The objective of this course is to emphasize the structure of the geo-database model, and applications software to build, analyze and map spatial patterns within the geo-database framework. This is an introductory course for students without previous GIS experience. You will be led through approximately 5 weeks of prepared lab assignments to teach you how to create and analyze spatial data. These assignments will cover both environmental and physical geography applications. You will create a PowerPoint presentation for each of these lab assignments. The remainder of the course will be devoted to individual student projects. The projects require you to identify an environmental problem addressable within a GIS framework, to build the spatial and relational database, and to perform spatial analysis and create maps of the projects results. The project is to be presented as either a PowerPoint presentation or a web-based design. Again, no previous experience with the software is required.

Topics
1. What is Geographic Information? The National Atlas
2. Point in Polygon Analysis Illinois Natural Resources Clearinghouse
3. Geocoding, Computing Network Service Areas TIGER/Line Files
4. Watershed GeoDatabase Mojave Desert Ecosystem Program
5. Working with Tables, Joining Attribute Tables The National Atlas
6. Map Projections and Coordinate Systems TIGER Files & Illinois Clearinghouse
7. Raster Data Structures and Digital Terrain Analysis GIS Data Depot
8. Remote Sensing Data Sources for Environmental Analysis
9. Other sources of spatial data U. S. Geological Survey

Individual Student Projects

Grading:
50% weekly lab assignments
50% individual project