2018 Earth Sciences with 3 AREAS of EMPHASIS

Pullman Campus Only

WASHINGTON STATE UNIVERSITY

School of the Environment
B.S. in Earth & Environmental Sciences
Advising Sheet • Fall – 2018

Student Name _____ ID# _____

Email _____ Advisor: _____

Academic Coordinators: 509- 335-8538 or 509-335-6166; Webster 1227 and 1229

BASIC REQUIREMENTS:

54 Credit minimum required (no more than three, three-credit courses within the major)

First Year Experience (3 Cr.)	Cr	Term	Offered
Roots of Contemporary Issues (HIST 105)	3		F,S,SS
Foundational Competencies (10 Cr..)			
Written Communication			
ENGL 101: Intro Writing [WRTG]	3		F,S,SS
Communication			
HD 205 [COMM] or COM 102 [COMM]	3-4		F,S,SS
Quantitative Reasoning			
MATH 140 [QUAN] or 171[QUAN]	4		F,S,SS
Ways of Knowing (20 Cr.)			
Inquiry in the Social Sciences (3)			
ECONS 101 [SSCI]	3		F,S,SS
Inquiry in the Humanities (3)			
Elective [HUM]	3		F,S,SS
Additional Inquiry (3)			
Elective [HUM, ARTS or SSCI]	3		F,S,SS
Inquiry in Creative and Professional Arts (3)			
Elective [ARTS]	3		F,S,SS
Inquiry in the Natural Sciences (7 min.)			
BIOL 106 Intro to Organismal [BSCI]	4		F,S,SS
CHEM 101 Intro to Chem [PSCI] *OR* CHEM 105 Principles of Chem I [PSCI]	4		F,S,SS
Integrative &Applied Learn –Included in EES Core			
Global Diversity (3)			
SOE 312 [DIVR]	0		
Integrative Capstone (3)			
SOE 404 *OR* 408 [M][CAPS] *OR* SOE 475 [CAPS in process]	0		
Other Required Courses (21 Cr.)			
SOE 110 Environ. & Human	4		F,S
SOE 101 Introduction to Geology *OR* SOE 102 Physical Geology	4		F,S F,S
MATH 106 College Algebra	3		F,S,SS
MATH 108 Trigonometry	2		F,S,SS
CHEM 102 Chemistry Related to Life Sci. *OR* CHEM 106 Principles of Chem II	4		S F,S,SS
PHYS 101 General Physics *OR* PHYS 201 Physics for Scientists or Eng.	4		F,S,SS F,S,SS

Writing in the major requirement: 1)_____ 2)_____

Writing Portfolio/Writing Exam □ **Yes** □ **No**

2-years of high school foreign language **Yes ____**
or at least* 2-semesters at college level** ***(required to graduate) **Yes ____**

Note: To certify in the major you must have at least 24 credits and a 2.0 cum GPA.

CHECKLIST:

Basic Requirements (54 Cr.)

EES Common Core (22-23 Cr.)

Required Lower Div. Math/Stats Electives (5-6 Cr. Min.)

Earth Science Core (7 Cr.)

Professional Electives (31 Cr. minimum @ 200-400 Level) **TOTAL (at least 120 credits with 40 in upper division courses**

EARTH & ENVIRONMENTAL SCIENCE COMMON CORE REQUIREMENTS: (22-23 Cr.)

Advanced Writing/Communications			
ENGLISH 301 Writing & Rhetorical Conv. ENGLISH 402 [M] Technical & Prof Writing Third Writing in the Major Course [M]	3		F,S F,S,SS
Earth Systems			
SOE 210 Earth History & Evolution	4		F,S
Water Sciences			
SOE 315 Water & Earth *OR* SOE 460 Watershed Management	3 3		S S
Ecology			
SOE 300 Natural Resources Ecology *OR* BIOLOGY 372 General Ecology [M]	3 4		F,S F,S,SS
Society & Environment			
SOE 312 Nat Res & Society [DIVR]	3		S
Spatial Analysis			
SOIL SCI 368 Intro to GIS	3		F
Integrated Capstone (UCORE Requirement)			
SOE 404 *OR* 408 [M][CAPS] *OR* SOE 475 [CAPS in process]	3		SS, F, S
Experiential			
SOE 207 Geology Field Camp [EXP]	3		SS

F = Fall; S = Spring; SS = Summer Session;
FAYO = Fall Alt. Yr. Odd; FAYE = Fall Alt. Yr. Even;
SAYO = Spring Alt. Yr. Odd; SAYE = Spring Alt. Yr. Even

