

EPS 103b – Sedimentary Petrology

Professor office hours: Monday 01:00-03:00pm and Friday 11:00am-01:00pm - Geo 4656

TA office hours: To be announced

Class meeting: Tuesday/Thursday 12:30-1:45pm

Lab meeting: Tuesday/Thursday 2pm-5pm

Course summary:

This course covers topics related to sediments, sedimentary rocks, and the information that can be extracted from each. Students will learn to identify the structures and textures common to this rock type and will use their observations to interpret ancient and modern depositional environments. Sedimentary rocks constitute a major fraction of the Earth's surface exposures and understanding these rocks is critical to a well-rounded understanding of Geology.

Field trip:

Exploring geology in the field facilitates practical application of classroom skills. For this course, we will explore sedimentological exposures in the area around Death Valley over a 4-day trip from November 1-4. This is a very important part of this course, so if you have a potential conflict it is important to let the instructor know ASAP. We will be staying in dorms and will be hiking 5-7 miles per day. Topics covered will include lacustrine and evaporite deposition, carbonate structures, sandstones, conglomerates, and more. The field trip activities will constitute a homework assignment

Grading:

Homework	20%
Labs	20%
Midterm	25%
Final	30%
Professionalism ¹	5%

[A = 90-100%; B = 80-89%; C = 70-79%; etc., X+ = >#7%; X- = <#2%]

Open door policy/office hours:

Instructor office hours are listed at the top of the page. During this time I will be in my office and welcome students to drop by with questions about the course, geology in general, grad school, etc. In addition I have an open door policy and students are always welcome to drop by my office. Generally when I am physically there I leave the door open, and when I am not there, the door is metaphorically open (but email is the easiest way to find me).

¹ Professionalism includes how you deport yourself as a collaborator with other students, in the field, and when faced with difficulties. As a student you are rarely given feedback on this, but in this course a small portion of your grade depends on your conducting yourself appropriately for your level of study.

Homework:

Homeworks will be released on Tuesdays and due the following Tuesday unless otherwise noted.

Labs:

There are two lab periods during the week. Labs will be released on Tuesday and due the following Tuesday unless otherwise noted. Students are welcome to work on labs outside of class time, but should be conscientious of the other class taught in this room. Some labs may require more time than the scheduled lab time to complete. Talk to your TA about after hours access. The TA will be primarily responsible for supervising and grading the lab portion of this class.

Late policy:

Life happens. Please let the instructor/TA know as soon as possible if your work will be late for some reason. If advance notice is impossible, a 1-day grace period may be exercised without question once per term without a grade deduction. It is your responsibility to get the work to the professor/TA. After this, 10% per day will be deducted from the graded score of the work. No late will be accepted after 1 week.

Text book:

Many sedimentology texts cover the materials in this course. Recommended readings will be from “Principles of Sedimentology and Stratigraphy” by Sam Boggs Jr. There is very little variation edition-to-edition so any is fine.

Honor code:

The university honor code (student conduct code) can be found in its entirety here: <https://www.deanofstudents.ucla.edu/Individual-Student-Code>. Collaboration is encouraged in science and in this class, however there is a difference between healthy, collaborative, sharing of ideas and copying someone else’s work. Conceivably whether or not something is allowable may be difficult to determine, so when in doubt just ask! As a general rule, collaboration is always allowed except for during tests.

Accommodation:

Students needing academic accommodations based on a disability should contact the Center for Accessible Education (CAE) at (310)825-1501 or in person at Murphy Hall A255. In order to ensure accommodations, students need to contact the CAE within the first two weeks of the term.

Schedule for the term:

Week 0 – Class on 9/27

Topic: Introduction to sedimentary materials and their formation

Lab 0: Intro to sedimentary rock forming minerals and textural terminology

HW0: Drop by introductions

Week 1 – Class on 10/02 & 10/04

[subject to change]

Topic: Clastic sedimentary rock classification and structures
Lab 1: Clastic sedimentary rocks and some structures
HW 1: Weathering and erosion

Week 2 – Class on 10/09 & 10/11

Topic: Chemical sedimentary rock classification
Lab 2: Sedimentary structures continued
HW 2: Sedimentary structures analysis

Week 3 – Class on 10/16 & 10/18

Topic: Sediment transport
Lab 3: Chemical sedimentary rocks
HW 3: Sediment transport problems

Week 4 – Class on 10/23 & 10/25

Topic: Diagenesis
Lab 4: Petrography of clastic sedimentary rocks
No homework this week

Week 5 – Class on 10/30 & 11/01

MIDTERM EXAM (10/30 during regular class time)
FIELD TRIP (see above)
HW 4: Field guide section write up

Week 6 – Class on 11/06 & 11/08

Topic: Oil and gas exploration and extraction
Lab 5: Petrography of chemical sedimentary rocks
HW 5: Oil and gas

Week 7 – Class on 11/13 & 11/15

Topic: Depositional environments (glaciers, deltas, rivers, etc)
Lab 6: Map analysis
HW 6: Sedimentary processes and boundary conditions

Week 8 – No class this week, makeup class to be scheduled, pizza will be provided
(Thanksgiving)

Week 9 – Class on 11/27 & 11/29

Topic: Gravity flows, deep-water marine, Bouma sequence
Lab 7: More sedimentary rocks
HW 7: UCLA campus sedimentary rock walk (mini homework)

Week 10 – Class on 12/04 & 12/06

Topic: [margin for uncovered topics]
Lab 8: Planetary surfaces
FINAL EXAM (12/06 in class) (Finals week 12/10-12/14 is also AGU – no class)

[subject to change]