This class is an introduction to remote sensing, covering visible, infrared, and radar frequencies. It encompasses a variety of flown and satellite sensors and their use applied to geological, biological, oceanographic, environmental and land use problems. Labs are a key part of the course, providing the tools to carry out studies of multispectral and hyperpectral data. Term projects are taken from real datasets and are individually constructed to meet the student’s particular interests.

Instructor: Eli Silver, A142 EMS Bldg, x9-2266; esilver@ucsc.edu
Office Hours for Eli Silver: MWF 9-3; TuTh, 1-3.

TAs: Joel Edwards jhedward@ucsc.edu
Allison Pfeiffer ampfeiff@ucsc.edu

Available in the Bay Tree Bookstore

Quizes: At least once each week

Labs: Ming Ong computer Lab.
Tuesday, 2:30-5:30 pm, or
Wednesday, 2:30-5:30 pm

Computer Account: Be sure that your UCSC computer (email) account is working.

Computer Memory: Required—a small portable hard drive or a flash drive (at least 1 Gb).

Term Project: Required (Due by Noon on Monday, December 7). This will involve processing and interpretation of a remote sensing data set, and will be focused on a problem of your choosing. A significant part of the class grade will be based on the term report. It needs to be complete, correctly done, and clearly written.
EART 107 Class Schedule Fall 2015

September
  24  Course overview, Introduction
  29  Fundamentals, Resolution (Chapter 1,2)

October
  1   Air Photo and image interpretation (Chapters 4, 5)
  6   Photogrammetry (Chapter 6)
  8   Radiance, Reflectance, History (Chapters 2, 3)
 13  Quiz
 15  Multispectral Scanners (Chapter 7)
 20  Classifications
 22  Vegetation (Chapter 11)
 27  Hyperspectral Imagery
 29  Spectral Absorptions

November
  3   Thermal Remote Sensing (Chapter 8)
  5   Water (Chapter 12)
 10  Soils and Geology (Chapters 13, 14)
 12  Reference Frames
 17  LiDAR (Chapter 10)
 19  Radar (Chapter 9)
 24  Sensor Design

December
  1   Student Presentations
  3   Student Presentations
  7   Final Report Due by Noon

Some Helpful Web pages:
http://asterweb.jpl.nasa.gov/  (Locate and download Satellite data)
http://www.nasa.gov/home/index.html  (NASA’s Homepage)
http://emerald.ucsc.edu/~hyperwww/chevron/index.html
http://masterweb.jpl.nasa.gov/  (MASTER home page)
http://www.digitalglobe.com/?goto=products/qb_gallery  (Digital Globe)
http://opentopo.sdsc.edu:8080/gridsphere/gridsphere?cid=otgoogleearth  (Calif LiDAR)
http://www.californiacostline.org/  (Oblique air photos – CA coast)
http://www2.jpl.nasa.gov/srtm/  (Shuttle Radar Topography Mission topo data)