

Requirements for Earth Systems Science Concentration 2014-2015

SECOND LANGUAGE

Second Language Requirement (8 units) (Requirement can be met with proficiency exam):

COURSE	TITLE	UNITS
Semester One		3
Semester Two	(Grade in second semester must be a C or higher)	3

TIER ONE

Traditions and Culture (xxxx160) (6 units):

COURSE	TITLE	UNITS
		3
		3

Individuals and Societies (xxxx150) (6 units):

COURSE	TITLE	UNITS
		3
		3

TIER TWO

Arts (3 units):

COURSE	TITLE	UNITS
		3

Individuals and Societies (3 units):

COURSE	TITLE	UNITS
		3

Humanities (3 units):

COURSE	TITLE	UNITS
		3

Diversity Emphasis (3 units) (gender, race, class, ethnicity, sexual orientation, or non-Western studies):

COURSE	TITLE	UNITS
	(Can be fulfilled with qualified Tier One or Tier Two)	3

English (6 units):

COURSE	TITLE	UNITS
ENGL 101	First-Year Composition	3
ENGL 102	First-Year Composition (grade of B or higher to meet MCWA)	3

Math (6-8 units):

COURSE	TITLE	UNITS
MATH 122A & B or 125	Calculus I with Applications (P: MATH 120R, or MATH 112 and MATH 111, or appropriate Math Placement level) CALCULUS I (Appropriate Math Placement level)	5 3
MATH 129	Calculus II (P: MATH 122B or MATH 125)	3

Chemistry (8 units):

COURSE	TITLE	UNITS
CHEM 151	General Chemistry I (P: MATH 112 or appropriate Math Placement level)	4
CHEM 152	General Chemistry II (P: CHEM 151)	4

Physics (8 units):

COURSE	TITLE	UNITS
PHYS 102	Introductory Physics I (P: appropriate Math Placement level)	3
PHYS 181	Introductory Laboratory I (CR: PHYS 102)	1
PHYS 103	Introductory Physics II (P: PHYS 102)	3
PHYS 182	Introductory Laboratory II (P: PHYS 181; CR: PHYS 103)	1

Computer Science or Additional Math (3 units) (GEOG 330, GIS course, or MATH 163)

COURSE	TITLE	UNITS
		3

Biology (4 units)

COURSE	TITLE	UNITS
ECOL 182R	Introductory Biology II (P: Math Placement level or MATH 112 CR: ECOL 182L)	3
ECOL 182L	Introductory Biology Laboratory II (CR: ECOL 181R)	1

Earth System Core (19 units):

COURSE	TITLE	UNITS
GEOS 251	Physical Geology (Fall and Spring)	4
GEOS 302	Principles Stratigraphy and Sedimentation (P: GEOS 251) (Fall/Spring) (WP)	4
GEOS 478	Global Change (P: intro courses in biological or physical sciences) (Fall)	3
GEOS 484	Coevolution of the Earth and Biosphere (P: MATH 129) (every other Spring)	3
GEOS 414/research	Field experience or research experience (consult with faculty)	4

Earth System Distribution (11 units):

COURSE	TITLE	UNITS
GEOS 450 or HWR 431	Geomorphology (P: GEOS 251) (Spring)	4
HWR 431	Hydrogeology (P: GEOS 251, MATH 129) (Fall)	4
GEOS 412A & B	Ocean Sciences (P: One year of science or consent of instructor) (Spring)	4

One of the following:

GEOS 308	Paleontology (P: GEOS 251) (Fall only)	3
HWR 480	Isotope Tracers in Hydrogeology (P: CHEM 152, GEOS 251) (Fall)	3
GEOS 322	Introduction to Geophysics (P: GEOS 251; CR: MATH 122B) (Spring only)	3
ATMO 421C	Physical Climatology: Mechanisms of Change (P: MATH 129) (Fall)	3

Advisor Approved Emphasis Courses (upper-division science and math) (16 units):

COURSE	TITLE	UNITS
	Generally courses from Geos 300 or 400 level - Can choose from related science	
	Research and Preceptor can total 9 units combined, with a max of 6 units Preceptor (GEOS 397A)	

Free Electives (18 units)

OTHER GEOSCIENCES OPPORTUNITIES

Research experience (GEOS 399, 399, 492, etc.) Do research with a professor and earn credit!

SESS club (Wednesdays at noon) - Society of Earth Science Students <http://www.geo.arizona.edu/SESS/>

Preceptorship program (GEOS 397A) Undergraduate teaching assistant

2014-2015 Finish in Four! ACADEMIC PLAN
Geosciences: Earth Systems Science Concentration

THIS SAMPLE PROGRAM SHOULD NOT BE FOLLOWED WITHOUT CONSULTATION
 WITH THE DEPARTMENT ADVISOR.

Freshman Year

MATH 122A/B or 125	3 (5)	MATH 129	3
ENGL 101	3	ENGL 102	3
Tier 1 Trad	3	GEOS 255	4
GEOS 251	<u>4</u>	ECOL 182R/182L	4
	13 (15)	Tier I Indv	<u>3</u>
			16

Sophomore Year

PHYS 102/181	4	PHYS 102/182	4
CHEM 151	4	CHEM 152	4
GEOS 302	4	Stats or Comp Sci	4
GEOS 308	<u>3</u>	Tier 1 Indv	<u>3</u>
	15		15

Junior Year

GEOS 478	3	GEOS 450	4
Tier 1 Trad	3	GEOS Advisor-Approved	4
Free Electives	6	GEOS 412 A & B	4
GEOS Advisor-Approved	<u>3</u>	GEOS 484	<u>3</u>
	15		15

Summer Session

GEOS 414 or research	<u>4-6</u>
	4-6

Senior Year

GEOS Advisor-Approved	6	GEOS Advisor-Approved	3
Tier 2 Indv	3	Free Electives	8
Tier 2 Arts	3		
Free Electives	<u>2</u>	Tier 2 Humanities	<u>3</u>
	14		14

TOTAL UNITS: 120

NOTES:

1. One course in a student's degree program must focus on non-western cultures or gender/race/ethnicity.
2. No minor is required for this program.
3. Students who do not demonstrate second-semester proficiency in a second language upon entrance into the U of A will be required to complete up to two courses (8-10 units) in a second language. This coursework would be best completed in the freshman year.

