**GEOL 102: Introduction to Geology**
**Winter 2014 Syllabus**

**Instructor:** Scott Johnston

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Office hours: M: 1–2:30PM, T: 12–1PM, W: 1–2:30PM, TR: 3–4PM, or by appt.

**Meeting Times:**

Lectures: T/Th, 8:10–9:30 PM in Bldg 06, Rm 124; Discussion: Bldg 180, Rm 233

**Course Description:**

In Geology 102 you will gain an understanding of, and an appreciation for, the natural world around you. The next time you go to Yosemite, to the beach, or just into your backyard, you will be able to impress your friends by not only naming the rock types, but also describing how they were formed and came to look like they do today. More importantly, our world is constantly changing around us and we need to be able to adapt; this class will teach you the basic principles by which Earth's systems operate, and allow you to participate in conversations regarding our planet from an informed perspective. Specific topics that we will cover include: rocks and minerals, plate tectonics and mountain building, geologic time, the history of life, glacial and fluvial processes, and climate change.

**Lectures:**

Lectures will consist of lecture periods split up by 10-minute small-group projects/activities that will be completed and discussed in class. Activity worksheets will not count toward your class grade, but can be used as study guides, and questions similar to those from small-group activities will reappear on the exams. All lecture materials including PowerPoint slides and homework assignments will be available for download on PolyLearn.

**Discussion sections:**

Discussion sections will provide an opportunity to discuss/review lecture material in a small-class setting, as well as gain hands-on experience working with real minerals, rocks, and geologic problems. On-line quizzes covering concepts developed in the discussion will be required to receive credit for discussion section participation.

**Required text:**

Required: Essentials of Geology by Marshak. Alternate titles (any edition will suffice): Earth: Portrait of a Planet by Marshak, Physical Geology by Plummer, Earth: An Introduction to Physical Geology by Tarbuck and Lutgens , Geology by Chernicoff and Whitney, Essentials of Geology by Chernicoff

Activity workbook (can be purchased at the on-campus Cal Poly bookstore)

**Grading:** grades will be curved based on class averages and standard deviations

Discussion quizzes (on-line quiz due at the end of the quarter) ---------- 10%
Problem set quizzes (on-line quiz due 1 week after assigned) ---------- 10%
First Midterm Exam---------- 20%
Second Midterm Exam ---------- 25%
Final Exam (Cumulative) ---------- 35%

**Extra credit**: Extra credit will be offered in the form of self-guided field trips and write-ups to near-by geologic sites. Completed field-trip write-ups will add 2% to a midterm exam score.

**Exam scheduling:** Make-up exam times for valid scheduling conflicts must be arranged prior to the exam date. I'm not kidding….

**Geology 102: Physical Geology, Cal Poly—Fall 2013**

| **Class Outline** (approximate only!) | Reading Assignment |
|---|---|
| Week 1 (Jan 6–9) | |
| Class logistics, introduction to geology and tectonics | Ch 2 |
| Discussion: class logistics, scientific method | |
| Week 2 (Jan 13–16) | |
| Mineralogy, introduction to rocks | Ch 3, Interlude C |
| Igneous rocks & processes | Ch 4 |
| Discussion: tectonics | |
| Week 3 (Jan 20–23) | |
| **Jan 20: MLK Day; no class!** | |
| **Jan 21: Monday schedule; discussions but no lecture** | |
| Igneous rocks and processes continued | Ch 4, 5 |
| Volcanoes | |
| Discussion: mineralogy | |
| Week 4 (Jan 27–30) | |
| Weathering and erosion | Interlude B |
| Discussion: igneous rocks/review | |
| **Jan 30: First midterm exam** | |
| Week 5 (Feb 3–6) | |
| Sedimentary rocks | Ch 6 |
| Metamorphic rocks and deformation | Ch 7 |
| Discussion: sedimentary rocks | |
| Week 6 (Feb 10–13) | |
| Deformation and structural geology | Ch 9 |
| Mountain building | |
| Discussion: metamorphic rocks and cross sections | |
| Week 7 (Feb 17–20) | |
| **Feb 17: President's Day; no discussions!** | |
| **Feb 19: no discussion** | |
| Earthquakes | Ch 8 |
| Geologic time and the history of life | Ch 10, Interlude E |
| Week 8 (Feb 24–27) | |
| Fluvial processes | Ch 14 |
| **Feb 27: Second midterm exam** | |
| Discussion: earthquakes–geologic time–midterm review | |
| Week 9 (March 3–6) | |
| Mass movement and landslides | Ch 13 |
| Discussion: geomorphology | |
| Week 10 (March 10–13) | |
| Groundwater and ocean processes | Ch 16, Ch 15 |
| Glaciers and climate change | Ch 18 |
| Discussion: climate change | |
| Week 11 (March 17–20) | |
| **Final exam:** Wednesday, March 19, 7:10–10:00 PM | |