



## STEM EDUCATION ADVISING GUIDE

Bachelor of Science (BS) Biology /Grades 7-12 Life Science Licensure

### University Core Requirements

Please see your Fulbright adviser for an official degree plan.

#### ENGLISH COMPOSITION (2 courses • 6 hours)

- ENGL 1013 Composition I
- ENGL 1023 Composition II

#### U.S. HISTORY (1 course-3 hours)

- HIST 2003 History of the American People to 1877
- HIST 2013 History of the American People 1877 to Present
- PLSC 2003 American National Government

*Note: U.S. History & Government courses cannot be used more than once within the University Core.*

#### FINE ARTS (1 course • 3 hours)

- ARCH 1003 Architecture Lecture
- ARHS 1003 Art Lecture
- COMM 1003 Film Lecture
- DANC 1003 Movement and Dance
- LARC 1003 The American Landscape
- MLIT 1003 Music Lecture
- MLIT 1013 Music Lecture for Music Majors
- THTR 1003 Theatre Appreciation
- THTR 1013 Musical Theatre Appreciation

#### <sup>1</sup>HUMANITIES (1 course • 3 hours)

- AAST 2023 The African American Experience
- ARCH 1013 Diversity and Design
- CLST 1003 Intro to Classical Studies: Greece
- CLST 1013 Intro to Classical Studies: Rome
- COMM 1233 Media, Community, and Citizenship
- ENGL 1213 Intro to Literature
- GNST 2003 Intro to Gender Studies
- HUMN 1124H\* Honors Eq. of Cultures, 500-1600
- HUMN 2124H\* Honors 20th Century Global Culture
- MUSY 2003 Music in World Cultures
- PHIL 2003 Intro to Philosophy
- PHIL 2103 Intro to Ethics
- PHIL 2203 Logic
- PHIL 3103 Ethics and the Professions
- WLIT 1113 World Literature I
- WLIT 1123 World Literature II
- World language at Intermediate I (2003) level

#### UNIV 1001: University Perspectives

- (Freshmen must complete during first year; **ARSC 1201 satisfies this requirement and is one entry option into licensure program**)

#### SOCIAL SCIENCES (3 courses from at least 2 fields • 9 hours)

- AGECE 1103 Principles of Agricultural Microeconomics
- AGECE 2103 Principles of Agricultural Macroeconomics
- ANTH 1023 Intro to Cultural Anthropology
- COMM 1023 Communication in a Diverse World
- ECON 2013 Principles of Macroeconomics
- ECON 2023 Principles of Microeconomics
- ECON 2143 Basic Economics: Theory and Practice
- GEOS 1123 Human Geography
- GEOS 2003 World Regional Geography
- HESC 1403 Life Span Development
- HESC 2413 Family Relations
- HIST 1113 Institutions and Ideas of World Civilizations I
- HIST 1123 Institutions and Ideas of World Civilizations II
- HIST 2003 History of the American People to 1877
- HIST 2013 History of the American People 1877 to Present
- HUMN 1114H\* Honors Roots of Culture to 500 C.E.
- HUMN 2114H\* Honors Birth of Modern Culture, 1600-1900
- PLSC 2003 American National Government
- PLSC 2013 Intro to Comparative Politics
- PLSC 2203 State and Local Government
- PSYC 2003 General Psychology
- RESM 2853 Leisure and Society
- RSOC 2603 Rural Sociology
- SOCI 2013 General Sociology
- SOCI 2033 Social Problems
- STEM 2003 Art of STEM Communication (one entry option into the STEM Education program)**

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### Major Requirements

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#### CHEMISTRY (5 courses – 19 hrs)

- CHEM 1103/1101L University Chemistry I
- CHEM 1123/1121L University Chemistry II
- CHEM 3603/3601L Organic Chemistry I
- CHEM 3613/3611L Organic Chemistry II
- CHEM 3813 Introduction to Biochemistry

#### MATH (1 course - 4 hrs.)

- MATH 2554 Calculus I
- Math 2564 Calculus II (recommended)

#### STATISTICS (1 course – 3-4 hrs.)

- STAT 2023 Biostatistics
- STAT 2303 Principles of Statistics
- STAT 4003/4001L Statistical Methods

