

ArcGIS Pro Essentials

Course Objectives

The ArcGIS Pro Essentials course is designed to provide learners with a strong foundation in desktop GIS workflows using ArcGIS Pro. The course aims to help participants develop practical skills in spatial data management, mapping, visualization, analysis, editing, and sharing geospatial information.

By the end of this course, learners will be able to:

- Understand the fundamentals of ArcGIS Pro and the modern GIS ecosystem.
- Navigate the ArcGIS Pro interface efficiently, including ribbons, panes, views, and project structures.
- Create, manage, and organize ArcGIS Pro projects and geospatial datasets.
- Work with multiple GIS data formats including feature classes, rasters, spreadsheets, CAD, and web layers.
- Create professional-quality 2D and 3D maps with effective symbology and labeling techniques.
- Perform spatial data editing and feature creation workflows.
- Execute geoprocessing and spatial analysis tasks using core GIS tools and ModelBuilder.
- Design map layouts and prepare maps for printing and digital publishing.
- Share GIS content such as web maps, feature layers, and geoprocessing tools through ArcGIS Online and ArcGIS Enterprise.
- Build confidence in applying GIS workflows for real-world planning, analysis, and decision-making tasks.

Course Outcomes

Upon successful completion of this course, participants will be able to:

- Confidently use ArcGIS Pro for day-to-day GIS operations and workflows.
- Create and manage ArcGIS Pro projects and geodatabases.
- Import, organize, query, and visualize spatial and tabular datasets.
- Produce publication-quality maps and layouts using cartographic best practices.
- Create and edit spatial features including points, lines, and polygons.
- Apply spatial analysis tools such as Buffer, Clip, Intersect, Spatial Join, and Dissolve.

- Automate geoprocessing workflows using ModelBuilder.
- Work effectively in both 2D and 3D GIS environments.
- Publish and share GIS resources to ArcGIS Online and Enterprise platforms.
- Demonstrate end-to-end GIS workflow competency from data preparation to map publishing.

Target Audience

This course is ideal for:

- GIS professionals who are new to ArcGIS Pro.
- ArcMap users transitioning to ArcGIS Pro.
- Urban planners, surveyors, and geospatial analysts.
- Civil engineering and infrastructure professionals working with spatial data.
- Environmental scientists and researchers using GIS for analysis and reporting.
- Government and utility sector employees managing geographic information.
- Students and educators seeking practical GIS skills.
- Anyone interested in learning modern desktop GIS workflows using ArcGIS Pro.

Course Outline - The course comprises **24**-hours of theory and labs and is divided into **8** different Modules. Each chapter will be followed by hands-on lab exercises to reinforce learning and gauge understanding of the topics covered.

Table of Contents: -

Module 1: Getting Started with ArcGIS Pro

1. What is ArcGIS Pro? — Overview & Capabilities
2. System Requirements & Installation
3. Licensing & Sign-In — ArcGIS Online & Enterprise
4. Navigating the Start Page
5. Understanding the ArcGIS Pro Project Structure (.aprx)
6. Hands-on: Introducing ArcGIS Pro Quick-Start Tutorial

Module 2: The ArcGIS Pro User Interface

1. The Ribbon — Core Tabs & Contextual Tabs
2. Views — Maps, Scenes, Layouts, Tables & Charts

3. Panes — Contents, Catalog, Symbology & Geoprocessing
4. Customizing the Interface
5. Hands-on: Navigate Maps and Scenes

Module 3: Working with Data in ArcGIS Pro

1. The Catalog Pane & Catalog Views
2. Data Types Supported in ArcGIS Pro
3. Adding Data to a Map or Scene
4. Exploring & Querying Data
5. Managing Data — Copy, Export & Organize
6. Hands-on: Add Data & Explore Data Tutorials

Module 4: Mapping & Visualization

1. Map Authoring Fundamentals
2. Symbology — Single Symbol, Categories & Quantities
3. Labeling Features
4. Visualizing Temporal Data
5. Introduction to 3D Visualization
6. Hands-on: Author a Map & Symbolize Layers

Module 5: Layouts & Map Production

1. Creating a Layout
2. Working with Multiple Map Frames
3. Exporting & Printing Maps
4. Map Series (Spatial & Bookmark-Driven)
5. Hands-on: Make a Layout Tutorial

Module 6: Editing & Data Creation

1. Edit Session Fundamentals
2. Creating Features — Points, Lines & Polygons
3. Modifying Existing Features
4. Attribute Editing & Field Defaults

5. Creating Points from XY Data / CSV Tables
6. Hands-on: Create Points on a Map

Module 7: Geoprocessing & Spatial Analysis

1. Geoprocessing Fundamentals
2. The Geoprocessing Pane & History
3. Essential Analysis Tools
4. Working with ModelBuilder
5. Introduction to Spatial Joins & Proximity Analysis
6. Hands-on: Use Geoprocessing Tools & Build Models

Module 8: Sharing & Collaboration

1. Sharing in the ArcGIS Ecosystem
2. Publishing a Web Map
3. Sharing a Web Feature Layer
4. Publishing a Geoprocessing Web Tool
5. Packaging & Sharing Locally
6. Hands-on: Share a Web Map & Web Tool