

Geology 186: Geology of the Eastern Sierra Nevada and the Long Valley Caldera.



What is it about? The eastern flank of the Sierra Nevada is one of the most spectacular and significant geologic sites in the entire western hemisphere. The combination of granite plutons, ancient metamorphic rocks, and modern glacial sediments and volcanic rocks make it a marvelous laboratory for studying earth materials. Active volcanoes and faults bring alive the study of structural geology of the dynamic earth.

There will be several long driving days, and conditions may become harsh, with rain, snow and wind as serious possibilities. The success of the trip will depend on your amiability and willingness to put up with inclement conditions.

Dates: Leave Tuesday May 31 at 8:00 am from north side of the Science Community Center on MJC's west campus.

Return Friday June 3 at about 7:00 pm.

There will be three meetings prior to the trip, and one afterwards (zoom alternative will be available; see below)

Cost: The department is covering the cost of accommodations and transportation (this is not the usual case)! The only cost is that of the tuition and related fees. You will be responsible for your food and on-the-road purchases.

Texts and Resources: All course materials and assignments will be provided via **Canvas**, except for those on the trip itself. **Note:** there is no phone or internet service available in camp.

Academic Requirements:

BEFORE THE TRIP:

- There will be three class sessions prior to the trip, on Tuesday evenings beginning May 10 at 7 pm. They will be held as zoom sessions, but I will do the first class from Science Community Center, room 326 on May 10 if you would like to meet in person. The zoom address for all classes will be: <https://cccconfer.zoom.us/j/99193690726>. The pass code is 'Hayes'.

- Pre-trip projects will be assigned through the Canvas pages for the class.

DURING THE TRIP:

- You will be expected to take complete lecture notes at each stop along the trip.
- There will be several special group assignments during the trip.
- You will complete the worksheet provided at the beginning of the trip.

AFTER THE TRIP:

- Notes and worksheets from the field trip are to be submitted by Tuesday, June 14. They can be submitted as paper copies or as scanned copies (or possibly submitted through canvas: this choice is tentative)
- Final exam will be due by June 14 by midnight (via Canvas)

Food Logistics:

You will be responsible for your own meals for this trip. The High Sierra Institute at Baker Station has a full-service kitchen and refrigerators. Food is not allowed in the dorm areas, and ice chests and other food boxes should be stored in the kitchen building. I strongly recommend getting together with others to save money and space. Keep meals as simple as possible. For breakfast, it is best to use meals requiring only milk or hot water for their preparation. Lunches should consist of snacks that can be eaten all day (we will always be on the road mid-day). Dinners are easiest when they're out of a can! But you can be as fancy as you want, as evenings will generally be free time. You will need 4 lunches, and 3 dinners and breakfasts.

Evenings will generally be free time. There is a study/meeting hall where you can work on notes and projects (or play board games; bring your favorite). There is a nice campfire circle (musical instruments are okay!). There is a fishing stream adjacent to camp; if you fish, you must have the appropriate license. **Quiet hours are from 9 pm to 6 am.**

Sleeping and Bathroom Facilities: Baker Station has a dorm building that can sleep up to 32 people in 8 bedrooms with bunks and mattresses. If you prefer, you can set up a tent on the property. There are flush toilets and showers available in camp. During the day we will make bathroom stops as we can, but be prepared to do it wilderness-style if necessary (always have TP and related supplies in your daypack!).

Weather in May and early June can be unpredictable and unexpected. Wind, snow, and cold rain are possibilities. Please be prepared to be comfortable in these kinds of conditions. We will be doing some moderate hiking, so please bring adequate walking shoes as well.

Covid: The pandemic is NOT over. We must take every precaution to look out for each other. You should be fully vaccinated. We will be in close quarters while riding in the school vans, and masks ought to be worn. You need to do a Covid test a day before we leave. If you receive a positive result, or if you have ANY symptoms, DO NOT come on the trip. Let me know if you develop any symptoms while on the trip so we can take appropriate action to protect your fellow students.

No alcohol or illegal drugs allowed at school functions. Just don't do it...

Suggested Equipment and Supplies

Personal:

- Warm Sleeping Bag
- Foam Pad
- Day Pack
- Personal Toilet Kit
- Eating utensils, cup, plate
- Poncho or rainsuit
- Warm jacket or coat (layers)
- Warm hat
- Walking shoes
- Gloves or mittens
- Changes of clothes
- Flashlight (bring two)
- Extra batteries
- Sunglasses
- Sunscreen
- Toilet Paper
- Clipboard, Pen, Pencils

- Paper
- Towel
- Canteen/water bottle
- Lip balm
- Ground cloth

Group

- Cleaning supplies
- Cooking utensils
- Ice Chest
- Stove
- Lantern

Optional:

- Camera
- Rock hammer
- Extra blanket
- Small pillow
- Folding chair
- Spending money
- Tent

Course Learning Outcomes:

By the time you finish this course, you will be able to:

- a. Utilize the scientific method in reconstructing earth history on the basis of field relationships and observations.
- b. Use basic geologic principles and examples of present-day processes to explain the geologic events of the past, as revealed by rocks and fossils in observed rock outcrops.
- c. Identify common minerals, rocks, and fossils as located in field outcrops.
- d. Interpret and categorize depositional environments of sedimentary rocks on the basis of field observations.

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Web Page:

<http://hayesg.faculty.mjc.edu/Eastern%20Sierra%20Nevada.html>



Tentative Itinerary:

Date	Tentative Stops	Campsite
Tuesday, May 31	Knights Ferry Table Mountain Red Hills Trail of the Gargoyles Donnell's Vista Columns of the Giants	High Sierra Institute, Baker Station near Sonora Pass
Wednesday, June 1	Long Valley Caldera Mammoth Lakes Horseshoe Lake Inyo Craters Minaret Vista Hot Creek Convict Lake	Baker Station
Thursday, June 2	Sonora Pass West Walker River Phantom Forest Bodie Ghost Town Mono Lake	Baker Station
Friday, June 3	Devil's Punchbowl Panum Crater Lee Vining Canyon Tioga Pass Tuolumne Meadows Olmsted Point	Home