



## STEM EDUCATION ADVISING GUIDE

Bachelor of Science (BS) in Chemistry /Grades 7-12 Chemistry 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

#### 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 20<sup>th</sup> 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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#### MATHEMATICS CORE (3 courses—12 hours)

- MATH 2554 Calculus I
- MATH 2564 Calculus II
- MATH 2574 Calculus III

#### PHYSICS CORE (2 courses—8 hours)

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

Note: The mathematics & physics prerequisites for these courses are substantial. These courses & their prerequisites should be scheduled early in the student's program.

#### STEM EDUCATION (24 hours)

- ARSC 1201 Intro to Teaching STEM Subjects and
- ARSC 1212 Field Exp. in Teaching STEM Subj.
- or-** STEM 2003 Art of STEM Communication
- STEM 2103 Knowing and Learning
- STEM 3203 Classroom Interactions
- \*CHEM 3273 Inquiry & Modeling in Science Education (counted in CHEM 3000 level electives)
- SEED 4003 Teaching Secondary Science
- STEM 4333 Hist. & Philosophy of T. Science
- STEM 4403 Teaching Seminar
- STEM 45006 Teaching Internship

#### CHEMISTRY CORE (

- CHEM 1103/1101L University Chemistry I/Lab
- CHEM 1123/1121L University Chemistry II/Lab
- or-** CHEM 2263/2261L Analytical Chemistry/Lab
- CHEM 3504 Physical Chemistry I
- CHEM 3514/3512L Physical Chemistry II/Lab
- CHEM 3703/3702L Organic Chemistry I/Lab
- CHEM 3713/3712L Organic Chemistry II/Lab
- CHEM 4213/4211L Instrumental Analysis
- CHEM 4123 Advanced Inorganic Chemistry I
- CHEM 4723 Experimental Methods in Organic and Inorganic

The Fulbright College writing requirement is satisfied by the formal research/analytical reports required in Physical Chemistry Laboratory—CHEM 3451L or CHEM 3512L—or by completing an honors thesis.

OPTIONAL: This program meets the minimum requirements for certification by the American Chemical Society if CHEM 3813 Intro to Biochemistry or CHEM 4813H/CHEM4843H Honors Biochemistry I/II is included.

- CHEM 3813 Intro to Biochemistry **-or-**
- CHEM 4813H Biochemistry I **-and-**
- CHEM4843H Honors Biochemistry II
- CHEM4843H Honors Biochemistry II

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#### Sample Course Sequence

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Fall Semesters		Hours	Spring Semesters		Hours
<i>Freshmen Year</i>					
ARSC 1201	Intro to Teaching STEM Subjects (& U. Pers.)	1	ARSC 1212	Field Exp. in Teaching STEM Sub.	2
CHEM 1103/1L	University Chemistry I/lab	4	CHEM 1123/1L	University Chemistry II/Lab	4
MATH 2554	Calculus I	4	MATH 2564	Calculus II	4
ENGL 1013	Composition I	3	ENGL 1023	Composition II	3
FA/PHIL/HIST/SS	Required Core Elective	3	FA/PHIL/HIST/SS	Required Core Elective	3
TOTAL		15	TOTAL		15
<i>Sophomore Year</i>					
STEM 2103	Knowing and Learning	3	STEM 3203	Classroom Interactions	3
PHYS 2054	University Physics I	4	PHYS 2074	University Physics II	4
MATH 2574	Calculus III	4	CHEM 3713/2L	Organic Chemistry II/Lab	5
CHEM 3703/2L	Organic Chemistry I/Lab	5	CHEM 2263/1L	Analytical Chemistry/Lab	4
TOTAL		16	TOTAL		16
<i>Junior Year</i>					
CHEM 3504	Physical Chemistry I	4	BIOL 3273	Inquiry & Modeling in Sci. Ed.	3
FA/PHIL/HIST/SS	Required Core Elective	3	CHEM 3514/2L	Physical Chemistry II/Lab	6
FA/PHIL/HIST/SS	Required Core Elective	3	CHEM 4213/L	Instrumental Analysis/Lab	4
CHEM 4123	Advanced Inorganic Chemistry I	3	FA/PHIL/HIST/SS	Required Core Elective	3
Free Elective		3			
TOTAL		16	TOTAL		16
<b>Prelicensure Checklist</b>					
<i>Senior Year</i>					
SEED 4003	Teaching Secondary Science	3	STEM 4506	Teaching Internship	6
STEM 4333	History & Philosophy Sci. Teaching	3	STEM 4403	Teaching Seminar	3
CHEM 4723	Exp Methods in Organic and Inorganic	3	Free elective	as needed	1
Free Elective	Elective	3			
FA/PHIL/HIST/SS	Required Core Elective	3			
TOTAL		15	TOTAL		10
<b>Total hours for degree: 120</b>					