

# BACHELOR OF SCIENCE IN EDUCATION: BIOLOGY

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	_____

### 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 (9 credits)\*\***

_____	_____	3	_____	_____	_____
_____	_____	3	_____	_____	_____
_____	_____	3	_____	_____	_____

**IV. SUPPORTING COURSES (24-25 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	_____	_____	_____
General Physics I	PHY 130/170	4	_____	_____	_____
Earth & Space Science	ESS 101	3	_____	_____	_____

**V. BIOLOGY COURSES (27-28 credits)** Must be passed with a "C-" or greater and a 2.0 to graduate.**A. Required**

General Biology	BIO 110	3	_____	_____	_____
General Microbiology	BIO 214	4	_____	_____	_____
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. Electives** (300 level or above except BIO 307 and 469)

_____	3	_____	_____	_____
_____	3	_____	_____	_____

**VI. EDUCATION COURSES (36 credits)**

Democracy & Education (I) or History of American Education	EDF 300/HIS 444	3	_____	_____	_____
Educational Psychology+	EDP 250^	3	_____	_____	_____
Foundations of Special Education	EDA 103	3	_____	_____	_____
Special Education Processes/Procedures for Secondary Educators	EDA 304^	3	_____	_____	_____
Literacy Development and Secondary Students with Disabilities in Inclusive Classrooms	EDR 347	3	_____	_____	_____
Teaching English Language Learners PK-12 (J)	LAN/ENG 382	3	_____	_____	_____
Teaching Principles and Field Experience in Secondary Schools ("W")^^+	EDS 306^	3	_____	_____	_____
Science Education in the Secondary School^+	SCB 350^	3	_____	_____	_____
Student Teaching^^+	EDS 411/412	12	_____	_____	_____

**VII. WRITING EMPHASIS COURSES** – 3 approved “W” courses must be taken by BSEd students unless they enter with 40-70 transfer credits, in which case they need only 2 “W” courses. Students entering with > than 70 credits need take only 1 “W” course. **At least 1 “W” course must be taken at the 300 or > level.** EDS 306 meets the later requirement, as does BIO 440 that can also act as a Biology elective. Other recommended “W” courses include general education or directed elective courses.

LIT 165	_____	_____	_____
EDS 306	_____	_____	_____
BIO 440	_____	_____	_____

**The minimum number of credits in the BSEd Biology Program: 124.**

---

\*Communications courses and a second writing course must be selected with advisor approval and include SPK 208 or 230 and WRT 200, 204, 205, 206, 208 or 220. The department recommends WRT 208 or 220 for BSEd majors.

\*\*Recommended Directed Elective courses include CHE 232, EDM 300, ESS 170, or GEO 101.

\*\*\* 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.

#Students may use either EDF 300 or SCB 210 to fulfill their General Education (a) Interdisciplinary (“I”) and LAN 382 their (b) Diverse Communities (“J”) course requirements, since counting any other course(s) may result in a student graduating with more than 127 credits.

##A literature course is required for Formal Admission to Teacher Education.

+Clearances are required at time of enrollment.

^Requires field experiences: EDP 250, EDA 304, EDS 306, and SCB 350.

^^Requires Formal Admission to Teacher Education (FATE). Refer to the College of Education and Social Work website (<http://www.wcupa.edu/education-socialWork/>) for up to date information on requirements.

Students must take Basic Skills and Subject Area Tests (i.e., Praxis II, Biology: Content Knowledge) for certification. Refer to the College of Education and Social Work website for up to date general information, subject area details and requirements, and registration information. Note that the Biology Praxis II must be taken before student teaching.

A cumulative GPA of 3.0 is required for graduation and for certification from PDE.

A maximum of three combined credits from BIO 409 and 491 may be applied to Biology credits, but they cannot count in multiple areas.

# Suggested Course Sequence for BSED Biology Majors

Fall 2018 – Spring 2019

<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>Semester 1 (16 credits)</b></p> <p>WRT 120 (3)</p> <p>BIO 110 (3)</p> <p>CHE 103 (3) / CRL 103 (1)</p> <p>MAT 121 (3)</p> <p>GEN ED 1 (3)</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>Semester 2 (16 credits)</b></p> <p>WRT ____ (3)</p> <p>BIO 215 or 217 (3)</p> <p>CHE 104 (3) / CRL 104 (1)</p> <p>SPK 208 or 230 (3)</p> <p>LIT/CLS {GEN ED 2} (3)</p>
<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>Semester 3 (18 credits)</b></p> <p>CHE 231 (4) / CRL 231 (2)</p> <p>BIO 215 or 217 (3)</p> <p>EDF 300 “I” (3)</p> <p>EDP 250 (3) – <i>Requires 20 FE hours</i></p> <p>GEN ED 3 (3)</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>Semester 4 (16 credits)</b></p> <p>BIO 214 (4)</p> <p>MAT 145 or 161 (3/4)</p> <p>EDA 103 (3)</p> <p>BIO 230 or 270 (3)</p> <p>DIRECTED Elective 1 (3)</p> <p><i>Apply for FATE by semester end.</i></p>
<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>Semester 5 (16 credits)</b></p> <p>PHY 130/170 (4)</p> <p>BIO 220 (3)</p> <p>BIO 230 or 270 (3)</p> <p>EDA 304 (3) – <i>Requires 20 FE hours</i></p> <p>EDR 347 (3)</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>Semester 6 (15 credits)</b></p> <p>DIRECTED Elective 2 (3)</p> <p>BIO Elective 1 (3)</p> <p>EDS 306 (3) – <i>Requires 24 FE hours</i></p> <p>LAN/ENG 382 “J” (3)</p> <p>GEN ED 4 (3)</p>
<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>Semester 7 (15 credits)</b></p> <p>DIRECTED Elective 3 (3)</p> <p>BIO Elective 2 (3)</p> <p>GEN ED 5 (3)</p> <p>SCB 350 (3) – <i>Requires 24 FE hours</i></p> <p>ESS 101 (3)</p>	<p>_____</p>	<p><b>Semester 8 (12 credits)</b></p> <p>EDS 411 &amp; 412 (12)</p>