

# Fundamentals of ArcGIS for Petroleum

*Course Length: 2 days*

*ArcGIS Version: 10.x*

*App: ArcMap, ArcCatalog*

## 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 well production, evaluate company and competitor lease activity, plan a seismic survey, explore a site for potential environmental issues, or even analyze sub-surface data for play assessments.

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 well data in it. This class is the first step in learning to incorporate this valuable application into your daily workflows.

## Audience

Those in the petroleum industry who want to create maps and explore data in ArcGIS; including, but not limited to: Geologists, Geophysicists, Geoscience Technicians, and GIS Analysts.

## 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; Printing and Exporting)

### Day 2

- 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)

- Asking Questions of Your Data – Ask questions of your data, such as, “Where are the leases that expire this quarter?” and get answers like, “The average depth of gas wells in this field is...” (Selecting Features; Interactive Selection; Select by Attributes; Select by Location; Using the Selection)
- Optimizing the Display of Your Data – Emphasize patterns or trends in the data, filter wells by type, add text to the map, save and re-use data display settings. (Layer Organization; Layer Properties; Layer Files)
- Tables and Analysis – View data tables in ArcMap. Start with an Excel spreadsheet of coordinates and end with a map of well points. Learn how to buffer those wells or clip out just the wells from a specific field. (Working with Tables; Plotting Coordinates; 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®.