

GEOL 430, STRATIGRAPHY and SEDIMENTOLOGY – spring 2015

Professor: Dr. **Alessandro Grippo**, Ph.D.

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Class Hours: **Tuesday 8:50 – 12:10**, BIOS 126

Lab Hours: **Thursday 8:50 – 11:20**, BIOS 126

Office Hours: **Tuesday and Thursday 8:00 – 8:50 or by appointment**, BIOS 110

Final Exam: **Tuesday, June 9, 2015, 8:50 – 11:20**, BIOS 126

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Course objectives

This class will introduce students to the principles of stratigraphy and sedimentology. Through labs, assigned readings, field trips, and field trip reports, students will learn to reconstruct ancient environments, interpret depositional processes, and identify fundamental stratigraphic relationships.

Required Textbook

Textbook: Prothero D.R. and Schwab, F., 2015, Sedimentary Geology. An Introduction to Sedimentary Rocks and Stratigraphy, , 3rd edition, W. H. Freeman and Company, New York
Supplementary readings may be assigned.

Required Materials

Lecture and Lab: students should always have a notebook, pens, a mechanical pencil, an eraser, a combined metric and standard English ruler, colored pencils, a protractor, a lab notebook, millimeter paper, a geologist's hammer, a 10x hand lens, a sturdy filed notebook. If additional material will be necessary, it will be announced in class.

Field Trips:

Mechanical pencil (0.5mm)

Red and black lead for mechanical pencil

Color Pencils

Marking Pen--e.g. Sharpie

Ink Pen

Pen for inking map--e.g. rapidograph (00-1)

Ruler--metric and standard for field

Protractor

Brunton Compass

Hammer

Pouch for carrying pencils

Field notebook

Day pack for carrying gear and samples

Hand lens (10x)

Belt for carrying Brunton and hammer

Water bottle

Bug Spray

Acid bottle

Grooming gear

Tables

Chairs

Dishes, pots, pans, detergent, sponge

Breakfast, Lunch, Dinner; Drinks (water, sodas, etc)

Sturdy Field boots

Tape measure

Map Case

Tent

Sleeping bag

Cooking utensils

Water bottle(s)

Tarp for tent

Mat for sleeping bag

Wood for fire

Ice chest for food/drinks

Flashlight

knife

Toilet paper

Sun Screen

Chap stick

Lamps

Water

Stove, grill, charcoal?

Methods of Presentation

Lecture will cover materials that students can find in the textbook in use, materials that are available online and, when appropriate, materials that are related to the topic and appear in contemporary scientific literature. Integration between these components is maximized when students are involved in the life and activities of the class. Students are strongly encouraged to take notes.

Academic integrity and policies

The academic honesty policy of California State University Los Angeles will be strictly enforced.

Grading System

Your performance on lecture exams and assignments is worth 45% of your total grade as is your performance on lab exercises and assignments. The points scored in the lecture portion of the class will be combined and a percent of the total possible lecture points calculated. A percent of total points will be calculated in a similar fashion for the lab portion of the class. Lab exercises will often be tied to field activity and will include maps, a stratigraphic, unit descriptions, structure sections, facies and a final report (which will include all of the previous). I will hand out lab exercises independent of your project assignments. Three non-cumulative exams and a final cumulative exam are scheduled. The lecture exams will consist of mostly short essay, some definitions, true/false, multiple choice, and 'fill-in-the-blank' questions. The material covered will be from your own readings, my lectures, and field trips.

- Exams and Field Trip Absence: if you miss an exam, its maximum score will be deducted from your class grade. As a policy, there will not be make-up exams unless there is a medical, legal or religious reason; in either case you will need a doctor/police/court/religious authority note. Missing a field trip will require an additional 10 page research paper on a topic selected by the instructor and will be due two weeks from the date of the field trip.

Homework / Home Assignments – As a general rule, there will be no homework; exceptions could be made in order to strengthen certain skills or reinforce a few concepts. The relative score will be integrated in the quizzes score. In that case, homework must be typewritten and should be turned in at due time, no exceptions. Late homework will be accepted only as a partial fulfillment of class requirements but WILL NOT be counted towards the final grade. E-mailed assignments will NOT be accepted. Again, if you miss any assignment, its score will be subtracted from your grade.

Attendance and Participation - Attendance is mandatory, and constitutes **10% of the final grade**. A&P does not mean only attending class regularly and on time but rather constitutes a general assessment of your effort and participation in the classroom. Every student starts with a pool of 100 points from A&P and absences would imply points will be subtracted from this pool. So, unexcused absences and late arrivals (when allowed) will result in grade reduction! The same goes if you leave class before the scheduled time: you will only be counted present for a fraction of time and points will be subtracted from the A&P pool. Eating and drinking are not allowed, and cellular phones, or any other kind of electronic device must be turned OFF during class. If you are seen texting, instant messaging, or performing ANY other activity on an electronic device, it means you are not participating to the class and possibly disturbing your fellow students and disrupting the class. In that case, points will be taken off from your A&P pool. You cannot tape or record any segment of a class, lab, or video, nor take pictures or videos at any time. Disruptive behavior will not be tolerated.

Field Trips – Tentatively, there will be two field trips. Field trips are mandatory and activity will be factored in with the labs. Time spent on field trips will be deducted from our lab time.

University policy allows a grade of incomplete to be given only to those who have been sick, injured, or have a similar valid excuse. Incompletes will not be given after poor performance in the course. If you are repeating any

Other policies – If you are repeating any Cal State L.A. course in order to remove a D or an F from your transcript, you must file an *academic renewal petition* in Administration 101 no later than the last day to add a class. Instructions for doing this may be found under "*Academic Renewal*" in your Schedule of Classes.