#### PHYSICS (2 courses – 8 hrs.)

- PHYS 2013/2011L College Physics I
- PHYS 2033/2031L College Physics II

*or*

- PHYS 2054 University Physics I
- PHYS 2074 University Physics II

#### STEM EDUCATION (24 hours)

- ARSC 1201 Intro to Teaching STEM Subjects *and*
- ARSC 1212 Field Exp. in Teaching STEM Subjects *or*
- STEM 2003 Art of STEM Communication
- STEM 2103 Knowing and Learning
- STEM 3203 Classroom Interactions
- \*BIOL 3273 Inquiry & Modeling in Science Education (counted in BIOL 3000 level electives)
- SEED 4003 Teaching Secondary Science
- STEM 4333 History & Philosophy of Teaching Science
- STEM 4403 Teaching Seminar
- STEM 4506 Supervised Teaching Internship

#### BIOLOGY CORE (4 courses + 1 lab • 13 hours)

- BIOL 2533 Cell Biology
- BIOL 2323 General Genetics
- BIOL 3863 General Ecology
- A lab from one of the three BIOL courses above
- BIOL 3023 Evolutionary Biology

#### BIOLOGY ELECTIVES (27 hours minimum)

- BIOL 1583/1581L Biology for Majors
- BIOL 1603/1601L Principles of Zoology
- BIOL 1613/1611L Plant Biology

*Note: No more than 8 hours from above may apply*

Select two lab courses numbered 2000 or higher. This includes additional BIOLOGY CORE labs, special topics/research courses with a lab, and other BIOL courses numbered 3000 or higher with a lab.

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#### BIOL courses 3000 level or higher (6 hrs min.)

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\*BIOL 3273 Inquiry and Modeling in Science Ed.

#### BIOL courses 4000 level or higher (12 hours min.)

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#### Biology Writing Requirement

\*Students can use their inquiry project paper in BIOL 3273 as a starting point for the Biology Writing Requirement- under the supervision of a biology faculty member. Otherwise the requirement can be met by completion of BIOL 498V supervised by a biology faculty member or by an honor's thesis.

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#### SAMPLE COURSE SEQUENCE

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FALL SEMESTER		HRS	SPRING SEMESTERS		HRS
<b>Freshmen Year</b>					
ARSC 1201	Intro to Teaching STEM Subjects (& U. Pers.)	1	ARSC 1212	Field Exp. in Teaching STEM Sub.	2
MATH 2554	Calculus I	4	CHEM 1123/1L	University Chemistry II	4
CHEM 1103/1L	University Chemistry I	4	BIOL 2323/1L	General Genetics (lab opt.)	3
BIOL 1583/1L	Biology for Majors	4	BIOL Elec/1L	Biology course level 2000+	4
ENGL 1013	English Composition I	3	ENGL 1023	English Composition II	3
TOTAL		16	TOTAL		16
<b>Sophomore Year</b>					
STEM 2103	Knowing and Learning	3	STEM 3203	Classroom Interactions	3
CHEM 3603/1L	Organic Chemistry I	4	CHEM 3613/1L	Organic Chemistry II	4
BIOL 2533/1L	Cell Biology (lab opt.)	3	BIOL 3863/1L	General Ecology (lab opt.)	4
BIOL Elec/1L	Biology course level 2000+	4	STAT 2023	Biostatistics	3
PHIL	Req. Core Elective	3	FA/HIST/SS	Required Core Elective	3
TOTAL		17	TOTAL		17
<b>Junior Year</b>					
BIOL 3023	Evolutionary Biology	3	BIOL 3273	Inquiry & Modeling in Sci. Ed.	3
PHYS 2013/1L	College Physics I	4	BIOL Elective	Biology course level 4000	3
CHEM 3813	Introduction to Biochemistry	3	PHYS 2033/1L	College Physics II	4
BIOL Elec/L	Biology course 3000	3	FA/HIST/SS	Required Core Elective	3
FA/HIST/SS	Required Core Elective	3	FA/HIST/SS	Required Core Elective	3
TOTAL		16	TOTAL		16
<b>Prelicensure Checklist</b>					
<b>Senior Year</b>					
SEED 4003	Teaching Sec. Sci.	3	STEM 4506	Supervised Teaching Internship	6
STEM 4333	Hist. Philosophy Teaching Sci.	3	STEM 4403	Teaching Seminar	3
BIOL Elective	Biology course level 4000	3	FA/HIST/SS	Required Core Elective	3
BIOL Elective	Biology course level 4000	3			
BIOL Elective	Biology course level 4000	3			
TOTAL		15	TOTAL		12
Total Hours: 125					

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**Sample Course Sequence**

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