

**2011-13 Cal Poly Catalog**  
**Natural Resources Management &**  
**Environmental Sciences Department**

**BS EARTH SCIENCES**

- ☐ 60 units upper division      ☐ GWR  
 ☐ 2.0 GPA                              ☐ USCP

\* = Required in Major; also satisfies GE

Note: No major, support or concentration courses may be taken as credit/no credit.

**MAJOR COURSES**

ERSC/SS 110 Orientation in Earth & Soil Sciences <i>or</i> NR 140 Careers in Forestry & Env Mgmt (7/2/13)	1
ERSC 144 Introduction to Earth Systems.....	4
ERSC 223 Rocks and Minerals .....	4
ERSC/GEOG 250 Physical Geography.....	4
ERSC 323 Geomorphology .....	4
ERSC/GEOG 333 Human Impact on the Earth.....	4
ERSC/GEOG 414 Global & Regional Climatology	4
<sup>3</sup> ERSC <i>or</i> SS 461, 462 Senior Project I, II.....	1,3
ASTR 101 Introduction to the Solar System .....	4
BOT 121 General Botany (B2 & B4)*.....	4
BOT 326 Plant Ecology .....	4
BRAE 237 Intro to Engineering Surveying.....	2
CHEM 127, 128 General Chemistry (B3 & B4)* ....	4,4
GEOG 318 Applications in GIS .....	4
<sup>2</sup> GEOG 328 Applications in Remote Sensing (4) <i>or</i> BRAE 345 (3) (1/12/16).....	4
GEOL 201 Physical Geology .....	3
GEOL 241 Physical Geology Lab .....	1
GEOL 415 Structural Geology .....	4
PSC 201 Introduction to Physical Oceanography....	4
SS 121 Introductory Soil Science.....	4
SS 321 Soil Morphology .....	4
STAT 218 Applied Statistics/Life Sciences (B1)* Concentration (see below; 4 units B1)*.....	4 <del>41</del> 40-42
<i>Corrected 2-9-12</i>	<del>124</del> 123-125

**GENERAL EDUCATION (GE)**

72 units required, 16 of which are specified in Major.

→See page 39 for complete GE course listing.

→Minimum of 12 units required at the 300 level.

**Area A Communication (12 units)**

A1 Expository Writing .....	4
A2 Oral Communication .....	4
A3 Reasoning, Argumentation, and Writing.....	4

**Area B Science and Mathematics (no add'l units req'd)**

B1 Math/Statistics * 8 units in Major & Conc.....	0
B2 Life Science * 4 units in Major .....	0
B3 Physical Science * 4 units in Major .....	0
B4 One lab taken with either a B2 or B3 course	

**Area C Arts and Humanities (20 units)**

C1 Literature .....	4
C2 Philosophy .....	4
C3 Fine/Performing Arts .....	4
C4 Upper-division elective .....	4
Area C elective (Choose one course from C1-C4)	4

**Area D/E Society and the Individual (20 units)**

D1 The American Experience (40404) .....	4
D2 Political Economy .....	4
D3 Comparative Social Institutions .....	4
D4 Self Development (CSU Area E) .....	4
(KINE 250 recommended for Geosciences Teaching Concentration)	
D5 Upper-division elective .....	4
(PSY 352 recommended for Environmental Interpretation and Assessment Concentration)	

**Area F Technology Elective (upper division) .....** 4  
 (BRAE 340 recommended for Geosciences  
Teaching Concentration)

**56**

**FREE ELECTIVES.....** **0-1**

*Corrected 2-9-12* **180**

**CONCENTRATIONS (select one):**

**Climate Change Studies Concentration**

ERSC <i>or</i> SS 463 Undergraduate Seminar .....	2
GEOG 325 Climate and Humanity.....	4
GEOG 415 Applied Meteorology/Climatology .....	4
MATH 118 Pre-Calculus Algebra (B1)* .....	4
MATH 119 Pre-Calculus Trigonometry .....	4
PHYS 121 College Physics I .....	4
SOC 218 International Political Economy .....	4
UNIV 350 The Global Environment.....	4
Energy/Sustainability: BRAE 348 <i>or</i> PSC 320 .....	4
<sup>1</sup> Approved electives.....	7-8
Choose from: CRP 375, 438, CRP/FNR 404;EDES 406; ENVE 324; GEOG 301, 440; PHIL 340.	
<i>Note: CRP 438 or ENVE 324 recommended</i>	

