

# Geology 340: Images of the Earth

## Final Project

25% of course grade

### Assignment

Students must create a Geographic Information System, including one or more processed images to be used as a part of the GIS. The project must center around a question of scientific, social, or environmental interest that can be adequately addressed by a GIS. The project should include background research on the topic in question and pertinent commentary.

### Schedule

A proposal (about one page of text, detailing the problem to be addressed, possible data sets to be used, and techniques required) is due **April 11** in class. A progress report and draft of the GIS is due **April 25**. You will present the GIS to the class in lab on **May 2**, and the final version of your project is due on the last day of class on **May 5**.

### Materials to turn in

- The final version of your project should include the following items:
- A copy of your presentation materials
- An explanation and guide to your GIS (length depends on your GIS, but probably 1-2 pages)
- A brief paper (around 4-6 pages of text, double spaced) including a statement of the question you are studying and the hypotheses you are testing
  - background research
  - data sets collected
  - research methods
  - results and conclusions
  - works cited (including data sources)

### Possibly useful data sources:

- Geology department CD-ROMs of images, including
- 7-band Landsat TM images of most of the state from 1984 and 1991-2
- Landsat images of much of the state from 1973
- Images of most of Puerto Rico in various years
- Images of some of China from various years
- NASA's Destination Earth project (<http://www.earth.nasa.gov/>) - links to satellite imagery and other data
- Oceanside Seismic Data Set - California off-shore subsurface seismic profiles
- Default images and data sets from ArcGIS and tutorials
- NOAA's National Geophysical Data Center (<http://www.ngdc.noaa.gov/>) - includes glaciers and ice, marine and coastal geology, climate and paleoclimate data, gravity and magnetics
- NOAA's National Climate Data Center (<http://www.ncdc.noaa.gov/>) - includes all kinds of climate and weather data; has links to world and regional climate data centers
- NOAA's Satellite Active Archive (<http://www.class.noaa.gov/>) - access to all kinds of climate and weather data from NOAA satellites - some of this is not free.
- U.S. Census Bureau (<http://www.census.gov/>) - a wide variety of demographic and social information
- U.S. Center for Disease Control (<http://www.cdc.gov/>) - health statistics
- Detailed GIS data for campus from previous projects

There are thousands of sites on the web with data sets, satellite photos and images - just use any search engine.