

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)

(ESS)

(ESS)

(ESS)

(ESS)

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, E167, E179, E179L, E186, E189, M133

Criminology, Law and Society: C148;

Public Health: 161

Urban Planning and Public Policy (UPPP): 139

Computing Skills (one of the following may be counted toward the degree): ICS 31, EECS10, MAE 10,

Physics 53, or another approved programming course

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/H198/199/H199A-B-C ____

(ESS 198/H198/199/H199A-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/H198/199/H199A-B-C ____

(ESS 198/H198/199/ H199A-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/H198/199/H199A-B-C ____

(ESS 198/H198/199/ H199A-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____