

Tentative Syllabus
Geology 301 – Physical Geology Lab
Class Number 14936
SYLLABUS, Spring 2018



Instructor: Arthur Reed
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Office Hour: Tuesdays 4:25pm – 5:25pm in room EGA 108, Elk Grove Center

Catalog Description:

This course is a laboratory study of the basic principles of geology and their applications to everyday life. It encompasses the study and identification of common rocks and minerals, interpretation and recognition of geologic structures and landforms, interpretation of maps, aerial photographs, remote sensing images, seismic information, and analysis of geologic hazards. Field trips may be required.

Units:

This course is worth **one** unit, and is transferable to UC/CSU (see your academic counselor for possible limitations).

Pre-/Co-requisite:

Geology 300, Physical Geology Lecture, is a required pre-requisite or co-requisite. The ideal arrangement is to take Geology 301 in the same semester with Geology 300.

Expected Learning Outcomes:

Upon completion of this course, the student should be able to:

- identify and classify minerals by their physical properties,
- evaluate rock samples and differentiate between igneous, sedimentary, and metamorphic rocks,
- appraise major types of aerial photographs, remote sensing imagery, and topographic and geologic maps and interpret geologic information from them,
- interpret ancient geologic, geographic, and environmental settings by using sedimentary rocks,
- formulate views of Earth's interior based on analyzing seismic information,
- and explain major Earth features to demonstrate understanding of plate tectonic processes.

Class Time & Room:

Tuesdays, 12:00pm-2:50pm in room SCI 109. The lab final is scheduled for Tuesday May 15, 2018 at 12:45pm – 2:45pm. (check CRC school website for any changes)

Required Texts:

Laboratory Manual in Physical Geology, Richard Busch, editor, 10th edition.

It is important that you read the assigned sections **before** coming to lab.

Teaching style:

Interactive lecture that may include videos, overhead transparencies, slides, computer animations, maps, and yes...I occasionally call on students in class. Your questions are normally welcome throughout the lecture. I believe strongly that hard work is the single most important ingredient for doing well in college.

Course Website:

Course schedule and routine course-related information is available at: www.geology301.net

Field Trip: (There is no formal or required field trip planned for this course at this time.)

Homework Assignments (Pre-Lab assignments due before each lab):

Prior to each lab, a set of 'Pre-lab' questions must be completed beforehand, and turned-in at the start of the lab. The 'Pre-lab' questions are available on the class site. A reminder can be found on the Geology 301 schedule, and the assigned questions can be found by going to the Geology 301 home page (go to www.geology301.net and follow the links). Pre-lab questions are designed to encourage reviewing lab materials before the start of a lab. As such, **no credit will be given for pre-lab answers turned-in after the start of a lab.**

Quizzes:

There will be three quizzes (dates to be announced), and a final exam on Tuesday May 15, 2018 at 12:45pm – 2:45pm (check [CRC school website](http://www.geology301.net) for any changes).

Grades and Grading: Grading will be based approximately on the following scheme:

Lab Quizzes: 50% of your grade (lowest quiz score dropped)
Lab Attendance & Completion: 30% of your grade (lowest lab score dropped)

Other assignments 20% of your grade
Grades will be calculated on the following scales (minor adjustment may become necessary):
90-100% A, 80-89% B, 70-79% C, 60-69% D, <60% F

Expectations:

You are expected to read at a level (college level) that will allow you to understand the concepts presented in your textbook. You are also expected to attend every lab (unless you notify me before start of lab that you have an emergency situation), and keep up with the reading assignments and materials in the textbook, **bring your laboratory manual to lab**...assigned questions will be completed, removed from lab manual, and turned-in at end of lab. Bring materials to take notes, and take appropriate measures to study in a way that allows you to understand the course concepts and perform well on the assignments and tests.

You may expect this class to require, on average, about 3 hours of outside study per week for each unit of credit for the average student to receive an average grade (C or B). If you feel the need to improve your study skills, please consult your academic counselor.

Makeup policy:

No makeup exams, quizzes or labs will be available unless approval was requested and received before exam/quiz/lab due date. Extra credit opportunities may be announced in class and may be listed on the course website.

Grade Discrepancies:

If you feel that I have made a mistake in calculating your grade, please see me or email me immediately. Please save your tests, homework, and lab work if you wish to bring a grade discrepancy to my attention.

