Beginner GIS Workshop I & II

Overview
This course covers fundamental GIS concepts as well as how to query a GIS database, manipulate tabular data, edit spatial and attribute data, and present data clearly and efficiently using maps and charts.

Participants will learn how to use ArcGIS including: ArcMap™, ArcCatalog™, and ArcToolbox™ and explore how these applications work together to provide a complete GIS solution.

This 2-day course is for those who are new to ArcGIS and new GIS in general. This course will introduce basics of GIS on Day 1 followed by Day 2 hands-on experience working with census data, crime data and address matching/geocoding.
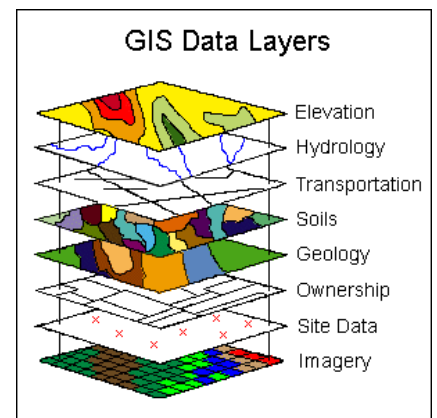
Prerequisites and Recommendations
Participants should know how to use MS windows software. This course provides the fundamental ArcGIS knowledge and experience needed to enroll in Intermediate GIS workshop

Module I: Introduction to GIS
Learning Objectives
  ➢ What is GIS?
  ➢ Map vs. GIS
  ➢ Major Components of a GIS
  ➢ Introduction to Data Collection
  ➢ Introduction to GIS Data Types and Resolution
  ➢ Introduction to Projection and Datum
  ➢ Introduction to Spatial Analysis
  ➢ Introduction to Map Design and Communication Processes

GIS Data Layers — Elevation, Hydrology, Transportation, Soils, Geology, Ownership, Site Data, Imagery

Module II: Getting Started with ArcGIS 9.x
Learning Objectives
  ➢ Introduction to ArcGIS Software
  ➢ Manipulating Display Parameters in ArcMap

Case Study: Find dry cleaners locations that are within certain distance of an interstate highway

Case Study: Symbolizing and displaying line and polygon features

Case Study: Symbolizing raster data - Digital Elevation Model (DEM)

Case Study: Displaying quantitative data

Module III: Map Making and Display
Learning Objectives
  ➢ Map Projection & Coordinate Systems
  ➢ Map Making and Printing Maps Using ArcGIS

Case Study: Impact of different projections and coordinate systems on maps

Case Study: Impact of different datum(s) on maps

Case Study: Map composition for Hillsborough County, FL

Module IV: Data Preparation

Learning Objectives
  ➢ Raster Reclassification
  ➢ Manipulating Vector Data and Digitizing
  ➢ Creating A Personal Geodatabase

Case Study: Convert vector data layers to raster for natural resource management

Case Study: Extracting vector data from Landsat data

Case Study: Create a personal geodatabase for city utility management

Module V: Analyzing Spatial Data
Learning Objectives
  ➢ Querying Data in ArcMap
  ➢ Selecting Features by Location
  ➢ Creating a Layer from a Selection
  ➢ Preparing Data for Analysis
  ➢ Undertaking Spatial Data Analysis

Case Study: Querying the census data

Case Study: Selecting and mapping transportation data

Case Study: Finding cities within 5 km of rivers in Florida

Module VI: Working with Locational Data
Learning Objectives
  ➢ Geocoding
  ➢ Create an Address Locator Service
  ➢ Match Addresses
  ➢ Re-match Un-Matched Addresses
  ➢ Adding XY Data

Case Study: Matching addresses in Atlanta, GA

Case Study: Importing GPS data in ArcMap

Module VII: Comprehensive Application of GIS
Learning Objectives
  ➢ Application of Census Geography
  ➢ Crime Mapping

Case Study: Finding sites for a potential youth center

Case Study: Crime hotspot analysis