### Tentative Syllabus

**GEOL 207 Environmental GeoHazards**  
**Spring 2010**  
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**Tentative Syllabus**

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<tr>
<th>Week of</th>
<th>Lecture Topic</th>
<th>Text Reading *</th>
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| Jan. 18 | **INTRODUCTION** - Perspectives, Linkages  
Natural Geohazards & Nature | Ch. 1 |
| Jan. 25 | **EARTH'S INTERIOR** – Earth structure, and  
Plate tectonics and Earth’s tectonic engine | Ch. 2 |
| Feb. 1  | **SEISMIC HAZARDS**  
Earthquakes, Ground shaking, buildings,  
Liquifaction, Tsunami, and Secondary effects  
Friday - Current Hazards Discussion | Ch. 2 and 3 |
| Feb. 8  | **VOLCANIC HAZARDS**  
Materials, Eruption Styles, Volcano Types  
Volcanic Risk and Hazards  
Class Debate-Pacific Cascades Volcanic Hazards | Ch 4  
Read McPhee "Iceland Lava" |
| Feb. 15 | **EXAM #1** **  
**EARTH'S SURFACE** – weathering, erosion, surface  
Processes  
**SOIL HAZARDS** - morphology, age, land stability  
- expansive soils -- hidden disasters |  |
| Feb. 22 | **HILLSLOPE HAZARDS**  
Rockslides  
Landslides  
processes, recognition, mapping,  
evaluation, mitigation | Ch. 6 |
| Mar. 1  | Debris flows (mudslides)  
**SUBSIDENCE** – sinkholes & ground collapse  
Friday - Current Hazards Discussion | Read McPhee "Los Ang. vs Mtns"  
Ch. 7 |
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<tr>
<th>Date</th>
<th>Topic</th>
<th>Chapters</th>
<th>Readings</th>
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<tr>
<td>Mar.  8</td>
<td><strong>FLOOD HAZARDS</strong>&lt;br&gt;– river regimes, river channel processes&lt;br&gt;and channel geometry&lt;br&gt;- Stream Channelization - general, problems</td>
<td>Ch. 5</td>
<td>Readings TBA</td>
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<td>Mar. 15</td>
<td>**SPRING BREAK **</td>
<td>No Lab – Fall Break</td>
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<td>Mar. 22</td>
<td><strong>FLOODS</strong> – impacts, responses&lt;br&gt;Flood Frequency and <strong>Paleofloods</strong>&lt;br&gt;Friday - Current Hazards Discussion</td>
<td>Ch. 5</td>
<td>Readings TBA</td>
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<td>Mar. 29</td>
<td><strong>ALLUVIAL FANS</strong> - hazards, ages, activity&lt;br&gt;- regulation and development&lt;br&gt;<strong>EXAM #2</strong></td>
<td>Readings TBA</td>
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<td>Apr.  5</td>
<td><strong>COASTAL HAZARDS</strong>&lt;br&gt;Waves, Beaches &amp; Nearshore Processes&lt;br&gt;Barrier Islands&lt;br&gt;Coastal Storms – Hurricanes and Extratropical Cyclones&lt;br&gt;All Day Field Trip - Sat or Sun - April 10 or 11&lt;br&gt;(for those opting out - annotated bibliographies due on Monday April 12)</td>
<td>Ch. 10 and 9</td>
<td>Readings TBA</td>
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<td>Apr. 12</td>
<td>New Orleans Case History - Hurricane Katrina&lt;br&gt;Class Debate on New Orleans</td>
<td>Read McPhee &quot;Atchafalaya&quot;</td>
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<td>Apr. 19</td>
<td><strong>WILDFIRES, IMPACTS &amp; EXTINCTIONS&lt;br&gt;</strong>* Presentations of Hazard Projects/Posters ***</td>
<td>Ch. 12 and 13</td>
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<td>Apr. 26</td>
<td><strong>GLOBAL CLIMATE CHANGE</strong>&lt;br&gt;Global Warming and Global Change&lt;br&gt;Proxy Record of Long-term Climate&lt;br&gt;Class Debate – Human Induced Global Warming</td>
<td>Ch. 11</td>
<td>Read “Thin-Ice” Readings TBA</td>
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<td>May  3</td>
<td><strong>EXAM #3</strong></td>
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* additional readings will be assigned to supplement the text

**Important Information:**

**Textbooks:** 1) Keller and Blodgett, Natural Hazards and Disasters: Belmont, CA, Thompson, 490p.

**Grading and Requirements:**
1) Exams = 60% (20% for each hour exam)
2) Class Discussions, Debates, and Current Hazards Discussions = 15%;
3) Hazard Research Poster = 20% (DUE April 23, 2010)
4) Weekend Field Trip = optional all-day trip TBA (April 10 or 11) or alternative Annotated Bibliography on Selected Hazard – done as a Web Page = 5% (Apr 12)
General Comments:

1. Attendance - Much of the material on the exams will come from slides and discussion in class, thus, you may find it difficult to do well if you miss class because much of the commentary on the slides will NOT be on the powerpoint slides. Much of what we study in this field is highly visual. I EXPECT you to take notes on the discussion of slides in class.

2. Powerpoints will be available on Blackboard (Lectures Folder). I will try to post these before class, but they will likely be modified before final presentation in class. If they change, I will try to place the updated version on Blackboard after class but I may not always remember to update them.

3. Your participation is expected and will be graded from daily class discussions, and more formally from special class debates, special class discussions, and short presentations and discussion on current hazards.

4. Each of you will present a 5 minute presentation (with a powerpoint slide or two) about a current hazard (one that occurred within the past 6 months). Each should be different - send me an e-mail to secure your event (if it's already taken you must find another). In addition to understanding what occurred, be prepared to discuss what we can learn about avoiding such problems. Everyone will be expected to join in the class discussion regarding how we may have avoided these hazards and how things might be modified for future improvement. Our goal is to analyze how improved understanding of the science can decrease hazards associated with natural processes. (NOTE: Off limits will be the Haitian Earthquake as we will have discussed that in class). These discussions will take place on 3 dedicated days - usually Fridays.

5. Hazard Research Posters will be assigned shortly and will be due for presentation at the April 23 class Poster Session. I expect these to be prepared in a professional manner (see the many posters hanging around Geology as style examples) using Adobe Illustrator, Powerpoint, or some such program to construct your poster. Size will be limited to 48 inches. You can arrange to print your posters at Media Services at the Library (there will be a charge) or you may choose to print out your poster piecemeal and fasten it to posterboard. If you choose the latter option, please be sure to type everything, do it in color, and make sure it is neatly arranged in a professional manner. More on this coming soon!

6. There will be a day-long weekend field trip (either April 10 or 11) to view local geology and hazards. Full credit can be achieved by attending and participating in this trip. If you can't make the trip or choose not to, the alternative assignment is to prepare a detailed annotated bibliography of a geologic hazard (topic MUST be approved by me in advance) which will be due on April 12. References included in the bibliography should include at least 10 references from professional journal articles or books/book chapters and up to 10 on-line articles or websites.

7. Extra readings will be assigned occasionally during the semester and available on Blackboard (Readings Folder)