ArcGIS Pro Map Fundamentals

Target Audience

This course is designed for:

- GIS analysts and technicians who create, edit, and maintain spatial data
- Geospatial and intelligence analysts who work with map imagery, coordinates, and MGRS references
- Cartographers and mapping professionals preparing map products
- Defense, emergency response, and planning personnel who use range rings, ellipses, and arcs for spatial analysis
- Surveyors, engineers, and field data teams who import coordinate data from spreadsheets and databases
- Students and new users of ArcGIS-style desktop mapping software who want hands-on skills

Course Objectives

The course aims to:

1. Introduce the creation of new feature class layers for points, lines, polylines, and polygons.
2. Teach how to import spatial data from CSV files, spreadsheets, Excel tables, databases, and text.
3. Demonstrate how to add, edit, and move features in existing layers.
4. Develop navigation skills, including jumping to MGRS locations and zooming to scales and layers.
5. Explain how to build and view mosaic datasets and map catalogs.
6. Show how to create map chips from polygons and points, and how to resolve overlapping pixels.
7. Provide skills for creating, editing, moving, and deleting arcs, ellipses, and range rings.
8. Explain how to configure, display, and copy map coordinates in different formats.

Course Outcomes

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

1. Create and populate layers: Build new feature class layers and add points, lines, polylines, and polygons using entered coordinates, coordinate conversion, and imported data.
2. Import external data: Convert tables, CSV files, spreadsheets, and Excel data into mapped locations.

3. Modify existing data: Add new features to existing layers and edit or move points, lines, polygons, and polylines accurately.
4. Navigate efficiently: Locate positions using MGRS and zoom to a specific scale or layer extent.
5. Manage imagery: Create mosaic datasets and map catalogs, and view overlapping images.
6. Produce map chips: Generate map chips by polygon or point and resolve overlapping pixel issues.
7. Perform range analysis: Create, update, move, and delete range rings, ellipses, and arcs using interactive, typed, pasted, or file-based inputs.
8. Work with coordinates: Change default and input coordinate formats, copy coordinates by right-clicking the map, and customize coordinate output.

Course Outline

The course comprises **16**-hours of theory and labs and is divided into **7** 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: -

Chapter 1: Getting Started with New Feature Class Layers

- Add Points by Entering Coordinate
- Add Points by Entering Coordinate (with Coordinate Conversion)
- Import Points by CSV, Spreadsheet
- Convert a Table to Locations on the Map
- Add Lines
- Import Line from Database
- Import Polyline from Database
- Add Polyline
- Add Polygon
- Import Polygon from Text
- Add Excel Table to Map

Chapter 2: Modifying Existing Layers

- Add Lines to Existing Layer
- Add Points to Existing Layer

- Add Polygon to Existing Layer
- Add Polylines to Existing Layer
- Edit/Move Line
- Edit/Move Point(s)
- Edit/Move Polygon
- Edit/Move Polyline

Chapter 3: Navigating in Maps

- Jump to MGRS
- Zoom to Specific Scale
- Zoom to Layer

Chapter 4: Getting Started with Mosaic Datasets

- Create Map Catalogs (Create Mosaic Dataset)
- View Map Catalog (Images)
- View Overlapping Maps (Images)

Chapter 5: Creating Map Chips

- Creating Map Chips by Polygon {Clip Raster (Data Management)}
- Create Maps Chips by Point
- View Overlapping Maps (Images)
- Resolving Overlapping Pixels

Chapter 6: Working with Range Rings, Ellipses, and Arcs

- Add Arcs by Creating a New Feature
- Add Arcs from Database (Existing Feature Class)
- Edit Arcs
- Delete Arcs
- Create Ellipses Interactively
- Create Ellipses from Copy/Pasted or Typed Text (Known Coordinates)
- Delete Ellipses
- Update/Edit Ellipses
- Create Range Rings Interactively

- Create Range Rings Using a Fixed Ring Number and Distance from Copy/Pasted Text
- Create Range Rings by Distance from an Origin from Copy/Pasted Text
- Create Range Rings by Distance Between Rings from Copy/Pasted Text
- Create Range Rings from CSV, Spreadsheet, Database, or Features
- Delete Range Rings
- Update/Edit Range Rings
- Move Range Sets by Entering Center Coordinate
- Move Single Range Set by Click and Drag
- Move Multiple Range Sets by Click and Drag

Chapter 7: Working with Map Coordinates

- Change Default Coordinate Format
- Change the Displayed Input Coordinate Format
- Copy Coordinate by Clicking Map (Right-Click)
- Customize Copy Coordinate