Contact information
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Office: SCI-217 (7-217)
Office hours: MWF 10:00-10:50 AM, TTh 11:00-11:50 AM, and by appointment
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Course logistics
Meeting times: MWF 12:00-12:50 PM and W 1:00-3:50 PM
Meeting place: Science 216
Units: 4.0
Degree applicability: UC, CSU, and COS

Student success
Success in Earth and Space Sciences (ESS) courses like Physical Geology (GEOL 1210) depends on a student's preparation, participation and the format of the course.

Preparation: ENGL 1001 (College Composition) and MATH 0850 or 0851 (Elementary Algebra or Beginning Algebra I) are prerequisites for this course. Students who have successfully completed these prerequisites succeed in ESS courses like GEOL 1210 at a rate (68%) more than twice that of students who have not (32%). If you have not successfully completed ENGL 1001 and MATH 0850 or 0851 you must do so before you enroll in GEOL 1210.

Participation: Students who participate in their ESS classes at least 85% of the time (as measured by attendance and the submission of assignments) succeed at a much higher rate (82%) than do students enrolled in the class as a whole (57%).

Format: Students who enroll in online ESS courses are significantly less likely to complete them (57%) than are students who enroll in face-to-face or lab courses (70 and 72%, respectively). If you are a student who learns best by hands-on experience or in a group setting you are encouraged to take a lab or face-to-face class rather than an online class if possible.

Course materials
Learning outcomes

Upon successful completion of this course a student is expected to be able to:

1. Correctly identify a variety of common rocks and minerals and explain what each tells us about the geologic processes that produced it.
2. Establish the timing of the geologic events that have shaped a region, as depicted on a geologic map or cross-section, by applying relative and absolute dating principles.
3. Distinguish the three types of boundaries that separate Earth’s lithosphere plates and explain how the stress at each is related to the deformation, seismicity and volcanism observed there.
4. Sketch a cross-section of Earth’s interior and explain how the contrasting properties of different regions have enabled us to map the planet’s internal structure and link processes there to those occurring at the surface.
5. Recognize common landforms from their depictions on topographic maps and analyze how each is formed through interactions between constructional processes and erosion caused by the movements of water, wind and ice.
6. Analyze whether an observation, experimental result or proposed explanation is consistent with a scientific hypothesis for a natural phenomenon and effectively communicate this analysis to others.

Fall 2015 course schedule

<table>
<thead>
<tr>
<th>Dates</th>
<th>Lesson topic(s)</th>
<th>Reading</th>
<th>Lab Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-Aug—21-Aug</td>
<td>Introduction to Geology and Plate Tectonics</td>
<td>1 &amp; 2</td>
<td>plate boundaries</td>
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<tr>
<td>24-Aug—28-Aug</td>
<td>Minerals and Mineral Resources</td>
<td>3</td>
<td>mineral identification</td>
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<tr>
<td>31-Aug—6-Sep</td>
<td>Igneous Rock and Intrusive Activity</td>
<td>4</td>
<td>igneous rocks</td>
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<tr>
<td>9-Sep—11-Sep</td>
<td>Volcanoes and Volcanic Hazards</td>
<td>5</td>
<td>Shasta Valley field trip</td>
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<td>14-Sep—18-Sep</td>
<td>Weathering and Soils</td>
<td>6</td>
<td>sediment analysis</td>
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<tr>
<td>21-Sep—25-Sep</td>
<td>Sedimentary Rocks and Environments</td>
<td>7</td>
<td>sedimentary rocks</td>
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<tr>
<td>28-Sep—2-Oct</td>
<td>Metamorphism and Metamorphic Rocks</td>
<td>8</td>
<td>metamorphic rocks</td>
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<tr>
<td>5-Oct—7-Oct</td>
<td>Earthquakes and Earth’s Interior</td>
<td>9</td>
<td>Earthquake!</td>
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<tr>
<td>12-Oct—16-Oct</td>
<td>Origin and Evolution of the Ocean Floor</td>
<td>10</td>
<td>seafloor spreading</td>
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<td>19-Oct—23-Oct</td>
<td>Crustal Deformation and Mountain Building</td>
<td>11</td>
<td>folds and faults</td>
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<td>26-Oct—30-Oct</td>
<td>Mass Wasting and the Work of Gravity</td>
<td>13</td>
<td>pace and compass map</td>
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<tr>
<td>2-Nov—6-Nov</td>
<td>Running Water</td>
<td>14</td>
<td>River Flooding</td>
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<td>9-Nov—13-Nov</td>
<td>Groundwater</td>
<td>15</td>
<td>groundwater pollution</td>
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<td>16-Nov—20-Nov</td>
<td>Glaciers and Glaciations</td>
<td>16</td>
<td>Shasta Caverns field trip</td>
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<td>23-Nov—25-Nov</td>
<td>Deserts and Wind</td>
<td>17</td>
<td>topographic maps</td>
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<tr>
<td>30-Nov—4-Dec</td>
<td>Shorelines</td>
<td>18</td>
<td>geologic dating</td>
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<tr>
<td>7-Dec—11-Dec</td>
<td>Geologic Time and Earth’s History</td>
<td>18 &amp; 19</td>
<td>geologic map &amp; section</td>
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<tr>
<td>16-Dec</td>
<td>final exam 1:00-3:00 PM</td>
<td>all</td>
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**Evaluation**
Grades will be based on total scores for:
- Online study questions (40 total points);
- Daily clicker questions (50 total points);
- Online assignments (20 points);
- Three writing assignments (40 total points);
- Two midterm exams (60 total points);
- Comprehensive final exam (60 points);
- Seventeen weekly lab exercises (90 total points).

