ArcGIS Desktop II: Tools and Functionality

Three Days

Overview

This course is part of the ArcGIS Desktop 9.3 Foundational Training Curriculum. The ArcGIS 9.2 version of this course was titled Introduction to ArcGIS I.

ArcGIS Desktop software is an integrated system that includes all the tools needed to get the most out of a GIS. This course teaches the range of functionality available in the software and the essential tools for visualizing, creating, managing, and analyzing geographic data. The hands-on course exercises emphasize practice with ArcMap and ArcCatalog (the primary applications included with ArcGIS Desktop software) to perform common GIS tasks and workflows. The tools for creating and managing geographic data, displaying data on maps in different ways, and combining and analyzing data to discover patterns and relationships are highlighted, and you learn how ArcGIS Desktop provides a complete GIS software solution. By the end of the course, you will be prepared to start working with the software on your own.

Audience

This course is designed for those with an education in or workplace experience with GIS but no ArcGIS software experience. This course assumes knowledge of basic GIS concepts. This course teaches the skills and knowledge needed to take other ArcGIS courses, including ArcGIS Desktop III: GIS Workflows and Analysis.

Prerequisites and recommendations

Students should have completed ArcGIS Desktop I: Getting Started with GIS or Getting Started with GIS or have equivalent knowledge.

Goals

- List common GIS tasks and identify which ArcGIS Desktop application is used for each task.
- Understand what the geodatabase offers for GIS data storage.
- Create and edit geodatabase features.
- Control the appearance and display of data layers in ArcMap.
- Classify and symbolize map data.
- Label map features.
- Change the coordinate system and map projection used to display a dataset.
- Access feature information in tables and control table display properties.
- Query and analyze GIS data.
- Create presentation-quality maps and graphs.

Topic Covered

***Investigating geographic data*:** How geographic data is stored; Vector and raster data; Geodatabase basics and advantages; Shapefiles; Coverages; CAD data; Managing data in ArcCatalog; Displaying data in ArcMap; ArcMap basics; Data and layers.

Managing map layers: Zooming to layers; Bookmarks; Display windows; Scale ranges; Group layers; Selection layers; Layer files; Creating hyperlinks.

***Symbolizing categorical data*:** Symbology; Choosing symbology; Types of symbols (marker, line, fill); Creating symbols.

Symbolizing quantitative data: Symbology options (graduated colors, graduated symbols, proportional symbols, dot density, charts); Classification methods (Natural Breaks, Equal Interval, Quantile, Manual); Excluding data from a classification; Rendering raster data.

Labeling map features: Label placement for different feature types (points, lines, polygons); Label symbology; Controlling label display using scale range and SQL query; Label classes; Label expressions; Label ranks and weights; What is annotation?; Geodatabase annotation; Map annotation.

Using coordinate systems and map projections: What is a coordinate system?; Geographic coordinate systems; Datums; Projected coordinate systems; Map projections; Feature classes and coordinate systems; Data frames and coordinate systems; Geographic transformations; Working with an unknown coordinate system; Projecting data; Defining a projection.

Making a map layout: Working in layout view; Tools for arranging map elements; Data frame properties for layouts; Adding legends, scale bars, and other map elements; Exporting maps; Working with map templates.

Managing tables: Table structure; Layer attribute tables; Nonspatial tables; Getting information from tables; Field properties; Table appearance; Creating graphs and reports; Connecting tables using joins and relates; Cardinality.

Editing features and attributes: Reasons to edit data; Working with the Editor toolbar; Edit sketches; Common editing tools; Edit tasks; Snapping to features while editing; Editing attributes; Calculating values for geometry fields; Working with coincident geometry in a map topology; Typical editing workflow.

Creating geodatabases and feature classes: Types of geodatabases; Geodatabase organization; Feature class organization; Feature class properties and attributes; Metadata; Creating, viewing, and editing metadata; Importing and exporting metadata; Creating features in a new feature class.

Getting locations from attributes: Adding x,y coordinate data; Finding places and addresses; Finding routes and nearby places; Geocoding; Geocoding components (address table, address locator, reference data); Address matching overview; Geocoding workflow; Reference data sources.

Solving spatial problems with query and analysis: GIS analysis basics; Typical analysis workflow; Common analysis operations (attribute and spatial queries, clipping data from layers, buffering features, overlaying features); Overview of geoprocessing; Analysis results.

Customizing ArcGIS Desktop: Why customize the interface?; Customize dialog box; Locating

commands; Adding new toolbars, commands, and menus; Saving customizations; Saving to a template; Storing templates.