



National Preservation Institute

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GIS for Cultural Resources: An Introduction

Seminar Overview

Review introductory geographic information system (GIS) concepts and functionality, combining spatial technologies and database management systems in the area of historic preservation. Learn how to use GIS software through hands-on exercises for identification, evaluation, protection, and preservation of cultural resources. From assisting with inventories, to mapping historic districts and battlefields, to mitigating the impact of disasters on historic areas, GIS technology can be used to provide a better basis for planning and decisionmaking for the nation's heritage.

Agenda

This seminar offers an overview of basic GIS concepts and the software, as well as providing hands-on experience using ArcGIS® 10.x. Covering the basic functionality of the application, the class explores the display and analysis capabilities of GIS in a variety of situations using cultural resource examples. Following the class, students should be comfortable navigating in the ArcGIS® 10.x interface, as well as displaying, creating, editing, querying, and analyzing spatial or tabular data through the software, in addition to producing paper maps and charts for presentation. Designed for users new to GIS, and new to ArcGIS® 10.x, no prior experience is necessary.

Topics covered include:

- Overview of GIS concepts
- Displaying and manipulating spatial data
- Working with tabular data in relationship to spatial data
- Creating and editing spatial data
- Performing analysis and formulating queries with both spatial and tabular data
- Creating presentation maps and documents

Day One

Introduction to GIS

- What is GIS, and what comes with ArcGIS® 10.x?
- What are spatial relationships?
- Exploring the ArcGIS® 10.x interface
- Examining ArcGIS® 10.x components (ArcMap, ArcCatalog, ArcToolbox)
- Using the ArcGIS® 10.x help system

Displaying Data

- Exploring the ArcMap interface
- Organizing the Data View
- Map documents, data frames and data layers
- Moving around the map display
- Changing layer symbology
- Changing Symbol properties
- Labeling features
- Controlling display
- Creating layer files

Querying Data

- Identify, Find, and Measure
- Map tips and hyperlinks
- Select by attributes
- Select by location
- Interactive selection

Continued . . .

Working with Spatial Data

- Linking features and attributes
- Spatial data formats
- Exploring the ArcCatalog interface

Working with Tables

- Basic table properties
- Basic table manipulation
- Building relationships between tables
- Creating graphs from tables
- Creating reports from tables

Day Two

Editing Data

- Managing edit sessions
- Edit tasks
- Sketching features
- Creating new features
- Editing attributes
- Calculating attribute values

Understanding Geographic Data

- Georeferencing
- Coordinate system components
- Viewing projection information
- Working with projections
- Changing projections

Creating Spatial Data

- Creating new shapefiles
- Creating data from X,Y coordinates
- Geocoding addresses

Presenting Data

- Basic cartographic concepts
- Creating maps in ArcMap
- Preparing the layout page
- Adding map elements
- Creating map templates

Creating a GIS Project

- Steps in creating a GIS project
- Identify project objectives
- Create a project database
- Perform analysis
- Present results