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EARTH SCIENCES MAJOR

First Year

First Term	***Hours***
CHEM 101 [PSCI] or 105 [PSCI]	4
SOE 102	4
HISTORY 105 [ROOT] MATH 106 or electives [1]	3 3

Second Term	***Hours***
CHEM 102 or 106	4
ECONS 101 [SSCI]	3
ENGLISH 101 [WRTG]	3
SOE 210	4
MATH 108 or electives [1]	2

Second Year

First Term	***Hours***
BIOLOGY 106 [BSCI]	4
Humanities [HUM]	3
SOE 350	
PHYSICS 101 or 201	4

Second Term	***Hours***
SOE 110	4
MATH 140 [QUAN] or 171[QUAN]	4
Professional elective[2,3]	6-8
Complete Writing Portfolio	

Third Term

Summer Session SOE 207[4]	3

Third Year

First Term	***Hours***
SOIL SCI 368	3
STATS 370 or 412	3
Professional elective	6
Foreign Language, if needed[5] [3]	0-4

Second Term	***Hours***
COM 102 [COMM] or HD 205 [COMM]	3-4
Additional [HUM, ARTS, or SSCI] Professional	3
Electives	6-8
SOE 315 or 461	3
Foreign Language, if needed [3]	0-4

Third Term

Summer Session SOE 408 [CAPS][6] [M][3]	3

Fourth Year

First Term	***Hours***
SOE 300 or BIOLOGY 372 [M] [4]	3 or 4
Professional Electives [5]	10
Creative & Professional Arts [ARTS]	3

Second Term	***Hours***
SOE 312 [DIVR]	3
SOE 404 [CAPS] or Professional Electives [5]	3
[ARTS], [HUM], or [SSCI]	3
Electives/Professional Electives	6
Exit Survey[7]	
Total Minimum Hours	120

EARTH SCIENCES CORE (7 Cr.):

Earth Sciences Core	Cr	Term	Offered
SOE 207 Field Camp [EXP] (Summer only)	0		SS
SOE 350 Minerology	4		F
STATS 370 Intro Stats for Engineers *OR* STATS 412 Statistical Methods in Research	3		F,S

PROFESSIONAL ELECTIVES 31 Cr.

21-25 Cr. @ 300-400 level from an area of emphasis below.

Course	Cr	Term	Offered
Additional Writing in the Major course approved by advisor (If BIOL 372 not taken)	3		

SOLID EARTH EMPHASIS PROFESSIONAL ELECTIVE LIST – at least 21 credits from this list below

Course	Cr	Term	Offered
SOE 303 Environmental Geology	3		
SOE 320 Sedimentary Petrology and Sedimentology	3		
SOE 340 Structural Geology [M]	4		
SOE 356 Igneous and Metamorphic Petrology	4		
SOE 405 Geophysics	4		
SOE 408 Field Geology [CAPS][M] (Summer only)	0		
SOE 467 Volcanology	3		
SOE 480 Geochemistry	3		
SOE 498 Seminar	1		
SOILS 374 Introduction to Remote Sensing	3		

EARTH SURFACE PROCESSES, SOILS, AND GEOGRAPHY EMPHASIS PROFESSIONAL ELECTIVE LIST – at least 21 credits from this list below

Course	Cr	Term	Offered
SOE 303 Environmental Geology	3		
SOE 311 Modeling the Environment	4		
SOE 320 Sedimentary Petrology and Sedimentology	3		
SOE 335 Environmental Policy	3		
SOE 340 Structural Geology [M]	4		
SOE 404 The Ecosystem [CAPS] [M]	4		
SOE 405 Geophysics	4		
SOE 412 Global Biogeochemistry [M]	3		
SOE 416 Soil Processes in Earth's Critical Zone	3		
SOE 444 Environmental Assessment	3		
BIOL469 Ecosystem Ecology and Global Change	3		

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"ES" COURSES *with Prerequisites*

BIOL 372 (F/S/SS):	BIOL 106 and CHEM 102 or 105
Or **SOE 300 (F/S):**	No prereq's
SOE 303 (S)	SOE 101 or 102
SOE 207 (SS)	SOE 101 and 210
SOE 315 (SAYO)	SOE 101, 102, PHYS 101 or 201; CHEM 102 or 106; MATH 108, 140 or 171
SOE 320 (F)	SOE 210 and 350
SOE 340 [M] (S)	SOE 210 and MATH 106
SOE 350 (F)	CHEM 101 or 105, SOE 101, 102, or 210
SOE 356 (S)	SOE 350
SOE 405	SOE 340
SOE 408 (SS)	SOE 207, 340 and 350
SOE 467	SOE 320 and 356
SOE 470	SOE 340 and 350
SOE 475	SOE 315 or CE 317, MATH 140, 172 or c//
SOE 480	CHEM 106 and SOE 350
SOE 490	SOE 101 and 210
STATS 370	MATH 172 or 182
STATS 412	STATS 212 or MATH 140, 171 or 202