Lab Logistics: Lab work is a combination of lab manual exercises, downloaded printouts and/or handouts, additional homework assignments, plus several short lab quizzes, ~~plus a mandatory field trip~~. All labs are to be completed in class unless shown otherwise on the lab schedule. **THERE ARE NO MAKE-UP LABS**, but I will automatically drop one missed lab. Lab assignments are due by the end of the lab session. If you need to miss more than one lab (e.g., for medical or unavoidable personal reasons, such as a sick child), you need to contact me ASAP to discuss an excused lab. Assigned problems for each lab will be given at the beginning of lab. *All labs must be completed on the lab manual answer sheets, or on COLOR copies of them.* After completing your lab, you will bring it to me and I will look it over and check it off for completeness/attendance. At that point I will give you an answer key, so you can self-check and correct any errors. You will then turn-in a fully corrected lab. I may change the lab schedule without notice based on current events, our lecture schedule, or if I find something more exciting for us to do. I'll make every attempt to give you advance notice if I need to change the lab schedule. I encourage you to work together on labs, but *every lab must be done and turned-in separately, and consist of your own work, in your own words.*

Dropping: If you decide to drop the class, remember to drop the class from your schedule before the published drop deadline.

Academic Dishonesty (*Cheating*):

You are expected to turn in your own work. You are to take all exams based on what you remember from studying (**no** notes, textbooks, or anything else will be available). Anyone caught cheating may face one or more of the following penalties: no grade for the assignment, an "F" for the course, probation or suspension from the college.

Academic Dishonesty: Academic dishonesty is considered a serious offense at CRC. Students caught cheating will face an administrative sanction which may include suspension or expulsion from the college. It is in your best interest to maintain your academic integrity.

Note: Students with special needs should contact me as soon as possible outside of class.

Attendance and Lab Rules:

- In order to do well in this class, you should attend all labs/lectures. Attendance may be taken in class and the record of attendance may be used to resolve borderline grades. Occasionally extra credit may be earned on in-class work; this extra credit would therefore only be available to those attending that class session.
- Please arrive on time. If you are late, please enter quietly and take a seat near the door to minimize disruption to the class.
- If you need to leave class early (i.e. for an appointment), please let me know beforehand and take a seat near the door.
- **End all private conversations once class begins.**
- Please do not eat food during class.
- If you decide to drop the class, it is your responsibility to take necessary steps following the school's procedures, or risk receiving an 'F'
- Please turn your cell phones **OFF** while in class. If you are expecting an important call that you must answer, please inform me before the beginning of class and leave your phone on silent mode.

Geology 301, Learning Outcomes and Objectives

Upon completion of this course, the student will be able to:

- **SLO#1: Apply the Scientific Method to evaluating Earth science processes.**
 - Note how the scientific method is followed in various experiments.
 - Evaluate a data set with conscious reference to the scientific method.
- **SLO#2: Examine Earth's interior and solid surface compositions.**
 - Identify rock and minerals specimens in hand samples to determine their geologic origin.
 - Deduce the properties and compositions of Earth's interior layers based on various types of evidence observed at Earth's surface.
 - Interpret the geologic processes which produce specific rock types.
- **SLO#3: Apply plate tectonic theory to formulate geologic settings for physical processes.**
 - Discuss how earthquakes are connected to tectonic settings.
 - Calculate rates of plate motion and sea floor spreading.
 - Distinguish between different plate boundaries and the rock types produced by tectonic processes.
 - Compare and contrast the rate of seafloor spreading and explain the physiographic features produced.
 - Evaluate the effect of hot spots on continent and ocean-floor evolution.
- **SLO#4: Evaluate temporal and spatial dimensions in which Earth history is explored.**
 - Assess the time-event sequence on a geologic column by utilize both relative and absolute time.
 - Assemble a geologic map and evaluation the relative and absolute time sequencing.
- **SLO#5: Assess the impact of earthquake activity at a human scale.**
 - Calculate and model the speed of P and S waves to derive an earthquake's epicenter.
 - Analyze the factors that cause earthquake destruction and how serious damage can be avoided.
- **SLO#6: Confirm the effects of surface geologic processes on terrain landscape.**
 - Construct and interpret topographic maps and compute gradient from them.
 - Inspect and evaluate aerial/satellite photos and determine the geologic structures present.
 - Recognize, describe, and illustrate groundwater processes and the formation of karst topography.
 - Illustrate, examine, and interpret erosional and depositional features produced by stream, glacial, and wind processes.