

ArcGIS Pro Model builder - Streamlining data processing

COURSE OUTLINE

This practical, one-day hands-on course provides an introduction to ArcGIS Pro model builder and how you can use it to streamline data processing tasks. You will be introduced to GeoProcessing Toolbox and gain a deeper understanding of ArcPro 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 ArcPro 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. This course has been validated under the Association for Geographic Information CPD Scheme and it has been assessed for Royal Geography Society with IBG (RGS-IBG) Chartered Geographer (CGeog) accreditation (5 hours of CPD points).



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 ready to store models.
- Change tool environment settings and 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.

ArcGIS Model builder - Streamlining data processing

Presentations and exercises

1 - Introduction to the Geoprocessing Panel

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

Exercise 1 – Creating a Toolbox in ArcPro

2 – The Geoprocessing tool

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

Exercise 2 – Exploring a geo-processing tool

3 – Results and Geoprocessing options

Control tool behaviour:

- Overwrite
- Add to display
- Background processing

Disable automated grouping behaviour
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
Grouping elements

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

Learn about how preconditions and logic tools can be used to control order of processing within a model

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 model

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...