

ArcGIS Pro Essentials for Petroleum

Series: Part II

Course Length: 3 days
ArcGIS Version: Pro 3.x
App: ArcGIS Pro

Overview

You know how to use ArcGIS Pro. This course is about putting real petroleum data to work in it.

This three-day course is for upstream, midstream, and downstream professionals who are ready to move beyond basic mapping and into the data management skills that drive real production value. You will learn to locate and connect to authoritative oil and gas data sources, including government repositories and web services, and bring non-GIS formats like spreadsheets of well coordinates, CAD drawings, scanned maps, and KML files directly into your projects. You will link lease polygons to ownership records, connect pipeline layers to inspection databases, and attach photographs to environmental issues near production facilities, even if the data is using different coordinate systems. You will also create and maintain your organization's own GIS data, keeping it current as plays are discovered, pipelines are built, and land changes ownership. The course closes with the presentation skills that matter in petroleum: dynamic labeling for API numbers and well attributes, map layouts for regulatory submittals, and map series that generate one page per lease block automatically. By course end, you will have the practical data skills to make ArcGIS Pro a genuine production tool for your team.

Audience

This course is designed for petroleum industry professionals, including GIS technicians, engineers, geoscientists, land and regulatory staff, and analysts, who are comfortable with the ArcGIS Pro fundamentals covered in ArcGIS Pro Essentials for Petroleum Series: Part I and are ready to work more independently with upstream, midstream, and environmental data. It is ideal for those who need to find, connect to, create, maintain, and present GIS data as part of their day-to-day petroleum workflows.

Topics Covered

Day 1

- GIS Data Sources – Know where petroleum GIS data comes from, who maintains it, and how to access it, including government repositories, web services, and agency downloads for oil and gas wells, fields, and geology. (GIS Data; GIS Data on the Web; Sharing Maps and Data)
- Understanding Coordinates – Understand why coordinate systems matter in petroleum GIS, where real-world errors occur, and how to prevent the kinds of costly data busts that result from misaligned spatial references. (Coordinate Issues; Geographic Coordinate Systems; Projected Coordinate Systems; Coordinates in ArcGIS)

- Bringing Data Into ArcGIS and Publishing Out of ArcGIS – Import well coordinates from contractor spreadsheets, CAD facility drawings, KML files, LiDAR, and scanned paper maps, and publish your data back out to Google Earth or other formats for sharing with partners and regulators. (Importing Data; Georeferencing an Image)
- Joins and Relates – Connect your spatial data to the business information that gives it meaning: link lease polygons to ownership records, attach legal descriptions to parcel boundaries, associate production data with well points, and join pipeline features to inspection tables. (Using Tables in ArcGIS Pro; Table Relationships; Attribute Joins; Relates; Spatial Joins)

Day 2

- Creating GIS Data – Build your organization's own GIS datasets from the ground up, creating geodatabases, feature classes, and data structures organized around your petroleum workflows rather than adapting someone else's schema. (GIS Data)
- Editing Data – Keep your GIS data current as conditions change: add newly permitted wells, update pipeline routes, revise lease boundaries, and flag environmentally sensitive areas as your operational footprint evolves. (Editing Basics; Feature Construction; Modifying Features)
- Group Templates and Topology – Enforce data quality rules that prevent gaps, slivers, and overlaps between touching features — so lease boundaries are airtight, pipeline networks stay connected, and shared boundaries between adjacent polygons update correctly. (Map Topology; Group Templates)

Day 3

- 3D Visualization in ArcGIS – Visualize your assets in three dimensions: drape well locations and pipeline routes over terrain surfaces, extrude facility footprints by attribute, and navigate your operational area in global or local 3D scenes. (Scenes in Pro; Scene Conversion; 3D Data and Layers; Extrusion)
- Analysis in ArcGIS – Run geoprocessing tools against your petroleum data to answer operational questions: build right-of-way buffers around pipelines, analyze production across lease blocks, combine environmental and infrastructure datasets to assess risk, and run analysis on selected subsets of features. (Geoprocessing Tools; Credit-Based Analysis Tools; The Geoprocessing Environment)
- Labeling Features – Control how your maps communicate well identifiers, API numbers, pipeline attributes, and other critical field data: configuring label styles, expressions, placement rules, and classes so the right information appears clearly at the right scale. (Label Basics; Label Symbols and Label Positions; Label Expressions; Label Classes)
- Making a Map Series – Create a single layout template that automatically generates a complete set of map pages, such as one per lease block, county, or operating area, and export the full series to PDF for reporting, regulatory submittals, or field distribution. (Making a Map Series; Export to PDF)

Format

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

Prerequisites and Recommendations

Attendees should have knowledge of Microsoft Windows® and be familiar with the basic use of ArcGIS Pro, including the topics covered in the **ArcGIS Pro Essentials for Petroleum Series: Part I** class.