

## Geology 101L: Structural Geology Lab Winter 2019 Syllabus

### COURSE INFORMATION

**INSTRUCTOR:** Michael Oskin                      meoskin@ucdavis.edu                      3123 EPS

**TAs:** Elaine Young                      ekyoung@ucdavis.edu                      2240 EPS  
Dylan Vasey                      dyvasey@ucdavis.edu                      2240 EPS  
Yiran Wang                      yrwwang@ucdavis.edu                      2236 EPS

**MEETING TIME AND PLACE:** Section 001: Monday-Wednesday 1:10 - 4:00pm in EPS 1316\*  
Section 002: Tuesday-Thursday 1:10 - 4:00pm in EPS 1316\*  
Section 003: Tuesday-Thursday 4:10 – 7:00 pm in EPS 1316\*  
*\*unless otherwise noted on the schedule*

**OFFICE HOURS:** Michael Oskin:                      10:30-11am Tu/Th, 10-11am W, 3-4pm Fri in 3123 EPS  
Elaine Young:                      M 10-11 & W 11-12 in 2240 EPS  
Dylan Vasey:                      T 1-2pm & F 12-1 in 2240 EPS  
Yiran Wang:                      W 2-3pm & F 10-11am in 2236 EPS

*If possible, please visit the TA who teaches your lab section. Remember that your TAs are students too and have their own work to complete. You are expected to respect their posted office hours and email inboxes, because they are under no obligation to help you outside of class and their office hours. It is preferred to answer questions during office hours and not by email. Please limit questions in email to urgent matters and understand that responses may not be immediate. Appointments will be accepted for students who have conflicts with scheduled office hours or wish to discuss their work in private.*

### **COURSE DESCRIPTION:**

The goals of this course are to introduce you to the techniques of interpreting geologic structures both on geologic maps and in the field, and to introduce you to tectonic analysis of geologic data. Understanding of geologic structures requires training and practice in three-dimensional visualization and analysis, and developing that ability is probably the most challenging part of this course. Most of the problems and exercises you will do involve some challenge in three-dimensional visualization, whether they involve working with map data or actually mapping structures in the field on a topographic map.

Another important component of this course is scientific writing. Over the span of ten weeks you will produce a geologic report on the Black Diamond field site. A draft version of this report, with your inked and colored map, cross-section, and a structure-contour map, is due February 22 in lab assignment drop box (5pm). This draft report will be edited and returned to you. A final report with response to the edits given to you on the draft, and including a GIS-drafted geologic map, final cross section (hand- or computer-drafted), and final structure-contour map is due on Friday, March 15 at 5pm in the drop box and Canvas (report text).

**PREREQUISITES:**

The course work requires that you have completed Geology 50L or an equivalent laboratory in physical geology, and that you have taken, or are taking concurrently, Geology 101.

**FIELD WORK:**

The field work in this course will involve rigorous cross-country walking in fairly steep terrain and likely in inclement weather (e.g. cold, rain). By enrolling in this course, you are tacitly affirming that you are in adequate physical condition and have no physical disabilities that could prevent you from getting around in the field. If this is not the case, you must consult with the instructor. Students who have certified learning disabilities must also consult with the instructor before the field trips begin. Because of the nature and location of the field exercises, it is impossible to provide additional supervised field time, and any necessary accommodation will have to be agreed upon in advance. Participants in the course may be exposed to hazards on the field trips that are not usually associated with city life, but that are an inevitable part of field work. By enrolling in this course, you are agreeing to undertake these risks, to conduct yourself in a prudent manner, and not to hold landowners who have given us permission to use their land, or the university or its agents, responsible for injury or illness. These risks include, but are not limited to: risk of physical injury from walking in rough and steep terrain, risks from physical exertion, risks from exposure to inclement weather, and the risk of exposure to wildlife.

**FIELD EXERCISES (MANDATORY)****TRIP #1: BLACK DIAMOND PROJECT- JANUARY 26-27 (WEATHER ALTERNATE FEBRUARY 2-3)****TRIP #2: AUBURN DAM SITE- SUNDAY FEBRUARY 24**

- \* You must submit a class waiver form prior to attending the first field trip.
- \* **Absolutely no alcohol/drugs or weaponry are allowed on the field trip.**
- \* At the end of the field trip you must hand in your notebook and maps. Make sure your writing is legible, and your notes are organized.

**ACADEMIC POLICY:**

You are expected to turn in your own work. Everything you need to finish the labs will be provided for you. The Black Diamond report will include a bibliography of sources you need to cite within your report text. Your report text must be turned in electronically on Canvas, in addition to handing in a hard copy. The content of your report will be checked for plagiarism against other reports from this and previous years.

Further information can be found at <https://supportjudicialaffairs.sf.ucdavis.edu/code-academic-conduct>. Anyone found submitting anything but his or her own original work will be referred to Student Judicial Affairs.

## CLASS SUPPLIES:

### Books:

- **REQUIRED: Structural Geology** by R. Twiss and E. Moores, 1<sup>st</sup> or 2<sup>nd</sup> Edition

### LAB

Paper to take notes and work problems  
Ruler or engineer's scale, with metric units  
Protractor (6"/ 15cm protractor ruler ideal)  
Colored pencils (REQUIRED)  
Tracing paper (8"x11" for stereonet)  
Erasers (you'll use these a lot)  
Mechanical pencils (0.5 mm, 2H or harder)  
Tape, stapler, etc.  
Calculator  
Drafting pens (Micron 005 or 01)  
8.5"x11" cardboard sheet for stereonet

### FIELDWORK

Field backpack  
5"x8" *Rite-in-the-Rain* field book  
0.3 or 0.5 mm mechanical pencil and lead  
Fine-tipped eraser  
Hand lens  
Ruler and protractor  
Map board with clear plastic cover  
Hiking boots and socks  
Hat, sunglasses, sunscreen  
Basic First Aid kit\*  
2-3 L of water and container  
Appropriate field clothing†

\*Basic 1<sup>st</sup> aid kit: Ibuprofen, Ace bandage, Antihistamine, band aids, mole skin, Neosporin, Epi-pen if you are allergic to bee stings, any vital prescription medications you may need.

†Appropriate field clothing: (pants/ gaiters, base/ weather layers, including rain gear)

## ASSIGNMENTS:

- Lab assignments will be posted to Canvas
- Assignments are due one week from the lab period they are assigned, unless otherwise noted on the schedule. Labs are due **AT THE BEGINNING OF CLASS** on the due date.
- It is recommended that you turn in your work on the due date. **Late work will be accepted, however, but will be penalized 1 full letter grade per day late.** If you are turning in late work, it **must be turned in to the GEL 101L drop box by 5pm**, and you **must email the TA** to let them know that you are submitting a late assignment.
- All written answers must be typed or handwritten so that they are legible.
- All hand drawn figures must be neat and organized. You will be graded on neatness!
- We strongly encourage you to work together to complete the labs, but all work that is handed in must be your own! Refer to the Academic Policy below.

## GRADING:

Your grade will be determined on a 15% per full letter grade scale, weighted as follows:

<b>Lab Assignments (1-13):</b>	<b>65%</b>	5% per individual assignment
<b>Black Diamond Project:</b>	<b>30%</b>	15% for draft due February 22 15% for final due March 15
<b>Auburn Dam Site Project:</b>	<b>5%</b>	