B.S. EARTH SYSTEM SCIENCE DEGREE REQUIREMENTS

Basic Requirements:

A. **One course from the following:**
   - ESS 1____ 3____ 5____

   **All of the following courses:**
   - ESS 51_____ 53_____ 55_____ 114_____ 116_____ 191_____ 192_____
   - Math 2A____ 2B____
   - Math 2D____ OR 3A____
   - Chem 1A_____ 1B____ 1C____; 1LC____ 1LD____ OR
   - Chem H2A_____ H2B____ H2C____; H2LA_____ H2LB_____ H2LC_____
   - Physics 3A_____ 3B____ 3C____; 3LB____ 3LC____ OR
   - Physics 7C____ 7E____; 7LC_____

B. **Additional Electives** (seven courses from the following; at least 4 must be ESS courses)

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**Earth System Science:** Any four-unit upper-division course (100-199) except 114, 116, 190C, 198 or H198; (ESS 199/H199 may be counted only once)

**Chemistry:** 51A, 51B/LB, 51C/LC, H52A/LA, H52B/LB, H52C, 131A, 131B, 131C

**Physics:** 51A, 51B, 115A, 120, 134A, 137, 144, 145

**Mathematics:** 2D or 3A (may be counted only once), 3D, 105A, 112A, 115

**Mechanical and Aerospace Engineering (MAE):** 91, 130A, 164, 180, 185

**Civil and Environmental Engineering (CEE):** 156, 162, 171, 172, 176, 178

**Biological Sciences:** 93, 94, 98, D105, E106, E107, E179, E179L, E186, E189, M133

**Criminology, Law and Society:** C148;

**Planning, Policy, and Design:** 133, 138, 139;

**Public Health:** 161

Computing Skills (one of the following may be counted toward the degree): ICS 31, EECS10, MAE 10, Physics 53, or another approved programming course

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Optional **Specialization in Atmospheric Science**
(Courses may be used to fulfill electives in section B, where overlap exists.)

**Four courses from the following:**
   - ESS 101____ 112____ 122____ 124____ 142____ 198/199/199A-B-C_____ (ESS 198/199/199A-B-C must be focused on atmospheric research and may be counted only once)
   - AND One advanced tools course selected from the following: ESS 118____ 138____ 150____

Optional **Specialization in Oceanography**
(Courses may be used to fulfill electives in section B, where overlap exists.)

**Four courses from the following:**
   - ESS 101____ 112____ 130____ 144____ 148____ 170____ 198/198/199/199A-B-C_____ (ESS 198/198/199/199A-B-C must be focused on oceanographic research and may be counted only once)
   - AND One advanced tools course selected from the following: ESS 118____ 138____ 150____

Optional **Specialization in Hydrology and Terrestrial Ecosystems**
(Courses may be used to fulfill electives in section B, where overlap exists.)

**Four courses from the following:**
   - ESS 132____ 140____ 164____ 168____ 174____ 198/198/198/199A-B-C_____ (ESS 198/198/198/199A-B-C must be focused on terrestrial research and may be counted only once)
   - AND One advanced tools course selected from the following: ESS 118____ 134____ 138____ 150____

Optional **Concentration in Geosciences Education with Secondary Teaching Certification**
This concentration allows students pursuing the B.S. in Earth System Science to earn a bachelor's degree and complete the required course work and field experience for a California Preliminary Single Subject Teaching Credential at the same time. In addition to the major requirements listed above, **all of the following must be completed:**

- ESS 7____ OR 140____; Physics 20A____ OR 20B____; Physical Sciences 5____ 105____;
- Chemistry/Physics 193____; LPS 60____
- Education 55____ 109____ 143A____ 143B____ 148____ and two quarters of Education 158____

Effective Fall 2016

6/15/2016