Table of Contents

Esri resources for your organization

Course introduction

Course introduction
Course goals
Installing the course data
Training Services account credentials
Icons used in this workbook
Understanding the ArcGIS platform

1 Welcome to GIS

Lesson introduction
GIS history
Your map history
GIS components
GIS capabilities
Exploring GIS capabilities
More than just maps
The geographic approach
What is ArcGIS?
Explore a story using ArcGIS
Exercise 1: Use ArcGIS
  Sign in to ArcGIS Pro
  Open an ArcGIS Pro project
  Navigate a map
  Sign in to ArcGIS Online
  Search for a web map
  Navigate a web map
Lesson review
Answers to Lesson 1 questions

2 GIS data

Lesson introduction
Your locational data
Spatial data
Working with tables
Vector data
Raster data
Imagery
Representing real-world objects
Data collection methods
Searching for geographic data in ArcGIS
Choosing GIS data
Exercise 2: Explore data collection
  Prepare a web map
  Add layers from ArcGIS Online
  Add tabular data
  Add layers from ArcGIS Living Atlas of the World
Lesson review
Answers to Lesson 2 questions

3 Managing GIS data

Lesson introduction
Data management with geodatabases
Adding data to a map
Metadata
Exercise 3A: Explore data management
  Open an ArcGIS Pro project
  View the properties of a layer
  Use the Catalog pane to organize data
  Review metadata
  Create a group layer to organize the Contents pane
Web layers
Using web layers
Sharing data in ArcGIS
Exercise 3B: Share data in ArcGIS
  Share data as a web layer
  View a web layer in ArcGIS Online
Lesson review
Answers to Lesson 3 questions

4 Exploring coordinate systems

Lesson introduction
How is data represented on a map?
Coordinate systems
The importance of coordinate systems
Map projections and distortion
Explore spatial distortion
Exercise 4: Work with coordinate systems
  Prepare your ArcGIS project
  Examine the coordinate system of a map
5  **Mapping and visualization**

Lesson introduction
Not all maps are created equal
Map components
Identify effective map elements
Exercise 5: Use ArcGIS for mapping and visualization
  - Open an ArcGIS Pro project
  - Change symbology
  - Use scale ranges to control visibility
  - Use pop-ups
  - Open a layout
  - Explore layout elements
Visualize map layers in 3D
Use imagery for visualization
Lesson review
Answers to Lesson 5 questions

6  **Spatial analysis**

Lesson introduction
What is spatial analysis?
Spatial analysis workflow
Types of spatial analysis
Identifying types of analysis
Exercise 6A: Use ArcGIS to explore 3D analysis
  - Prepare a web scene
  - Analyze building height
  - Analyze daylight
Performing analysis in ArcGIS Pro
Exercise 6B: Use ArcGIS Pro for spatial analysis
  - Prepare an ArcGIS Pro project
  - Use tools to prepare data for analysis
  - Run a model
  - Review the analysis results
  - Visualize a chart
Performing analysis in ArcGIS Online
Exercise 6C: Use ArcGIS Online for spatial analysis
  - Add data to a web map
Run a tool to perform overlay and statistical analysis
Review the analysis results
Ideas for spatial analysis
Lesson review
Answers to Lesson 6 questions

7 Putting GIS to use

Lesson introduction
The geographic approach review
Applying the geographic approach
Exercise 7: Identify shelter locations using ArcGIS
  Prepare an ArcGIS Pro project
  Change basemap imagery
  Add data to the map
  Change symbology
  Perform analysis
  Share as a web map
  View a map in ArcGIS Online
Sharing results with ArcGIS
How will you use GIS?
Answers to Lesson 7 questions

Appendices

  Appendix A: Esri data license agreement
  Appendix B: Acknowledgments
  Appendix C: Answers to lesson review questions
  Appendix D: Additional resources