

Syllabus for SIO 239
Geological field methods for Geophysicists
February 5-7, 2016

This course is intended for pre-candidacy geophysics students who have little practical geological experience. We will learn about how to use: Brunton Compasses, GPS, topographic and geological maps and airphotos and proper note taking habits. We will explore the geology of Fossil Canyon (near Ocotillo), learn about how to determine age relationships and how to read the rock record for clues about the geological history of the area, including the opening of the Gulf of California.

What to bring:

Camping gear. Weather permitting, you do not need a tent, but you will need a sleeping bag and mat. Tarps will be supplied.

Sturdy boots, hat, sunscreen and plenty of water (at least 5 liters for Saturday/Sunday's field work). There is no water at the camp site.

A field notebook and a sturdy clipboard is required. Proper field notebooks are available for purchase from the instructor.

You will be issued a Brunton Compass and a GPS unit. These are expensive so take care – you will have to replace anything broken.

What will be due: You must turn in your notebook at the end of class on Sunday. These will be graded and returned to you.

Schedule.

February 5th: Arrival at Bow Willow Campground and dinner.

February 6th:

8:00 am Depart for Fossil Canyon

In Fossil Canyon:

Become familiar with use of Brunton and GPS. Learn how to locate yourself on a topographic map and read a geological map. Learn to identify the major geological units and to interpret how they formed. Learn to identify faults in the field. Learn to measure attitudes of geological features with a Brunton Compass.

4:00 pm Return to Bow Willow Campground for dinner.

February 7th:

8:00 am Depart for Fossil Canyon

In Fossil Canyon:

Determine the age relations of all the geological units on the map.

Write a narrative of the history of the region.

Return to UCSD by early afternoon.