

## **EART 188B - Field Geology and GIS**

### **2016 Syllabus**

**Instructor: Noah Finnegan ([nfinnega@ucsc.edu](mailto:nfinnega@ucsc.edu))**

**EMS A115, 831-459-5110,**

**Office Hours: Mon 11:00-1:00 PM or by appointment.**

#### **TAs:**

**Allison Pfeiffer ([ampfeiff@ucsc.edu](mailto:ampfeiff@ucsc.edu)), EMS A243**

**Alex Nereson ([anereson@ucsc.edu](mailto:anereson@ucsc.edu)), EMS A142**

#### **Spring Quarter Schedule:**

Lecture, Monday 2:00-3:00 PM EMS D236

Lab 1 Wednesday 9 AM -12 PM ISB 486

Lab 2 Thursday 1-4 PM ISB 486

#### **Goals**

##### **Develop Basic Quantitative Geospatial Skills:**

Introduce coordinate systems and projections

Develop familiarity with ArcCatalogue, ArcMap, ArcScene and ArcPad

Do vector interpretations on raster data

Map scale and coordinate system designation, legend generation,

Use DEMs both for interpretation and for quantitative analysis

Landform Analysis; Basic Database operations

Become familiar with Juno and linked Trimble GPS

Work with computer-generated images in field

##### **Regional Geology of Eastern California Shear Zone**

Nature of active faulting and how it relates to tectonics

Volcanism in Owens Valley to Mono Lake and how it relates to tectonics

Solve specific problems raised by the image interpretation

Integrate your field observations with the general geologic history

##### **Course Website & Syllabus:**

[geomorphology.sites.ucsc.edu/teaching/eart188b/](http://geomorphology.sites.ucsc.edu/teaching/eart188b/)

**In addition, materials will be posted periodically to a Google drive that I will share with you**

### **Class Schedule**

March 28: Class Intro

Lab 1: No Lab

April 4: Why GIS, Data Concepts, Projections and Datums

Lab 2: Creating an Index Map

April 11: Tectonic Architecture of Eastern California

Lab 3: Hilton Creek part I

April 18: Climate History of Eastern California

Lab 4: Hilton Creek part II

April 25: Strike Slip Faults

Lab 5: Poverty Hills part I

May 2: Assign Presentation Groups & Topics, lecture TBD

Lab 6: Poverty Hills part II

May 9: Volcanic History of Eastern California

Lab 7: Panum Crater

May 16: Class Presentations (will require extra time, TBD)

Lab 8: Loading data onto Trimble Juno / Exploring GIS resources online

May 23: Synthesis of Group Presentations

Lab 9: DIY Presentations

May 30: Memorial Day, no class

Lab 10: Get Trimbles Ready for Field

Wednesday, June 15: Mandatory Pre-departure meeting, 2-3:30 PM in EMS D226

Thursday, June 16: Depart for Camp Ferguson

### **188B Field Schedule**

7/8 (Fr) arrive at SNARL by dinnertime (6:00 p.m.). Camp orientation at 8:00 p.m.

7/9 (Sa) Introductory Field Trip to Area

7/10-7/11 (Su-Mo) Hilton Creek Fault

7/12 (Tu) Hilton Creek report due 6:00 PM

7/13-7/15 (We-Fr) Poverty Hills

7/16 (Sa) Poverty Hills map and report due 6:00 PM

7/17 (Su) Panum Crater

7/18 (Mo) Panum Crater report due 6:00 PM

7/21 (Tu) Clean up and leave SNARL by noon.

### **Grading**

Class/Lab Exercises (40%)

Class Presentation: (10%)

Field Exercises (50%)