

## Geology 129

### *Field Studies of Marin East of the San Andreas Fault*

*Catalog: Marin County is blessed with an extraordinary geology. This course focuses on the area east of the San Andreas Fault. The course meets for a total of 40 hours at geologically unique locations chosen to illustrate the geological features and geological history of this portion of the county through field lecture, direct observation and geological exercises.*

**Recommended Text:** Doris Sloan, *Geology of the San Francisco Bay Region*, 0520241266

#### **Possible Meeting Dates:**

Sun 29 Aug, Sat 4 Sep, Sun 5 Sep, Sat 18 Sep, Sun 19 Sep, Sat 9 Oct, Sun 10 Oct,  
Sat 16 Oct, Sun 17 Oct, Sat 6 Nov, Sun 7 Nov, Sat 13 Nov, Sun 14 Nov,  
Sat 20 Nov, Sun 21 Nov (thx), Sat 4 Dec, Sun 5 Dec

#### **Meeting Schedule:**

*(these locations may change, depending upon possible future closures of state parks)*

	date selected	Location
1		Ring Mountain
2		Marin Headlands
3		Coastline area, Salt Pt.
4		Angel Island
5		Mt. Burdell

We will meet at the classroom at 9 am, then caravan to each stop from there, returning to campus before 5 pm. If you can't make it to a particular meeting, please let me know ahead of time so we won't be waiting too long for you. You can email or text me at (510) 219-2103.

#### **Topics for each meeting:**

Select one of these for your presentation; you should make a 1-page handout to give to the class. For your topic, explain what the term means, how it occurs, where it is formed, etc.

##### 1. Ring Mountain

- what is metamorphism? how/where does it occur?
- what are the different types of metamorphic rock?
- what is a terrane?

- what is subduction, and where is it occurring in the present world?
- what is blueschist?

## 2. Marin Headlands

- what is chert?
- what are radioarians and where do we find them?
- what is pillow basalt?
- headland erosion processes (wave refraction)

## 3. Salt Point

- shoreline erosional features (stacks, headlands, arches, tombolos)
- what is sedimentary rock?
- what is tafoni (honeycomb weathering)

## 4. Angel Island

- what is serpentinite?

## 5. Mt. Burdell

- what are the different types of lava?
- what are the different types of tuff?

### **Grading:**

- Attendance

5 meetings @ 10 pts = 50%

- Presentations

I want you to make a brief presentation in the field about one of the topics from the list above.  
1 pres = 10%

- Reports

I find writing a post-trip report on what was seen at each of the stops, and what these observations meant, really helps students synthesize the field observations and understand the broader context. Basically, I want you to summarize what we saw at each stop in a 2-3 page report. You might wish to take photos during the trip and drop them into your report. Please email this to me within 1 week after the trip.

5 reports @ 8 pts = 40%

### **Contacting Me:**

The best way to get ahold of me is [geology.prof@yahoo.com](mailto:geology.prof@yahoo.com). Don't forget the "." between geology and prof. I don't have an office/phone here at CoM, so please use this email exclusively.

**Website:**

We'll use this website to communicate some materials <http://www.blackquartz.com/geology.html>  
Please check this before trips to see if I've posted any updates, links, and so on.

**Things to Bring to Each Trip:**

## 1. Clipboard

You'll use this to fill out the trip guide as we go along.

## 2. Water

There will be water refill opportunities at some locations, but not all.

## 3. Comfortable footwear.

Some spots will have a bit of hiking.

## 4. A full tank of gas for your car.

We may be a bit removed from gas stations at some of the stops, so prepare ahead of time.

## 5. A variety of clothes.

Bring layers that can be added or removed as the weather changes throughout the day. Even if it starts off sunny, when the afternoon fog rolls in and drops the temperature 30 degrees you'll be thankful for the jacket you brought. :)

## 6. Lunch.

You should plan on bringing a lunch each time.

**Safety:**

## 1. Hiking

Most of the trails will be well-maintained; however you should exercise caution when we're on the rougher trails

## 2. Sunscreen

Make sure to apply sunscreen at least an hour before you actually get out in the sun, as most brands take that long to start working.

## 3. Traffic

Many of our stops will be on roadcuts on the side of the road. Please exercise caution in crossing roads and staying out of traffic. Please keep in mind that bicycles are common in Marin, you cannot hear them coming, and they cannot stop as abruptly as cars.

## 4. Bugs Some areas will have insects and ticks.

## 5. Poison oak

We will encounter poison oak. I recommend buying Tech-Nu gel to run on your hands, and to use with laundry detergent with heavily-exposed clothes.