

STEM EDUCATION ADVISING GUIDE

Bachelor of Science (BS) in Physics /Grades 7-12 Physics 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 & GOVERNMENT

(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

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 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 (2 courses - 8 hours)

- CHEM 1103/11011 University Chemistry I
- CHEM 1123/11211 University Chemistry II
OR 8 hours of CSCE:
- ~~CSCE 2004 Programming Foundations and~~
- ~~CSCE 2014 Programming Foundations II~~

MATHEMATICS (5 courses – 19 hours)

- MATH 2554 Calculus I
- MATH 2564 Calculus II
- MATH 2574 Calculus III
- MATH 2584 Differential Equations and Laplace Transform
- *MATH 3083 Linear Algebra

Note: CSCE 3513, CSCE 4423 GEOS 4223, or MEEG 2703 can be substituted for MATH 3083 with a departmental advisor's approval.

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
- PHYS 3273 Inquiry & Modeling in Science Education (counted as PHYS 3000 level electives)
- SEED 4003 Teaching Secondary Science
- STEM 4333 History & Philosophy of Teaching Science
- STEM 4403 Teaching Seminar
- STEM 4506 Supervised Teaching Internship

PHYSICS CORE (7 courses – 23 hours)

- PHYS 2054 University Physics I
- PHYS 2074 University Physics II
- PHYS 2093 University Physics III
- PHYS 3414 Electromagnetic Theory
- PHYS 3613 Modern Physics
- PHYS 4073 Intro to Quantum Mechanics
- PHYS 4991 Physics Senior Seminar

PHYSICS ELECTIVES-Students must complete one concentration below; discuss with your advisor.

- Astronomy (16 hrs. Minimum)
- Biophysics (16 hrs. Minimum)
- Computational (16 hrs. Minimum)
- Electronics (16 hrs. Minimum)
- Geophysics Concentration (24 hr. min.)
- Optics (16 hrs. Minimum)
- Professional (16 hrs. Minimum)

OPTIONAL: MATH MINOR

- MATH 2603 Discrete Math OR
- MATH 2803 Intro. to Math. Proof

OPTIONAL: CSCE MINOR

- CSCE 2004 Programming Foundations I
- CSCE2014 Programming Foundations II
- CSCE 3193 Programming Paradigms

Three additional CSCE courses 2000 level or higher

- _____
- _____
- _____

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Sample Course Sequence

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Fall Semesters		Hours	Spring Semesters		Hours
Freshmen Year					
ARSC 1201	Intro to Teaching STEM Subjects (& U. Pers.)	1	ARSC 1212	Field Exp. in Teaching STEM Sub.	2
PHYS 2054/L	University Physics I	4	PHYS 2074/L	University Physics II	4
MATH 2554	Calculus I	4	MATH 2564	Calculus II	4
FA/PHIL/HIST/SS	Required Core Electives	3	FA/PHIL/HIST/SS	Required Core Electives	3
ENGL 1013	Composition I	3	ENGL 1023	Composition II	3
TOTAL		15	TOTAL		16
Sophomore Year					
STEM 2103	Knowing and Learning	3	STEM 3203	Classroom Interactions	3
PHYS 2094/L	University Physics III	4	PHYS 3613	Modern Physics	3
MATH 2574	Calculus III	4	MATH 2584	2584 Diff. Equations	4
CHEM1104	University Chemistry I or Programming Foundations I (CSCE 2004)	4	CHEM1124	University Chemistry II or Programming Foundations II (CSCE 2014)	4
			Free Elective	Free electives as needed	3
TOTAL		15	TOTAL		17
Junior Year					
MATH 3423	Advanced Applied Mathematics	3	PHYS 3273	Inquiry & Modeling in Sci. Ed.	3
PHYS/ASTR	Elective 3000 level or higher	4	PHYS 3414	Electromagnetic Theory	4
PHYS/ASTR	Elective 3000 level or higher	4	PHYS/ASTR	Elective 3000 level or higher	4
FA/PHIL/HIST/SS	Required Core Electives	3	FA/PHIL/HIST/SS	Required Core Electives	3
FA/PHIL/HIST/SS	Required Core Electives	3	PHYS 4991	Senior Seminar	1
TOTAL		17	TOTAL		15
Start Prelicensure Checklist					
Senior Year					
STEM 4333	History & Philosophy Sci. Teaching	3	STEM 4506	Supervised Teaching Internship	6
SEED 4003	Teaching Secondary Science	3	STEM 4403	Teaching Seminar	3
PHYS 4073	Quantum Mechanics	3			
FA/PHIL/HIST/SS	Required Core Electives	3			
PHYS/ASTR	Elective 3000 level or higher	4			
TOTAL		17	TOTAL		9
Total hours for degree: 120					