Caltech

Ge123: Regional Geology of the Southwestern United States

Course Syllabus – Spring 2020

GPS, California Institute of Technology

Course Instructor

Claire Bucholz
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Office Hours: by appointment

Class Location and Time

Arms 251, TTh 10:30 am – 12 pm

Dates:
Week 1: *March 31 & April 2*
Week 2: *April 7 & April 9*
Week 3: *April 14 & April 16*
Week 4: *April 21 & April 23*
Week 5: *April 28 & April 30*
Week 6: *May 5 & May 7*
Week 7: *May 12 & May 14*
Week 8: *May 19 & May 21*
Week 9: *May 26 & May 28*

Course Format

This course is a lecture-based course on the geologic history of the American Southwest (broadly defined as the southern parts of California, Nevada, Utah, and Colorado, as well as, Arizona, New Mexico). Students are expected to undertake weekly readings of scientific articles relevant to the lecture material and will have weekly quizzes on the reading. A final ~5 page research paper is required. The paper should identify and discuss an outstanding problem in the geology to the American Southwest, based on a literature survey, and present potential avenues forward to addressing the problem.

Course Grading

Grading will be based upon the following assessments:

Weekly quizzes: 40% (of grade)
Final paper: 50% (of grade)
Class participation: 10% (of grade)

Course Material

Week 1: Definition of the “Southwest” + terminology overview
Week 2-3: Paleoproterozoic and Mesoproterozoic cratonal core
Week 4: Meso- to Neoproterozoic sedimentary rocks (Rodinia)
Week 5: Neoproterozoic to Paleozoic sedimentary rocks (Rifting to passive margin)
Week 6: Late Paleozoic orogenies (Pangea)
Week 7: Early Mesozoic – red beds and dinosaurs
Week 8: Cretaceous to Eocene: Orogenies and interior seaway
Week 9: Oligocene to Present