Guidelines for Geoscience majors in the Earth, Oceans and Climate (EOC) sub-plan: Field, internship, or independent study requirement

The Geosciences Earth, Oceans and Climate (EOC) sub-plan requires an internship, field or research experience (listed as GEOS 414, GEOS 405, or GEOS 498 on the Advisement Report.) The goal of this requirement is to provide you with an individualized, meaningful, direct experience outside the classroom. We have identified diverse ways that you can satisfy this requirement. You should begin thinking about this requirement early in your career: ALL of these options require advance planning. The requirement is flexible, but you must plan ahead to identify an appropriate path, or risk delaying your graduation.

All of these options must comprise the equivalent of 6 credits, must allow for an independent evaluation of the students work at the end of the experience (a grade or a written evaluation), and must be approved in advance by a GEOS faculty member. Each year, a faculty member will be designated to advise Earth Systems students on appropriate options.

YOU MAY CHOOSE FROM THE FOLLOWING OPTIONS:

OPTION 1. A summer field program in Geosciences or a related earth systems field (e.g. ecology, oceanography, hydrology). You can meet this requirement by taking UA classes GEOS 414, GEOS 405, or ECOL 463, Ecology & Natural History of the Sonoran Desert & Gulf of California.

Plan ahead: The UA Geology field camp is highly competitive and has three prerequisites that are not required for the EOC sub-plan; other geology camps may have similar requirements but some have a less competitive admissions process. Field camps in other sciences may also have prerequisites. A list of geological field camps can be found here: http://geology.com/field-camp.shtml. For field programs in other sciences, you will need to get departmental approval. Application deadlines vary but can be as early as December-January. Many of these camps demand 4-6 weeks in the summer.

OPTION 2. Participation in an NSF REU (Research Experience for Undergraduates) program in an Earth System science (you can find these listed at http://www.nsf.gov/crssprgm/reu/reu_search.cfm). A faculty member will sign off on this as fulfilling the requirement. REU positions include a stipend. You can access REU opportunities in diverse fields, including geosciences, ecology, hydrology, ocean science, and atmospheric science.

Plan ahead: These are highly competitive summer research programs in a variety of settings. Application deadlines vary by program and can be as early as December for the following summer.

OPTION 3. An internship or independent study, on or off campus. This may be a senior thesis project based on your interests, a research assistant position in a campus lab, or an internship in a company, a non-profit organization, or a government agency office. A wide range of activities may fulfill this option, but the following requirements must be met:

- The position must be earth system science-related.
- The position must include working a minimum of 12 hours/week for 15 weeks, or the equivalent.
- The student must complete the ES Contract for Independent Work
- During the course of the independent activity, the student must update the approving faculty member regularly and provide the information needed to obtain an independent evaluation of the student’s work by the end of the activity, such as a final project report, to enable grading.

Plan ahead: You will need to plan ahead for all of these, although the details will vary depending on your choice of activity. At a minimum, you will need to organize and obtain the required approvals for any independent activity during the semester before it is to take place. You will be evaluated and graded based on your supervisor’s assessment and your adherence to the contract.
Requirements for Earth, Oceans and Climate Sub-plan: 2021-22 Catalog Year (SPRING 2022 only)

SECOND LANGUAGE REQUIREMENT
(Requirement can be met with proficiency exam):

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<th>Semester 1</th>
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<td>(completion with a grade of C or higher)</td>
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GEOMETRY (BEGINNING SPR22):
- UNIV 101 Intro to GE (1-unit)
- 4 Exploring Perspectives
  - Artist (3-units)
  - Humanist (3-units)
  - Natural Scientist (3-units)
  - Social Scientist (3-units)
- 3 Building Connections (9-units total)
- UNIV 301 Capstone GE (1-unit)

GENERAL EDUCATION (BEGINNING SPR22):

ENGLISH (6 units):
- ENGL 101 English Composition 3
- ENGL 102 English Composition (grade of B or higher to meet MCWA) 3

or
- ENGL 109H English Composition 3

or
- ENGL 106 English Composition for ESL Students 3
- ENGL 107 English Composition for ESL Students 3
- ENGL 108 English Composition for ESL Students (grade of B or higher to meet MCWA) 3

MATHEMATICS (9 units):
- MATH 122A&B or MATH 125 Calculus I (P: MATH 120R, or MATH 112 plus MATH 111, with a grade of C or higher, or appropriate math placement) 3-5
- MATH 129 Calculus II (P: MATH 122B or MATH 125 with grade of C or higher) 3

CHEMISTRY (8 units):
- CHEM 151 General Chemistry I (P: MATH 112 or appropriate math placement) 4
- CHEM 152 General Chemistry II (P: CHEM 151) 4

CHEM 141 Introductory Chemistry I (P: MATH 112 or appropriate math placement) 3
CHEM 143 Introductory Laboratory I (CR: CHEM 141) 1
CHEM 142 Introductory Chemistry II (P: CHEM 141) 3
CHEM 144 Introductory Laboratory II (P: CHEM 143; CR: CHEM 142) 1

PHYSICS (7-8 units):
- PHYS 102 Introductory Physics I (P: MATH 112 or appropriate math placement) 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

or
- PHYS 141 Introductory Mechanics (P: MATH 122B or MATH 125; CR: MATH 129) 4
- PHYS 142 Introductory Optics and Thermodynamics (P: PHYS 141 and MATH 129 or appropriate math placement) 3

COMPUTER APPLICATIONS (3 units):
- Choose one class from: GEOS 280 (MatLab) or GEOS 285 (Python) 3

EOC CORE (Complete all 8 courses):
- GEOS 251 Physical Geology (Fall and Spring) 4
- GEOS 300 Earth Surface Processes (P: GEOS 251) (Spring) 3
- GEOS 302 Principles Stratigraphy and Sedimentation (P: GEOS 251, CHEM 151, PHYS 102 or 141) (Fall) (Writing Proficiency course; MCWA alternative) 4
- GEOS 308 Paleontology (P: GEOS 251) (Spring) 3
- GEOS 342 The History of Earth’s Climate (Fall) 3
- GEOS 412A Ocean Sciences (P: One year of science) (Spring) 3
- GEOS 478 Global Change (P: junior standing) (Fall) 3
- GEOS 479 Climate Dynamics (P: MATH 122B) (Spring) 3

CORE CAPSTONE – RESEARCH OR FIELD EXPERIENCE (6 units):
- Research Consult with GEOS Faculty 6

or
- GEOS 414 Geology Field Camp (P: GEOS 251, 302, 304, 306, 356) or Accessible Earth (P: GEOS 251, GEOS 302 recommended) (both available in Summer Session) 6

EOC ADVISOR APPROVED EMPHASIS COURSES (17 units)
- Majority of courses should consist of GEOS 300 or 400 level courses
- Full list of approved classes on advisement report
- No more than 3 units of Preceptor (GEOS 397A)

*UA BS degrees require a minimum of 120 units for graduation. This sub-plan totals a minimum of 100 units. Additional units may be required to meet the BS minimum requirement of 120 units.

Earth, Oceans and Climate Advisor Approved Emphasis Courses

Rev: 12/14/2021 – sm