 270	3	_____	_____	_____
Seminar or Internship or	BIO 490/409/491				
Independent Study**△		3	_____	_____	_____

B. Biology Electives. Select 21 semester hours under advisement. Courses may be selected from BIO 214, BIO 275, BIO 277 or BIO courses at or above the 300 level, except BIO 307 and BIO 469.

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

VI. Writing Emphasis *See college catalog for details.*

	<u>BIO 220</u>	___	___	___	___
	___	___	___	___	___
*One at 300/400-level:	___	___	___	___	___

Total degree program: 120 credits.

Requirements

* Courses in Communications, second WRT course, and Calculus must be selected with the approval of the advisor. Approved Communication courses are SPK 199 (for transfer students only), 208, or 230. Approved WRT courses are 200, 204, 205, 206, 208, or 220.

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

*** 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.

△ Students using BIO 409 to fill this requirement must be aware that using three credits in a required Biology course (section VI A) will not also count as three credits towards a Biology elective (section VI B). Check with your academic advisor if you are unsure of credit usage.

All students entering WCU Fall of 1980 or later must take at least three approved Writing Emphasis courses, totaling at least 9 credits; students who enter with 40-70 transfer credits need only 2, and a minimum of 6 credits; students who enter with more than 70cr. only need one course (at least 3 credits). **At least 1 Writing Emphasis course must be taken at the 300 or 400 level for all students.**

A maximum of 8 combined credits from BIO 409 & 491 may be applied to total Biology credits.

Suggested Sequence for B.S. Biology Majors

Integrative Biology Concentration

Fall 2018 – Spring 2019

_____	Semester #1 (16 credits) WRT 120 (3) BIO 110 (3) CHE 103/CRL 103 (3)/(1) MAT 121 (3) or MAT 143, 145, 161 Gen Ed Distributive (3)	_____	Semester #2 (16 credits) WRT 2__ __ (3) BIO 215 or 217 (3) CHE 104/CRL 104 (3)/(1) MAT 121 (3) or MAT 143, 145, 161 Gen Ed Distributive (3)
_____	Semester #3 (15 credits) BIO 215 or 217 (3) CHE 231/CRL 231 (4)/(2) Math (if still needed) (3) Gen Ed Distributive (3)	_____	Semester #4 (15 credits) BIO 220 (3) BIO 230 (3) CHE 232 (3) SPK 208 or 230 (3) Gen Ed Distributive (3)
_____	Semester #5 (16 credits) BIO 270 (3) BIO Elective (3) PHY 130/170 (4) Diversity (J) Course (3) Directed Elective (3)	_____	Semester #6 (13 credits) BIO Elective (3) BIO Elective (3) PHY 140/180 (4) Interdisciplinary (I) Course (3)
_____	Semester #7 (15 credits) BIO Elective (3) BIO Elective (3) Directed Elective (3) Directed Elective (3) Gen Ed Distributive (3)	_____	Semester #8 (15 credits) BIO Elective (3) BIO Elective (3) Directed Elective (3) Directed Elective (3) BIO 490/409/491 (3)

All required 200 level Biology courses should be completed by the end of Semester #5.

Students should take MAT 121 (Statistics) in the first year.