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Introducing Mapping, Spatial Data and GIS

30 December 2024 - 3 J____ 025

Milan (Italy)

Introducing Mapping, Spatial Data and GIS

course code: D9467 From: 30 December 2024 - 3 January 2025 Venue: Milan (Italy) - course Fees: 4500 Euro

Overview:

Investigate the power of maps and spatial data to document and illustrate local and global issues. Learn how to use Geographic Information Systems (GIS) to explore the world around you and share ideas. Apply GIS principles and tools to create your own maps from freely-available online spatial data.
This course requires downloading of free software, please note you cannot study the course without this.

After the course you will able to:

- Discover the diverse uses of mapping, Geographic Information Systems (GIS) and spatial data, and how they underpin decision-making in every aspect of our lives.
- Explore and critically appraise maps to gain a better appreciation of the world around you. Learn how to use free open-source software (Quantum GIS) to import.
- Display and analyses spatial data.
- Collect and integrate spatial data from a variety of sources.
- Experience realistic tasks in the context of international case studies.
- which range from resource management.
- Wildlife conservation and leisure hiking to archaeology and disaster relief.
- Apply your learning to create maps which illustrate your own interests or hobbies Based on sound
- cartographic principles.

Programme details:

- What are spatial data and Geographic Information Systems?
- Explore how maps and spatial analysis pervade our world, and consider the use of maps in the media. Install the GIS software and take your first steps in displaying spatial data.
- Who uses spatial data, maps and GIS, and what for?
- Consider how GIS is used in different industries and leisure activities. Encounter the power and versatility of maps and GIS to illustrate patterns, exploring osprey migration routes in a wildlife case study.

Understanding spatial reference systems:

Learn how to refer to the spatial location of objects on the earth's surface, and understand how this translates to locations on a flat map. View and overlay data from a range of spatial reference systems, based on an archaeological case study of Stonehenge artefacts.

Representing spatial features:

Grasp the difference between discrete spatial objects and continuous surfaces, and learn the characteristics of the two primary data formats (vector and raster) which represent them. Practice

working with both data types in a resource management case study on an English farm.

Interpreting maps:

Interpret the symbols, contours and scale on a topographic map, and learn how to navigate using a compass. Plan travel routes and camping locations for a wilderness hike through Monongahela National Forest, USA, as part of a leisure case study.

Working with raster layers:

xperience the power of remotely sensed imagery to visualize environmental patterns. Manipulate raster layers in a disaster relief case study, to assess the extent of catastrophic flooding in Pakistan.

Working with vector layers:

Generate and edit your own vector data by hand-digitizing, and add non-geographic information to your new layers. Extend the Pakistan disaster relief case study by calculating the area affected by flooding.

Introduction to symbology and cartography:

Explore the art of cartography, and discuss how to communicate your message to a specific audience. Change the way map features are displayed to identify spatial patterns in health risks in Togo, an international development case study.

Making maps:

Learn how the key elements of a map (scale bar, legend, graticule) allow viewers to interpret your map and understand your message. Apply cartographic principles in a tourism case study to create and export your own map of tourist attractions in Melbourne, Australia.

Introduction to spatial analysis:

Discover how the utility of GIS extends far beyond map-making. Explore concepts in spatial analysis that will allow you to create new data, identify patterns, and support future decision-making. Propose the location of a new recycling facility in an urban planning case study.