

ArcGIS Model builder - Streamlining data processing

COURSE OUTLINE

This practical, one-day hands-on course provides an introduction to the ArcGIS model builder and how you can use it to streamline data processing tasks. You will be introduced to ArcToolbox and gain a deeper understanding of ArcMap geoprocessing tools. You will learn how to construct a model, make it loop, expose parameters to turn it into a Model tool for

embedding and integrating Python scripts into the model builder environment. The course comprises hands-on exercises each introduced with a short presentation.

This course is intended for regular users of ESRI's ArcMap software who wish to improve their technical knowledge to automate data processing.

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 widen delegate's experience beyond the core functionality of ESRI's ArcGIS software package by introducing the concept of data processing automation.
- Learn about the geoprocessing environment and its integration with model builder.
- Develop the skills required to build and run geoprocessing models.
- Understand the anatomy of the geoprocessing tool

Learning outcomes - by the end of the course, delegates will understand how to:

- Create a Toolbox in ArcToolbox.
- Change application level Geoprocessing options.
- Construct a model.
- Loop a model using an iterator and control the order of operations.
- Convert a model to a *Model Tool* and embed within another model.
- Embed existing Python scripts and expose as a *Script Tool* to the geoprocessing environment.

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Presentations and exercises

1 - Introduction to the ArcToolbox

What is model builder and why use it?
ArcToolbox
Find existing tools

Exercise 1 – Creating a Toolbox in ArcToolbox

2 – The Geoprocessing tool

The anatomy of a Geoprocessing tool
Using Help
Environment settings
IN_MEMORY workspace

Exercise 2 – Exploring a geo-processing tool

3 – Results and Geoprocessing options

Control tool behaviour:
Overwrite
Add to display
Background processing
Results Window
Re-Run
Open
Copy as python snippet

Exercise 3 – Results and geoprocessing options

4 – Model builder application

Model builder
Elements of a model
Run a model
Changing the properties on an element

Exercise 4 – Create a model

5 – Run a model multiple times (looping)

Loop a model
The iterator
In-line substitution

Exercise 5a – create a model that uses an Iterator

Exercise 5b – Use an Iterator to split data into separate datasets

6 – Controlling the order of processing

Use preconditions to set processing order

Exercise 6 – Controlling the order of processing

7 – Convert a model to a Model Tool

Convert a hardwired model into a generic Model Tool.
Rename and reorder parameters
Set a filter
Enhance the model with documentation

Exercise 7 – Expose parameters, make the model generic

8 – Embedding models

Learn why and how to embed a model within another

Exercise 8 – Embedding models within models!

9 – Create a Python Script Tool

Learn why and how to expose an existing Python script to the model builder environment

Exercise 9 – Wiring up python scripts to be used in model builder

10 – Trouble shooting and advanced topics

A short end of day presentation demonstrating a few examples of advanced topics and when things go wrong...