Instructor Name: Jennifer Miller

Course Name: Introduction to GIS

Course Description:
This course describes basic concepts underlying geographic information systems and science (GIS) and introduces students to spatial analysis with GIS. Although the course will include hands-on laboratory exercises using ArcGIS software, the focus is on the “science behind the software” (e.g., types and implications of functions and analysis, rather than just how to do the analysis).

Day 1:
- Overview of Geographic Information Systems and Science
- Conceptualization of space
- Data Models used in GIS
- Properties of spatial data
- Spatial reasoning
- Basics of ArcGIS

Day 2:
- Getting data into the computer
- Downloading and using common datasets
- Projections and coordinate systems
- Working with geographic databases

Day 3:
- Managing, analyzing, and visualizing GIS data
- Exploring and describing data with GIS
- Vector overlay analysis
- Raster overlay analysis (map algebra)
- Creating spatial information products (maps, charts, other graphics)

Day 4:
- GIS Applications
- Solving spatial problems with GIS