Method of Evaluation - The final score is out of 1000 pts. (from assignments, exams, labs, A&P)

| | |
|---|-------------------|
| Three exams will count for 10% and the final for 15% of the final grade | 450 points |
| Lab assignments will count for 45% of the final grade | 450 points |
| A&P is worth 10% of the final grade | <u>100 points</u> |
| | 1000 points |

Grading scale:

| | |
|-----------------------------------|----------------------------------|
| FINAL GRADE: A: 910 - 1000 points | SINGLE EXAMS: A: 91 - 100 points |
| B: 800 - 909 points | B: 80 - 90 points |
| C: 690 - 799 points | C: 69 - 79 points |
| D: 580 - 689 points | D: 58 - 68 points |
| F: 579 points or less | F: 57 or less |

Make up exams, quizzes and homework

As a policy, there will not be make-up exams or labs unless there is a medical or legal reason; in all cases, a note from a doctor, a hospital, a court, or the police is required. The same goes if you know that you will be missing a class for a religious holiday: it is YOUR responsibility to let me know as soon as possible. Please, do not abuse these possibilities. In case you need to take a make-up test, the test will be in a different format, and will consist in a series of short essay questions.

Tips on how to succeed in this class

1. The first and most important point is: if you do not understand something, ask questions, ask me to repeat. You are here to learn and the professor is there to help you in this process.
2. If you want to socialize, sleep, read books, surf the net: **do it outside**. Time spent in class is used to learn about the subject. If you disrupt the class by talking, sleeping, text-messaging, arriving late or leaving early, you would be disturbing your fellow students and the linearity of the class, and that is unacceptable behavior.
3. Do not use class time to study or prepare for other classes. You will get points off after the first warning. Also, class time should be spent taking notes from the current lecture and NOT copying notes taken by a fellow student during my previous lecture. Use the bookstore's low-cost service to make copies of notes.
4. Give yourself adequate study time per week for each one unit of a course. Review notes as soon as possible after lecture in order to finish incomplete diagrams and sentences while you still remember what they mean.
5. If you are having difficulties with the course, ask me for help or advice early in the semester. Do not coast through most of the course and then, with a week or two remaining in the term, ask me what you can do to improve your grade. I strongly urge you to seek help if your first exam grade indicates you are doing poorly.
6. An ethical note: looking at a fellow student's paper during an exam is cheating; using crib notes is cheating. Consequences of cheating will be an automatic "F" and a report filed with the school.
7. No eating or reading during class. No listening to headsets or web surfing of any sort. Stay alert.
8. Be sure your cell phone or pager alert tone or any electronic device is OFF during class.

9. Do not be late to class. Arriving after class has started is disturbing both to me and to other students.
10. Coming to class is essential for passing the class. Historically, those who cut class, fail the class.

Biographical Sketch of Alessandro Grippo, Ph. D.

Dr. Grippo has been teaching since 2001, while still a graduate student at the University of Southern California, where he obtained his Ph.D. with an experimental thesis in stratigraphy. He has previously taught general education courses in Physical Geology, Oceanography, Environmental Geology, Earth History/Historical Geology and Field Geology; senior level and graduate classes in Sedimentology, Stratigraphy, and Field Geology; and an advanced, 500-level seminar in Stratigraphy, all at different colleges in the greater Los Angeles area. He has presented his work at international meetings in the US, UK, Italy, France and Canada. His research interests as a scientist include stratigraphy and sedimentology, oceanography, geomorphology, regional geology and global and climate change. In particular he is doing research on how to extract and process information about environmental change and ancient climates from the sedimentary rock record. Between his M.S and his Ph. D. he has been working in the oil industry as exploration and well-site geologist. In 2011 he worked as a Faculty Fellow at NASA-JPL.

Tentative schedule of lessons

(if necessary, variations will be detailed in class)

| Wk. (wk. of) | Topic | Book Chapters | Exams/Quizzes |
|--------------------|--|---------------|---------------------------------|
| 1 March 31 | <i>no class: Cesar Chavez Day</i> | | |
| April 2 | Intro, history, base concepts review <i>assignment: students review chapters 1, 2, 3, 4</i> | | |
| 2 April 7 | Carbonate rocks and environments <i>assignment: students review chapter 5, sandstones and conglomerates</i> | 11, 12 | |
| April 9 | Lab: stratigraphic column | | |
| 3 April 14 | Lithostratigraphy <i>assignment: students review chapter 6, mudrocks</i> | 15 | <u>Exam 1 (ch. 1-5, 11-12)</u> |
| April 16-18 | FIELD TRIP (leaving at 9:00a from Cal State LA) | | |
| 4 April 21 | Biostratigraphy <i>assignment: students review chapter 7, siliciclastic diagenesis</i> | 16 | |
| April 23 | Lab | | |
| 5 April 28 | Geoph. & Chemostratigraphical Corr. <i>assignment: students review chapters 13, 14</i> | 17 | |
| April 30 | Lab | | |
| 6 May 5 | Geochronology and Chronostrat. | 18 | <u>Exam 2 (6, 7, 13-15)</u> |
| May 7-9 | FIELD TRIP (leaving at 9:00a from Cal State LA) | | |
| 7 May 12 | Sedimentary Rocks in Space and Time | 19 | |
| May 14 | Lab | | |
| 8 May 19 | Terrestrial Environments | 8 | |
| May 21 | Lab | | |
| 9 May 26 | Coastal Environments | 9 | |
| May 28-30 | Lab (or possible FIELD TRIP to Nevada) | | |
| 10 June 2 | Clastic Marine and Pelagic Environments | 10 | <u>Exam 3 (ch. 8-10, 16-19)</u> |
| June 4 | Lab: Finalize Report | | |
| 11 June 9 | EXAM 2 | | |
| June 11 | no class | | |

CUMULATIVE FINAL EXAM