## G225 - Earth Materials Syllabus - Spring 2016

**Lecture**
Section T7249 11:15A-12:30P Tuesdays, Rm GY210 and Thursdays, Rm GY 214

**Lab**
Section T7250 1:25P-03:20P Thursday, Room GY 245
Section T7251 3:35-5:30P Thursday, Room GY 245

**Instructor:** Dr. Edward M. Ripley  
**Office:** Geology 329, **Phone:** 855-1196  
email: ripley@indiana.edu  
website: [http://www.indiana.edu/~g225](http://www.indiana.edu/~g225)

**Lab Instructor:** Derek Prokopf  
email: dprokopf@umail.iu.edu

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<thead>
<tr>
<th>Date</th>
<th>Subject</th>
<th>Reading</th>
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<tbody>
<tr>
<td>1/12</td>
<td>Atomic structure - basic principles</td>
<td>Chapters 1+4</td>
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<tr>
<td>1/14</td>
<td>The Periodic Table and atomic properties</td>
<td>Chapter 4</td>
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<td>Laboratory: <em>Introduction to Earth Materials</em></td>
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<tr>
<td>1/19</td>
<td>Formation of ions; bonding</td>
<td>Chapter 4</td>
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<td>1/21</td>
<td>Pauling’s Rules</td>
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<td>Laboratory: <em>Atomic Periodicity and Atomic Structure</em></td>
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<td>1/26</td>
<td>Coordination polyhedra</td>
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<td>1/28</td>
<td>Mineral compositions - representation</td>
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<td>Laboratory: <em>Physical Properties of Minerals</em></td>
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<td>2/2</td>
<td><strong>Lecture Examination #1</strong></td>
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<td>2/4</td>
<td>Introduction to Geologic Environments</td>
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<td>2/9</td>
<td>Igneous processes: plate tectonics and magma origin</td>
<td>Chapter 8</td>
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<td>Igneous processes: compositions and compositional variations</td>
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<td>2/16</td>
<td>Igneous processes: crystallization of magma</td>
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<td>Igneous processes: numerical simulation of fractional crystallization</td>
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<td>Igneous processes: subduction zones - andesites and granites</td>
<td>Chapter 9</td>
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<td>Igneous processes: minerals and review</td>
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<td>Sedimentary processes: weathering - chemical and biological controls</td>
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<td>Sedimentary processes: transport and deposition of detrital sediments</td>
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<td>Sedimentary processes: Compositional maturity of detrital sediments</td>
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<td>3/24</td>
<td>Sedimentary processes: chemical and biologic controls on rock formation -</td>
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<td>carbonates, evaporites, banded iron formations</td>
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<td>3/31</td>
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<td>Surface processes: factors that control soil formation</td>
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<td>Surface processes: identifying soil types and features</td>
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<td>Ore deposits - economic minerals</td>
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<td>Plate tectonics and the rock cycle</td>
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<td>FINAL EXAM Thursday May 5th FROM 12:30 P.M. –2:30 P.M.</td>
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