# Bachelor of Science in Earth Science

## Major Requirements Worksheet

### 2012-2013 Catalog

**Name:** _______________________________  
**Student ID:** ___________________________

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*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. CSULB Enrollment Services prepares the Academic Requirements Report, which is the official graduation verification.*

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<table>
<thead>
<tr>
<th>Grade</th>
<th>Course #</th>
<th>Course Title</th>
<th>Semester</th>
<th>Prerequisites (All prerequisite courses must have a “C” or better)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GEOL 102</td>
<td>General Geology (3)</td>
<td></td>
<td>Pre/Corequisite: A course that fulfills the A.1 GE Requirement and High School Math*</td>
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<tr>
<td></td>
<td>GEOL 104</td>
<td>Geology Laboratory (1)</td>
<td></td>
<td>Pre/Corequisite: A course that fulfills the A.1 GE Req., HS math*, Concurrent or prior enrollment in GEOL 102</td>
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<tr>
<td></td>
<td>GEOL 240</td>
<td>Historical Geology (4)</td>
<td></td>
<td>GEOL 106 or both GEOL 102, 104</td>
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<td></td>
<td>GEOL 250</td>
<td>Introduction to Field Petrology and Geological Field Techniques (3)</td>
<td></td>
<td>GEOL 102 with 104 or 105; or GEOL 106, Pre/Corequisite GEOL 240</td>
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<td></td>
<td>GEOL 273</td>
<td>Computer Statistical Methods in Geology (4)</td>
<td></td>
<td>GEOL 240, MATH 117 or 122</td>
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<tr>
<td></td>
<td>CHEM 111A</td>
<td>General Chemistry (5)</td>
<td></td>
<td>A passing score on the CPT; MATH 113 or 117 or 119A or 122</td>
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<td></td>
<td>MATH 122</td>
<td>Calculus I (4)</td>
<td></td>
<td>Appropriate MDPT placement; or MATH 111 and 113, or 117</td>
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<td></td>
<td>MATH 123</td>
<td>Calculus II (4)</td>
<td></td>
<td>MATH 122</td>
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<tr>
<td></td>
<td>MATH 224</td>
<td>Calculus III (4)</td>
<td></td>
<td>MATH 123 or 222</td>
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<tr>
<td></td>
<td>PHYS 151</td>
<td>Mechanics and Heat (4)</td>
<td></td>
<td>MATH 122 (can also be a corequisite)</td>
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<tr>
<td></td>
<td>PHYS 152</td>
<td>Electricity and Magnetism (4)</td>
<td></td>
<td>PHYS 151; Pre/corequisite MATH 123</td>
</tr>
</tbody>
</table>

### Upper Division (for upper division advising, see your faculty advisor). **Take ALL of the following courses:**

- GEOL 322 Crystallography, Mineralogy and Optical Methods (5)  
- GEOL 350 Spring Field Geology (2)  
- GEOL 428 Igneous and Metamorphic Petrology and Petrography (4)  
- GEOL 433 Structural Geology (4)  
- GEOL 443 Stratigraphy/Sedimentology (4)  
- GEOL 460 Introduction to Geophysics (3)  
- GEOL 461 Introduction to Geochemistry (3)  
- GEOL 250; CHEM 101 or 111A  
- GEOL 250 and 443. Pre/Corequisite GEOL 433  
- GEOL 322; CHEM 111A, 111B  
- GEOL 250, 322; PHYS 151  
- GEOL 240, 322  
- PHYS 151, 152; MATH 123; and GEOL 273  
- CHEM 111A, 111B and MATH 123

### Additional Required Courses (for the various emphasis are listed below (see catalog for Prerequisites):

1. **Geohydrology/Environmental Geology (122 units)**
   - CE 205 Analytical Mechanics I (Statics) (3)
   - CE 335 Fluid Mechanics (3)
   - CE 336 Fluid Mechanics Laboratory (1)
   - CHEM 111B General Chemistry (5)
   - ES P 300 Environmental Law and Policy (3)
   - GEOL 450 Summer Field Geology (4)
   - GEOL 461 Introduction to Geochemistry (3)
   - GEOL 477 Hydrogeology (3)
   - MICR 200 General Microbiology for Health Professionals (4)

2. **Engineering Geology (129 units)**
   - CE 205 Analytical Mechanics I (Statics) (3)
   - CE 345 Geotechnical Engineering I (3)
   - CE 346 Geotechnical Engineering Laboratory (1)
   - CE 445 Geotechnical Engineering II (3)
   - CHEM 111B General Chemistry (5)
   - GEOL 444 Engineering Geology (4)
   - GEOL 450 Summer Field Geology (4)
   - GEOL 477 Hydrology (3)
   - MAE 373 Mechanics of Deformable Bodies (3)

3. **Exploration Geophysics (126 units)**
   - BIOL 200 General Biology (4)
   - GEOL 462 Physics and Chemistry of Earth’s Interior (3)
   - 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 8 units in consultation with undergraduate advisor.

4. **Marine Geology/Oceanography (122 units)**
   - BIOL 200 General Biology (4)
   - CHEM 111B General Chemistry (5)
   - GEOL 341 Paleontology and Biostratigraphy (4)
   - GEOL 364 Introduction to Geological Oceanography (2)
   - 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 & Other Earth Sciences (1)

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*See catalog for more detail

**NOTE:** See the catalog for courses that do not meet any specific or elective requirements for the major.

*Updated 12/12/12 LM*