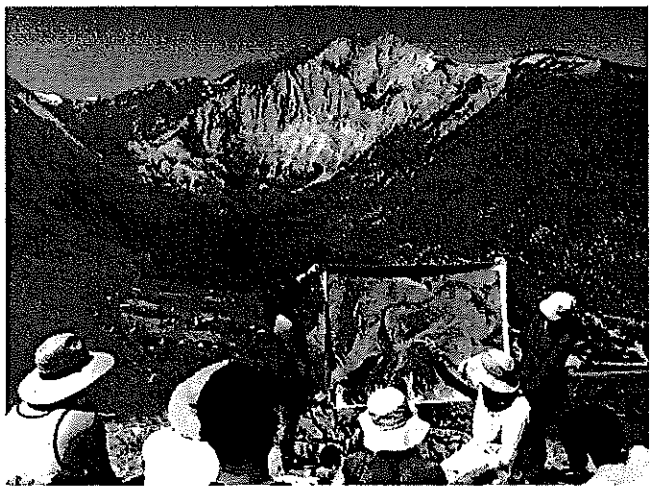


EART 189A Field Geology and GIS



EART 189A – Field Geology and GIS

2019 Syllabus

Instructor:

Noah Finnegan (nfinnega@ucsc.edu), EMS A115

Office Hours: Tuesday 10:30-12:30, or by appointment

Teaching Assistants:

Heather Shaddox (hshaddox@ucsc.edu)

Kelian Dascher-Cousineau (kdascher@ucsc.edu)

TA Office Hours TBD

Spring Quarter Schedule (5 credits):

Lecture, Tuesday 1:30-2:30 PM EMS D236

Lab, Thursday 1:30-3:00 ISB 486

Goals (Classroom)

Understand coordinate systems and projections

Develop familiarity with ArcMap

Create publication quality maps

Use DEMs both for interpretation and for quantitative analysis related to seismic and volcanic hazards

Use Remotely Sensed Imagery for fault mapping and kinematic interpretations

Class Schedule

April 2: Class Intro

Lab 1: No Lab

April 9: Why GIS, Data Concepts, Projections and Datums

Lab 2: Creating an Index Map

April 16: Tectonic Architecture of Eastern California

Lab 3: Hilton Creek part I

April 23: Climate History of Eastern California

Lab 4: Hilton Creek part II

April 30: Strike Slip Faults

Lab 5: Poverty Hills part I

May 7: Bedrock Landslides

Lab 6: Poverty Hills part II

May 14: Volcanic History of Eastern California

Lab 7: Panum Crater

May 21: Jeremy

Lab 8: TBD

May 28: Jeremy

Lab 9: DIY Presentations

June 4: Jeremy

Lab 10: Create Basemaps for 188A

June 26 (W): Mandatory Pre-departure meeting, 2-3:30 PM in EMS D226

Goals (Field)

Understand the nature of active faulting in the eastern California shear zone and how it relates to the tectonic architecture of western North America

Understand the nature of volcanism in the eastern California shear zone and how it relates to the tectonic architecture of western North America

Learn to map active faults in a field setting through the interpretation of topography and remotely sensed imagery

Learn to interpret fault kinematics in a field setting through the interpretation of topography and remotely sensed imagery

Learn to constrain fault slip rates in the field through the interpretation of offset features

Learn to interpret volcanic processes based on field observations of volcanic rocks and deposits

June 20 (Th) arrive at SNARL by dinnertime (6:00 p.m.). Camp orientation at 8:00 p.m.

June 21 (Fr) Introductory Field Trip to Area

June 22-23 (Sa-Su) Hilton Creek Fault

June 24 (M) Work Day, Hilton Creek report due 6:00 PM

June 25-27 (Tu-Th) Poverty Hills

June 28 (Fr) Work Day, Poverty Hills map and report due 6:00 PM

June 29 (Sa) Panum Crater

June 30 (Su) Work Day, Panum Crater report due 6:00 PM

July 1 (M) Clean up and leave SNARL by noon.

Grading: 50% labs during spring quarter, 50% field reports and maps