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# Fundamentals of ArcGIS

## Overview

GIS gives you an easy way to get access to the tremendous amounts of data available. At first glance, ArcGIS lets you see this data on a map. But underneath, the software has powerful tools for analyzing the data. With ArcGIS, you can quickly print a bubble map showing crime rates, evaluate parcel values across a city, plan a location to open a new branch of your business, or explore a site for potential environmental issues. This course helps you understand the types of data that ArcGIS supports, and how to manipulate the data. For example, you will learn how to connect to an Excel spreadsheet that has GPS location data in it. This class is the first step in learning to incorporate this valuable application into your daily workflows.

## Audience

Those who want to create maps and explore data in ArcGIS.

## Topics Covered

### Day 1

- Introduction to GIS – Understand the components, goals, and reasons so many professionals use GIS. (What is GIS?; Working in ArcMap)
- ArcMap Basics – Interact with the data in the map and understand ArcGIS terms. (Essential Tools)
- Using Symbology to Analyze the Data – Change the appearance of the map to communicate the right information effectively (Symbolizing Vector Data; Symbolizing Raster Data; Image Analysis Window)
- Designing Your Map for Presentation - Design \*.pdf and printed maps. (Data View and Layout View; Designing the Page; Adding Elements to Explain the Data; Exporting and Printing)

### Day 2

- Optimizing the Display of Your Data - Emphasize patterns or trends in the data, filter schools by type, add text to the map, save and re-use data display settings. (Layer Organization; Layer Properties; Layer Files)
- Asking Questions of Your Data – Ask questions of your data, such as, “Where are the hospitals with the most trauma patients?” and get answers like, “The average

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- number of trauma patients in this area is...” (Selecting Features; Interactive Selection; Select by Attributes; Select by Location; Using the Selection)
- Understanding GIS Data Types – Understand the data behind the map, including the difference between a shapefile and a geodatabase feature class, and learn about how to find GIS data online. (Finding Data; Accessing and Managing Data; GIS Data; Documenting Your Data)
  - Tables and Analysis – View data tables in ArcMap. Start with an Excel spreadsheet of coordinates and end with a map of recent earthquake points. Learn how to buffer hurricane paths or clip out just the police stations from a specific county. (Working with Tables; Plotting Coordinates; Address Geocoding; Basic Geoprocessing)

## **Format**

In-person instruction with hands-on practice, and course materials you can keep.

## **Prerequisites and Recommendations**

Students should have knowledge of Microsoft Windows®.