ArcGIS Desktop I: Getting Started with GIS

Two days

Overview

This course provides the foundation for understanding what GIS is, what it can do, and how others are using it. You learn the basic functions of a GIS, why a GIS database is powerful, and what coordinate systems and map projections are and why they are important. In course exercises, you work with ArcMap to visualize geographic data, create maps, query a GIS database, perform spatial analysis using common analysis tools, and solve geographic problems using a systematic approach. This course teaches the skills and knowledge needed to take ArcGIS Desktop II: Tools and Functionality.

Audience

This course is designed for those who are new to GIS and ArcGIS, or those who are infrequent users of ArcGIS who do not have a GIS background**.**

Prerequisites and recommendations

Students should know how to use Windows-based software for basic file management and browsing.

Goals

- Explain what a GIS is and what it can do.
- Work with and create GIS maps in ArcMap.
- Access and query a GIS database.
- Describe two common GIS data structures.
- Explain what geographic data is, how it is made, and where to get it.
- Explain what spatial analysis is and solve geographic problems using ArcGIS analysis tools.

Topics Covered

The big picture of GIS: Basic functions of a GIS; Real-world applications.

Exploring GIS maps: Defining features, layers, and data frames; Exploring map scale; Understanding the relationship between features and attributes.

Exploring a GIS database: Exploring attribute tables; Identifying features; Symbolizing features based on their attributes; Labeling features based on their attributes.

Creating map layouts: Understanding data view and layout view; Using the Layout toolbar; Using map templates; Modifying map elements; Printing maps.

Understanding location: Defining coordinate systems and map projections; Reading and finding location coordinates on a map; Measuring area and distance on a map.

Understanding raster and vector data: Representing geography; Storing real-world locations; Symbolizing rasters; Using raster and vector data together; Understanding geodatabases.

Acquiring geographic data: Data formats; Methods of creating geographic data; Using ArcCatalog to explore geographic data; Using metadata.

Querying data: Understanding and performing attribute queries; Understanding and performing spatial queries.

Analyzing spatial relationships: Understanding overlay; Understanding buffer; Accessing tools in ArcToolbox; Performing Union and Intersect; Buffering features.

Solving problems with GIS: Applying the geographic inquiry process; Using GIS tools to solve a geographic problem; Creating a map to show results.