

Unit 59: Geographical Information Systems in Construction

Unit code: Y/600/0390

QCF Level: 3

Credit value: 10

Guided learning hours: 60

Unit aim

This unit aims to give learners knowledge of the processing and application of spatial data, understanding of the interpretation of statistical data to produce maps, and the knowledge to develop skills to process and present spatial data in graphical form.

Learning outcomes and assessment criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes	Assessment criteria
1 Know the various types of processes and applications of spatial data	1.1 Identify different types of spatial data
	1.2 Describe sources of spatial data
2 Understand how to interpret statistical data for use in map and computer applications	2.1 Interpret statistical data for use in map and computer applications
	2.2 Explain the applications of GIS technology
3 Be able to process spatial data and images	3.1 Outline processes involved in interpreting spatial data and images
	3.2 Present spatial data in a graphical format
4 Be able to present spatial data in a graphical form	4.1 Identify the components of computer-based systems for use in the presentation of graphical formats
	4.2 Retrieve relevant location maps from internet-based mapping websites

	4.3 Present computer data in a different graphical format
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Unit content

1 Know the various types of processes and applications of spatial data

Types of data: raster versus vector data; types of map; scales; grids; projections; scanning; digitising; field data collection and input; data formats; data storage; data transfer; transfer format

Sources of spatial data: statistical data; nationally held spatial data such as postcodes; remote sensing eg satellites, aircraft platforms, sensors, types of imagery, ground checks

2 Understand how to interpret statistical data for use in map and computer applications

Statistical data: nationally held spatial data eg local authorities, central government, census data; thematic maps

Map and computer applications: for central government; Her Majesty's Land Registry (HMLR); census data; local government eg planning, housing; Land Management Information Services (LAMIS); utilities eg gas, electricity, water, telecommunications; property gazetteers; facilities management; planning eg land use, agriculture, resources, forestry management; forecasting and monitoring changes; socio-economic applications eg targeting recipients; retail applications eg locations of retail establishments

3 Be able to process spatial data and images

Processing data and images: data retrieval from databases; database management systems; map interpretation; interpretation of statistical data; data processing; map generalisation; attribute data; monitoring of data sets; links from digital maps to databases; data editing; graphics systems; image enhancement; polygonisation; analysis of data; automated feature recognition; pattern recognition; layering of data; expert systems

4 Be able to present spatial data in a graphical form

Components: hardware eg interactive displays, hard-copy devices; software; internet-based mapping websites

Graphical presentation: spatial data to be presented; components used to present data graphically

Spatial data to be presented: statistical output; products; map production; automated cartography; Ordnance Survey digital maps; data in digital form; effectiveness of different output types in sites for location finding, route planning, land-use surveys