GeoData

Advanced ArcGIS 10

COURSE OUTLINE

This course builds on the delegate's existing knowledge of the underlying principles and methods of Geographical Information Systems (GIS). It comprises a series of presentations and computer-based practical sessions using ESRI's ArcGIS software with example data sets taken from a variety of fields. The basic functionality of the main elements of ArcGIS (ArcMap, Catalog and ArcToolbox) is expanded upon and some extensions are introduced. Topics covered include: geodatabases; advanced labelling and symbology; advanced editing; using model builder; GIS customization with Python; extensions, online data, manipulating coordinate systems and spatial analysis/statistics tools.

This course is intended for those who have completed our Introduction to ArcGIS course or have equivalent knowledge and experience.

By attending training with GeoData you can accrue CPD points towards the Chartered Geographer accreditation.
All of our courses are validated under the Association for Geographic Information CPD scheme and the GIS Certification Institute GIS Professional (GISP) Award.

ANTICIPATED COURSE OUTCOMES / ACHIEVEMENTS

Aims and objectives

- To develop delegate's understanding of the fundamental concepts of GIS including its strengths and limitations.
- To widen delegate's experience beyond the core functionality of ESRI's ArcGIS software package.
- To expand on the skills needed to obtain, import, manipulate, analyse, interpret, manage and output spatial data in order to investigate topics in the delegate's area of interest.
- To demonstrate more advanced real-world uses of GIS.

Learning outcomes - by the end of the course, delegates will have a knowledge and understanding of:

- Working with geodatabases including importing existing data sets
- Advanced labelling and symbology including using annotation
- Basic automation using ModelBuilder and Python
- Advanced editing functions including spatial adjustment
- Basic customization of ArcGIS
- The basics of some ArcGIS extensions (Spatial Analyst and 3D Analyst) are demonstrated.
- Online mapping and sharing data.
- Manipulating Coordinate Systems in ArcGIS
- Spatial Analysis concepts and tools

For further information please contact:
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Day 1

1 - The GeoDatabase

What is a GeoDatabase?
GeoDatabase Terminology
Benefits of GeoDatabases
Creating Attribute Domains
Creating Subtypes
Raster: Mosaic and Catalog
Metadata

Exercise 1a – Creating a File GeoDatabase
Exercise 1b – Creating a Raster Catalog

2 - Manipulating Coordinate Systems

Map Coordinates
The Shape of the Earth
Modelling the Earth
Coordinate Systems (Geographic, Projected)
Map Projections
Coordinate system parameters in ArcGIS

Exercise 2 – Manipulating coordinate systems

3 - Advanced Editing

Editing Tools
  Move, Split, Construct parallel,
  Merge, Buffer, Intersect, …
Using Templates
Advanced Editing functions
Topologies
CAD-Style editing
Calculating the Centroid of polygons
Advanced Field Calculation

Exercise 3a – Advanced Editing
Exercise 3b –Advanced Field Calculation

4 – WebMapping

Packages
ArcGIS.com
Sharing data online
Embedding data into a website

Exercise 4 – Sharing data using ArcGIS.com and web mapping

5 - Labelling and Symbology

Label Styles
Converting to Annotation
Advanced Symbology
Custom Symbols

Exercise 5a – Labelling and Advanced Symbology

Day 2

6 – Spatial Analysis

Data Quality
Spatial Statistics
Union, Intersect, Spatial Join
Case Study

Exercise 6 – Spatial analysis case study

7 – Extensions

Overview
Loading an Extension
3D and Spatial Analyst Extensions
Other ESRI Extensions
3rd Party Extensions

Exercise 7a – Raster Analysis
Exercise 7b – Modelling 3D data

8 – ModelBuilder

Overview
Model Elements
Iterators
Inline variable substitution
Preconditions
Providing Help

Exercise 8 – Create a toolbox and model

9 – Customisation / Python

Toolbars and Customisation
Import Python script as a tool
Python Command line Window
Python IDE
Examples

Exercise 9a – Customise the ArcMap GUI
Exercise 9b – Python
Exercise 9c - Wiring a Python Script into ArcToolbox

10 – Consultancy Exercise

Delegates will bring together all their new skills to complete a consultancy task.

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