Urban Big Data Centre (UBDC) Summer Training Programme 2016

‘Introduction to Geographic Information Systems (GIS) Using ArcGIS’

Course instructor: Dr David McArthur, UBDC, University of Glasgow
Course duration: 1 day (Tuesday 2nd August 2016, 9:30am – 4:30pm, lunch break included)
Course location: Jura teaching lab, Level 4 Annexe, Glasgow University Library
Audience: Social scientists, students, practitioners
Pre-requisite knowledge: No prior knowledge of GIS necessary

Course summary:

The importance of understanding the spatial dimension of data has long been understood. Despite this, the spatial aspects are often ignored; in part due to a lack of knowledge and skill about how to process it. This issue has become more pressing in recent years, which have seen a massive expansion in the quantity of data available. At the same time, new methods and software have opened up opportunities for analysing spatial data. In this short course, participants will be introduced to Geographic Information Systems (GIS), a powerful tool for managing, storing and analysing spatial data. The purpose of this course is to familiarise participants with what a geographic information system is and the potential for it to be used for informed decision-making.

Outcomes:

Participants will learn how to:

- Describe the key features of a GIS and the sorts of data which can be used in such a system
- Import data into a GIS to visualise it as a map
- Apply a variety of geoprocessing operations
- Explore data to gain insights into its structure
- Perform basic data analysis techniques which exploit the powerful features of a GIS
Course content:

- Representing the world with spatial data: raster and vector data.
- Important sources of mapping data: Ordinance Survey, Edina and Digimap.
- An introduction to some popular GIS software with a focus on the ArcGIS suite of products.
- Getting data into ArcGIS.
- Popular online data sources: census, SHS, BHPS etc.
- Merging data in ArcMap and displaying it
- Simple geoprocessing tasks: selecting, clipping
- Interpolation methods for point data
- A few words on spatial analysis