

# BACHELOR OF SCIENCE IN EARTH SCIENCE (IMPACTED)

## Major Requirements Worksheet

2014-2015 Catalog

Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

The Earth Science program prepares students to understand the natural environment, earth resources, land and ocean use, pollution, geology of the sea floor, and other areas of critical importance to present and future world problems. Career-oriented interdisciplinary emphases are offered in Geohydrology/Environmental Geology, Engineering Geology, Exploration Geophysics, and Marine Geology/Oceanography. Earth Science majors must receive a grade of "C" or better in all courses required for the major.

*NOTE: This checklist is not intended to replace advising from the major department. Students should consult with the major advisor to determine the appropriate sequence of courses. This checklist is to inform students of major requirements and course prerequisites only. CSULB Enrollment Services prepares the Academic Requirements Report, which is the official graduation verification. Pre-Earth Science majors must complete their GE Foundation courses, and the highlighted areas below all with a "C" or better and a cumulative GPA of 2.5, by 60 units to be considered for the major.*

Semester	Grade	Course #	Course Title	Prerequisites
		MATH 122	Calculus I (4)	Appropriate MDPT placement; or MATH 111 and 113
		MATH 123	Calculus II (4)	MATH 122
		CHEM 111A	General Chemistry (5)	A passing score on the CPT. Corequisite: MATH 109 or higher
		PHYS 151	Mechanics and Heat (4)	Pre/Corequisite: MATH 122
		PHYS 152	Electricity and Magnetism (4)	PHYS 151; Pre/Corequisite: MATH 123
		GEOL 102	General Geology (3)	Pre/Corequisite: A course that fulfills the A.1 GE Requirement and High School Math**
		GEOL 104	Geology Laboratory (1)	Pre/Corequisite: A course that fulfills the A.1 GE Req., HS math**, Concurrent or prior enrollment in GEOL 102
		GEOL 240	Historical Geology (4)	GEOL 106 or both GEOL 102, 104
		GEOL 250	Introduction to Field Petrology and Geological Field Techniques (3)	GEOL 102 with 104 or 105; or GEOL 106; Corequisite: GEOL 240

### UPPER DIVISION COURSES (See major faculty advisor)

#### Take ALL of the following courses:

		GEOL 322	Crystallography, Mineralogy and Optical Methods (5)	GEOL 250; CHEM 101 or 111A
		GEOL 350	Spring Field Geology (2)	GEOL 250 and 443. Pre/Corequisite GEOL 433
		GEOL 420	Geological Writing (3)	GE Foundation completed, upper division standing, GEOL 102, 104, 240, 250; and at least 6 units of Geology courses at 300-level or above. Additional GEAR requirements**
		GEOL 428	Igneous and Metamorphic Petrology and Petrography (4)	GEOL 322; CHEM 111A, 111B
		GEOL 433	Structural Geology (4)	GEOL 250, 322; PHYS 151

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	GEOL 443	Stratigraphy/Sedimentology (4)	GEOL 240, 322
	GEOL 460	Introduction to Geophysics (3)	PHYS 151, 152; and MATH 123

**Additional Required Courses for the various emphases are listed below.\*\***

<p><b>1. <u>Geohydrology/Environmental Geology (120 units)</u></b> CHEM 111B General Chemistry (5) GEOG 481 Geographic Information Science for Natural Sciences (4) GEOL 339 Introduction to Geomorphology (3) GEOL 450 Summer Field Geology (4) GEOL 461 Introduction to Geochemistry (3) GEOL 474 Physical Hydrology (3) GEOL 477 Hydrogeology (3)</p>	<p><b>3. <u>Exploration Geophysics (120 units)</u></b> GEOL 462 Physics &amp; Chemistry of Earth's Interior (3) MATH 224 Calculus III (4) MATH 247 Introduction to Linear Algebra (3) MATH 370A Applied Mathematics I (3) PHYS 310 Analytic Mechanics I (3) PHYS 340A Electricity and Magnetism I (3) Take <b>5 units</b> in consultation with undergraduate advisor.</p>
<p><b>2. <u>Engineering Geology (120 units)</u></b> C E 205 Analytical Mechanics I (Statics) (3) C E 345 Geotechnical Engineering I (3) C E 346 Geotechnical Engineering Laboratory (1) C E 445 Geotechnical Engineering II (3) MATH 224 Calculus III CHEM 111B General Chemistry (5) GEOL 477 Hydrogeology (3)</p>	<p><b>4. <u>Marine Geology/Oceanography (120 units)</u></b> CHEM 111B General Chemistry (5) GEOL 341 Paleontology and Biostratigraphy (4) MATH 224 Calculus III (4) GEOL 461 Introduction to Geochemistry (3) GEOL 465 Physical and Chemical Oceanography (3) GEOL 466 Oceanography Lab and Ocean Studies (1) GEOL 496 Investigations in Geology &amp; Other Earth Sciences (1-4)</p>