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**Environmental Interpretation and Assessment  
Concentration**

ERSC 202 Soil Erosion and Water Conservation	4
ERSC/GEOG 325 Climate and Humanity.....	4
ERSC <i>or</i> SS 463 Undergraduate Seminar .....	2
CRP 420 Land Use Law.....	4
GEOG 301 Geography of Resource Utilization.....	4
MATH 118 Pre-Calculus Algebra (B1)* .....	4
MATH 119 Pre-Calculus Trigonometry .....	4
PHYS 121 College Physics I.....	4
<sup>1</sup> Approved electives.....	11
<i>Select 11 units from the following:</i>	
CRP 212, 336; CRP/NR 404, 408; GEOG 440; NR 306, 320, 416, 418, 425; NR/ES 406 (6/30/13) SS 339 <sup>†</sup>	

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<sup>1</sup> Consultation with advisor is recommended prior to selecting approved electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.

<sup>2</sup> If BRAE 345 is taken for 3 units then one additional unit of Free Electives is required. (1/12/16)

<sup>3</sup> May substitute one of the following senior project courses: ERSC/NR 476, ERSC/NR 477, ERSC/NR 478, ERSC/NR 479 plus one unit of Free Electives is required. (3/10/16)

<sup>†</sup> No more than 4 units of SS 339 may be used.

**Geology Concentration**

GEOL 206 Geologic Excursions .....	1
GEOL 305 Fundamentals of Seismology .....	4
GEOL 310 Igneous and Metamorphic Petrology .....	4
GEOL 330 Principles of Stratigraphy.....	4
GEOL/ERSC 401 Field-Geology Methods .....	4
GEOL/ERSC 402 Geologic Mapping .....	4
GEOL 420 Applied Geophysics .....	3
ERSC or SS 463 Undergraduate Seminar .....	2
MATH 141, 142 Calculus I, II (B1)* .....	4,4
PHYS 141 General Physics IA.....	4
PHYS 132 General Physics II .....	4
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**Geosciences Teaching Concentration**

ASTR 102 Introduction to the Stars and Galaxies .....	4
BIO 113 Animal Diversity and Ecology <i>or</i> BIO 112 (10/3/13) .....	4
EDUC 300 Intro to the Teaching Profession.....	3
GEOG 301 Geography of Resource Utilization .....	4
GEOG 325 Climate and Humanity.....	4
GEOL 203 Fossils and the History of Life .....	4
GEOL 204 Geologic History of California.....	3
MATH 118 Pre-Calculus Algebra (B1)* .....	4
MATH 119 Pre-Calculus Trigonometry.....	4
PHYS 121 College Physics I.....	4
PSC 424 Organizing/Teaching of Phys Sciences <i>or</i> EDUC 480 Computer Based Curriculum .....	4/3 2
<i>Corrected 2-9-12</i>	<del>4</del> 40-42

**Land and Water Resources Concentration**

ERSC 202 Soil Erosion and Water Conservation .....	4
ERSC or SS 463 Undergraduate Seminar .....	2
CHEM 129 General Chemistry .....	4
MATH 141, MATH 142 Calculus I, II (B1)* .....	4,4
PHYS 141, 132 General Physics IA, II .....	4,4
SS 432 Soil Physics .....	5
<sup>1</sup> Approved electives (min 6 units 300-400 level).....	11
<i>Select 11 units from the following:</i>	
ANT 202, 309, 310;	
CRP/NR 408;	
ERSC/GEOG 415;	
ERSC/GEOL 401, 402;	
GEOG 440;	
NR 306, 320, 418;	
SS 339 <sup>†</sup> , 432	
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**Individualized Course of Study**

ERSC or SS 463 Undergraduate Seminar .....	2
MATH 118 Pre-Calculus Algebra (B1)* .....	4
MATH 119 Pre-Calculus Trigonometry.....	4
PHYS 121 College Physics I.....	4
Approved electives (min 10 units 300-400 level).....	27
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<sup>1</sup> Consultation with advisor is recommended prior to selecting approved electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.