

Introduction to QGIS

COURSE OUTLINE

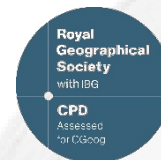
This course introduces the underlying principles and methods of Geographical Information Systems (GIS). It examines the processes involved in the capture, storage, manipulation, analysis, presentation and output of digital geographical data in a GIS and provides opportunities for the development of practical skills in processing data using a leading Open Source GIS software package, QGIS.

The course comprises a series of presentations and computer-based

practical sessions using QGIS software with example data sets taken from a variety of fields. The main elements of the QGIS user interface are introduced and topics covered include: data management, data visualisation, analysis, data presentation and reporting.

This course is intended for those who have little or no GIS knowledge and who wish to use **FREE software** developed by the Open Source community as opposed to a proprietary commercial package.

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 provide delegates with an appreciation of the fundamental concepts of GIS including its strengths and limitations.
- To explain the concept of Open Source software
- To introduce the core functionality of QGIS software package.
- To teach the fundamental 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 real-world uses of GIS.

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

- what GIS is; what spatial data is; raster and vector data models
- the core tasks involved in a GIS analysis e.g. data acquisition and input; data storage and management; data manipulation and analysis; and data presentation and output
- the core functionality of QGIS
- importing data from various sources, including scanned paper maps
- handling tables including selections and queries
- creating and editing spatial data
- the steps required to produce paper maps from base data
- basic geoprocessing tasks e.g. buffering and clipping

Introduction to QGIS

1 - Introduction to GIS and Open Source GIS

What is GIS?
What is Open Source GIS?
Spatial Data
Types of questions a GIS can answer
GIS Tasks
GIS Data Types
Mapping in Layers
Coordinate Systems
GIS Applications

2 - Introduction to QGIS

QGIS - Some History
The user interface
Navigating around a map
Project Properties
Introduction to Layers and Attribute tables
The QGIS File Browser
The Print Composer
Introduction to Plugins, Bookmarks and File Types
Help!

Exercise 2 - Getting Started

3 – Using QGIS

Identifying features
Attribute Tables and Layer Properties
Thematic Mapping
Saving and importing symbologies
Labelling
Working with Scales
Map Projects

Exercise 3a – QGIS Basics
Exercise 3b – Symbolising data

4- Data Management and Data Sources

Overview
Metadata (and Finding Data)
Data Management
Data Sources

Exercise 4 – Data Management

5 - Using Tables

Table Types
Creating Tables
Adding fields and records
Editing values and table layouts
Sorting records
Generating Field Statistics and Table Summaries
Joining and Relating tables

Exercise 5 - Using Tables

6 - Selections and Queries

Identifying Features
Select Features Interactively
Selection by Criteria - Query Builder
Location-based Selections
Exporting selected data

Exercise 6 - Selections and Queries

7 - Creating and Editing Layers

Creating new data
Shapefiles
GeoPackages
Spatialite layers
Editor Toolbar
Adding Attributes
Editing layers
Snapping

Exercise 7 – Creating and Editing Layers

8 - Producing Maps

What is a Print layout?
Using the Print composer
Working with Map Elements
Graphic Elements
Adding an overview map
Using Templates
Printing the Map

Exercise 8 – Producing a Map

9 - Geoprocessing & Other Tools / Extensions

GeoProcessing
Spatial Joins
Advanced Geoprocessing

Exercise 9 – Analysis and Geoprocessing