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)

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)  
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;  
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

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____;  
Chemistry/Physics 193____;  
Chemical/Physical Sciences 5____ 105____;  
Education 55____ 109____ 143A____ 143B____ 148____ and two quarters of Education 158____

Effective Fall 2015 9/22/2015