

**EARTH SCIENCES: NEW STUDENT MAJOR ADVISING SUMMARY**  
**INFORMATION FOR FROSH OR TRANSFER STUDENTS**

The Earth and Planetary Sciences Department welcomes all students interested in our major, and encourages consultation with our staff and faculty undergraduate advisers for guidance in choosing the most appropriate courses for your future academic and career plans. We offer a Bachelor of Science degree for our standard major, combined majors with Environmental Studies or Anthropology (Bachelor of Arts degrees), and a Minor degree. Other more intensive major options include concentrations in Ocean Sciences, Environmental Geology, Science Education or Planetary Sciences (B.S. degrees).

Staff adviser Cathy Smith is available at the department office to help you plan your course schedule. Regardless of how many prerequisite courses you have taken, you should come in for an advising session as soon as you know you're interested in the major. When you are ready to formally enter the major, she will help you complete the Declaration of Major form, which is initiated at your college adviser's office. During the academic year or in the summer Cathy can be reached by phone or in person for walk-in advising 8:30 a.m.-11:30 a.m. and 1:30-4:30 p.m., Monday through Friday. You may also call for an appointment, or contact her at: 831-459-2504, [csmith@es.ucsc.edu](mailto:csmith@es.ucsc.edu), A251 Earth & Marine Sciences Bldg.

The faculty undergraduate adviser, Professor Patrick Chuang, is a good resource for discussions about particular course and concentration choices, as well as graduate school, career and employment opportunities related to the major. Each quarter he has regular advising hours as posted at the Earth and Planetary Sciences Department Office. Contact him at: 831-459-1501 or [pchuang@es.ucsc.edu](mailto:pchuang@es.ucsc.edu), A254 Earth & Marine Sciences Bldg..

The following courses are required for completion of the standard B.S. degree. These courses constitute a solid base for further work in Earth Sciences:

Math 11A and 19A, or Math 11B or 19B, Math 22 or 23A or Eart 111  
Chem 1A, 1B/M and 1C/N  
Phys 6A/L, 6B/M, and 6C/N or Chem 108A/L  
Eart 5/L or 10/L or 20/L (introductory course in physical geology)  
Eart 110A/L, 110B/M and 110C/N (upper division "Foundation Series")  
Eart 190 (Optional 1-unit mentorship course)  
4 upper division electives, at least two of which must be lab or field intensive

The Earth Sciences senior comprehensive requirement can be satisfied in several ways. A large number of majors choose to take Eart 188A/B--Senior Field Internship, offered each spring/summer. This is an intensive mapping (including GIS) and report-writing exercise that is an excellent practical experience in applying what you have learned in class to several different geologically complex field areas. Students may choose instead to work with a faculty adviser on a senior thesis. This may entail fieldwork, laboratory analysis and computer modeling, all of which is written up in a final comprehensive report. The comprehensive requirement may also be filled by exemplary performance, including a major written report, in a graduate level course (by instructor permission only).

The earlier you fulfill chemistry, calculus and physics prerequisites, the easier it will be to complete all required Earth Sciences coursework within four years. This is particularly true for junior transfer students, who should bring a record of courses they have completed to help in the advising process. Advanced Placement exam credit may be accepted towards chemistry and mathematics courses. Also be aware that at UC Santa Cruz, Math 11A or 19A require placement exams before you can enroll. Check the course schedule or Math Department for the times and locations of exams. Substitutions for Earth Sciences courses completed at other institutions may also be approved by petition or via articulation agreements with California community colleges. You will need to present a copy of your unofficial transcripts to Cathy as soon as possible for processing. Please visit the department office or website where other informational materials such as course schedules are posted and/or available for hand out:

**A232 Earth & Marine Sciences Building, (831) 459-4089, Fax: (831) 459-3074**  
**Website: <http://es.ucsc.edu>**

## EARTH SCIENCES MAJOR PLANNER

Students planning for a professional career in the Earth sciences should take more than the minimum number of courses required for the major, if possible. Four-year students have ample flexibility to take additional electives as long as they start some of the required courses by their second year, as do junior transfer students if they have completed most of their General Education requirements and science preparatory courses (calculus, chemistry, physics) before entry. Some lower division Earth Sciences courses may be used to fill "IN", "Q", and "T-2" General Education requirements. Please see the department adviser to develop a major planner for the more intensive concentrations in Environmental Geology, Planetary Sciences, Science Education or Ocean Sciences, or the combined majors with Environmental Studies or Anthropology. (Earth Sciences also offers a Minor which requires Eart 5/L, or Eart10/L, or Eart 20/L plus five upper division courses.)

### **Sample study plans for Bachelor of Science Degree (standard major):**

#### **4 years at UCSC:**

<i>Year</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
1st	Math 11A or 19A College Core Course	Math 11B or 19B Chem 1A	+Eart 10/L Chem 1B/M
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2nd	Eart 111 or Math 22 or Math 23A Chem 1C/N	Physics 6A/L	Physics 6B/M #Eart 109/L
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3rd	#Eart 110A/L Physics 6C/N or Chem 108A/L	#Eart 110B/M Eart Elective	Eart 110C/N Eart Elective
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4 <sup>th</sup>	*Eart Elective Eart 190 (1 unit; optional)	PLUS SENIOR COMPREHENSIVE: Senior Field Internship Eart 188A/188B (or) Senior Thesis (or) Graduate Seminar	

#### **Junior Transfers (with most science preparatory courses completed):**

3rd	#Eart 110A/L Eart 111 or Math 22 or Math 23A	#Eart 110B/M Physics 6A/L	Eart 110C/N Physics 6B/M
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4th	#Eart 109/L Physics 6C/N or Chem 108A/L Eart 190 (1 unit; optional)	Eart Elective Eart Elective PLUS SENIOR COMPREHENSIVE: Senior Field Internship Eart 188A/188B (or) Senior Thesis (or) Graduate Seminar	Eart Elective

+ Or Eart 5/L fall or Eart 20/L winter.

Eart 20/L preferred for Environmental Geology concentration; Eart10/L preferred for Planetary Sciences concentration.

# Prerequisite courses for Senior Field Internship (Eart188A/B)