There will not be any alternate or "extra credit" assignments. The final grade will be computed from the total of 360 points and will be scored as follows: > 90% = A; 80-89% = B; 70-79% = C; 60-69% = D; and < 60% = F. The instructor reserves the right to adjust these percentages if such an adjustment is warranted by the distribution of scores in the class but **under no circumstances will a student who earns <65% or fails to submit any of the writing assignments be assigned a "satisfactory" (A, B, or C) grade.**

In addition to class time, a student should expect to spend about 8 hours per week reviewing their notes and text, answering online study questions, and studying for exams. Completion of the writing and online assignments will require about an additional 12 hours during the course of the semester.

**Attendance, withdrawal, and incomplete policies**
Regular participation and punctual submission of assignments are required for satisfactory completion of this course. Absences will be excused if the student: (1) notifies the instructor by e-mail or phone, (2) schedules a time to make up the missed work before their next class session, and (3) makes up the work as scheduled. If a student incurs four unexcused absences he or she will receive a warning from the instructor; eight unexcused absences will result in the student being dropped from the class. A student may withdraw before 20-Nov-2015 without receiving a grade and is responsible for notifying the admissions office and completing all necessary forms. Arrangements for an incomplete must be made with the instructor and an "I" will be granted only in the case of an unforeseen personal or family emergency.

**Learning Disabilities**
If you have a disability (learning, physical, psychological etc.) that may require classroom or testing accommodations please let the instructor know as soon as possible to ensure these accommodations are implemented in a timely manner. If you have not already done so, please contact Disabled Students Program and Services (DSPS) in Eddy Hall, or call 938-5297, for authorization and coordination of disability verification and accommodation assistance.

**Make-up policy for missed work**
Writing assignments, homework exercises, midterm exams, lab reports, and daily clicker questions may be made-up if: (1) prior arrangements have been made with the instructor; and (2) they are completed before the next class period or before graded exercises are returned to the class (as appropriate). Field trips and the final exam may not be made up.
Late assignment policy
Writing and homework assignments will be penalized 1 point for each class period they are late and will not be accepted after the graded assignments have been returned to the class.

Academic integrity
Students are encouraged to collaborate with one another as they work on their lab exercises and homework assignments, and as they prepare for exams. I expect that a student will work independently, however, when he or she submits exercise results, takes quizzes and the final exam, and writes his or her outlines and abstracts. If I find evidence that any students are not living up to this code of academic integrity (for example, because they submit identical or nearly identical writing assignments) I reserve the right to drop them from the class unless it is after the fourteenth week, in which case the students will receive F grades regardless of accumulated points.