GeoData

Advanced QGIS Classroom based

COURSE OUTLINE

This classroom based course builds on the delegates existing knowledge of QGIS. It comprises a series of presentations, demos and computer practical sessions using **FREE open source** GIS software. The example datasets are taken from a variety of fields.

Delegates are introduced to advanced analysis techniques using both raster and vector data. The course includes a basic introduction to the PostgresSQL/PostGIS enterprise database as well as the Python programming language. The course is designed for existing users of QGIS that want to expand their knowledge and carry out higher-level analysis.

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

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 (10 hours of CPD points).

ANTICIPATED COURSE OUTCOMES / ACHIEVEMENTS

Aims and objectives

- To develop delegates understanding of the fundamental concepts of GIS including its strengths and limitations.
- To expand on the concept of Open Source software
- To introduce the more advanced functionality of QGIS software package.
- To teach the advanced 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:

- Working with spatial databases including importing existing data sets.
- Manipulating coordinate systems in QGIS.
- Advanced field calculations.
- Working with topologies.
- Vector processing including tools such as union.
- Raster processing and how to use the raster calculator.
- Graphical Modeller.
- PostGIS databases.

For further information please contact:
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Session	Description				
Session 1: Group training **9:30 – 4:30**	**1 – Spatial databases** Recap on GIS data types SpatiaLite databases PostgresSQL / PostGIS ESRI file geodatabases Shapefiles & GeoPackages Creating drop down menus (Value Map) *Exercise 1a – SpatiaLite databases* *Exercise 1b – PostGIS databases*	**2 – Manipulating coordinate systems in QGIS** Fundamentals of coordinate systems Datums Parameters in QGIS What system is best? *Exercise 2 – Manipulating coordinate systems*	**3- Introduction to Python** Python as a language Python in QGIS Python Console Syntax Pitfalls *Exercise 3 – Introduction to python in QGIS*	**4 – Advanced Field Calculations, Expressions and Actions** Field Calculator refresher Advanced Field calculations Functions Expressions Actions *Exercise 4 – Field calculation*	**5 – Advanced Editing** Editing recap Snapping Feature topology Topology checker Reshaping features Splitting features Advanced digitising (CAD style) Forms and Field widgets *Exercise 5– Advanced digitising*
Session 2: Group training **9:30-4:30**	**6 – Advanced Symbologies, Labelling and Presentation of data** Labelling using expressions Data defined labelling Matching label colour to features Setting label properties Label engine Label priority Creating an Atlas and dynamic maps *Exercise 6a – Advanced symbologies and Presentation of data* *Exercise 6b - Creating an Atlas*	**7 – Vector processing in QGIS** Processing framework Bath processing Geoprocessing tools *Exercise 7 – Spatial analysis case study*	**8 – Raster processing in QGIS** Raster menu Raster calculator Interpolation Using GRASS *Exercise 8 – Interpolation and raster algebra*	**9 – Graphical Modeller** What is Graphical Modeller? Defining inputs Algorithms Saving and loading a model Editing a model Documenting a model *Exercise 9 – Graphical modeller*	**10 – GIS Clinic** Time to discuss GIS topics and questions of interest to the group with the Trainer

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