- S = Spring; F = Fall, SS = Summer
- c// = concurrent

CHEM 101:	*Aleks score of 45%* ***or*** *placement/concurrent enrollment into MATH 105, 106, 107, 108, 140, 171, 172.*
CHEM 102:	*CHEM 101 w/ grade C or better or CHEM 105 w/C or better*
CHEM 105:	*MATH 106 or c// or ALEKS score 70% or higher or MATH 107, 108, 140, 171, 172…*
CHEM 106:	*CHEM 105 w/ grade C or better*
PHYSICS 101:	*MATH 107 or 108 w/grade C or better, ALEKS placement score 80% or higher or passing MATH 140, 171, 202 or 206.*

SOIL SCI 302 Introduction to Agroecology	3		
SOIL SCI 374 Introduction to Remote Sensing	3		
SOIL SCI 441-442 Soil Fertility (with lab)	4		
TCH_LRN 487 Global Geography	3		

WATER AND CLIMATE EMPHASIS PROFESSIONAL ELECTIVE LIST – at least 21 credits from this list below

Course	Cr	Term	Offered
SOE 303 Environmental Geology	3		
SOE 311 Modeling the Environment	4		
SOE 320 Sedimentary Petrology and Sedimentology	3		
SOE 390 Living on the Edge: Global Climate Change and Earth History	3		
SOE 412 Global Biogeochemistry [M]	3		
SOE 463 Water and the Environment	3		
SOE 465 Aquatic Microbial Ecology	4		
BIOL 469 Ecosystem Ecology and Global Change	3		
SOE 475 Groundwater [CAPS in process]	3		
SOE 480 Geochemistry	3		
CE 401 Climate Change Science and Engineering	3		
CE 402 Applied Meteorology	3		
CE 403 Air Quality Management	3		
SOIL SCI 374 Introduction to Remote Sensing	3		
SOIL SCI 414-415 Environmental Biophysics (w/ lab	4		

FOOTNOTES

[1]MATH 106 and 108 are required courses. However, if students have tested into or taken MATH 140, 171, 172 or ALEKS with an 80% or better, MATH 106 and 108 will be waived. If waived, students may need to take additional credits to meet the University minimum requirement of 120 credits.

[2]Students will complete a total of 31 credits of professional electives. Of those 31 credits, 21 credits must be selected from one of the following three emphasis areas: 1) Solid Earth; 2) Earth Surface Processes, Soils, and Geography; or 3) Water and Climate. The Solid Earth emphasis includes the following course options: SOE 303, 320, 340 [M], 356, 404, 405, 480, 498; SOIL SCI 374. The Earth Surface Processes, Soils, and Geography emphasis includes the following course options: SOE 303, 311, 320, 335 [M], 340 [M], 404 [M], 405, 408 [M], 412 [M], 416, 444, 469; SOIL SCI 302, 374, 441/442; TCH LRN 487. The Water and Climate emphasis includes the following course options: SOE 303, 311, 320 390, 408 [M], 412, 463, 465, 469, 475, 480; CE 401, 402, 403; SOIL SCI 374, 414/415. The remaining 10 credits of professional electives can be 300-400-level courses chosen from any of the emphasis areas or selected from a related field or sub-discipline and approved by the academic advisor.

[3]The School of the Environment requires students to take three [M] courses. Each emphasis area includes one required [M] course – SOE 408 for Solid Earth; SOE 404 or 408 for Earth Surface Processes, Soils, and Geography; and SOE 404 for Water and Climate. The remaining two [M] courses will be selected from the professional electives. Course used to fulfill [CAPS] requirement cannot be used to fulfill Professional Electives.

[4]SOE 207 is the approved Experiential Elective for Earth Science majors.

[5]Two years of high school foreign language or at least two semesters of college-level foreign language are required by the College of Arts and Sciences for graduation.

[6]Students in the Solid Earth emphasis must complete SOE 408 as their university [CAPS] requirement. Students in the Earth Surface Processes, Soils, and Geography emphasis must complete SOE 404 or 408 as their university [CAPS] requirement, and students in the Water and Climate emphasis must complete SOE 404 as their university [CAPS] requirement.

[7]Students must complete a School of the Environment exit survey, administered during the final semester.