

Engineering & Planning Transportation Using Geographic Information Systems

Duration: 5 Days

Language: en

Course Code: PI1-104

Objective

Upon completion of this course, participants will be able to:

- Understand the functions and benefits of a GIS system.
- Utilise spatial analysis gathered by accurate data collection to plan your routes.
- Develop a heat map of high-traffic hot spots.
- Create geo-referencing techniques that work well for transporting goods.
- Devise a database that assists in your travel planning.
- Identify processes to save on a budget based on transport routing.

- Understand the importance of incident reporting and use the results to devise safer travel initiatives.
- Use GIS to create flexibility within a transport business by enabling intelligent route changes.

Audience

This course would be ideal for anyone within the transport industry, particularly roles with a focus on engineering or cost-effective routing. However, it would be particularly beneficial for:

- Data Analysts
- Project Managers
- Engineers
- Traffic Safety Professionals
- Traffic & Transportation Managers
- Planning Managers
- Highway Designers
- Traffic Change Researchers
- Technicians in Traffic Management

Training Methodology

This course is made up of a collection of adult learning styles to aid understanding of the benefits and uses of Geographic Information Systems.

You will be presented with a variety of videos to share best practice and discover GIS usage within businesses. You will also take part in practical activities to review data and enhance your decision-making and critical thinking skills by producing group projects to improve the traffic network within a set budget. Group discussions will help to understand new ideas and create forward-thinking solutions to reduce incidents around high-traffic hotspots.

Summary

Geographic Information Systems (GIS) are widely used worldwide to plan safe transportation and understand the risks and effects of road and vehicle enhancements and changes.

GIS have helped countless researchers and businesses to design strategic procedures for development and growth by increasing the visibility of transport locations, reducing the costs of monitoring traffic and vehicles remotely, and allowing for more accurate route planning and accident analysis to mitigate risks to vehicle company financials and travellers.

GIS can help you to develop a foolproof strategy for road safety and cost-effective travel by allowing you to make data-based decisions regarding route analysis and planning and vehicle upkeep and maintenance. Traffic patterns are constantly changing, and it's essential to constantly review safety procedures and create the most cost-effective transport systems and processes to ensure the greatest return on investment for road changes and vehicle modelling, as well as to develop continuous improvement in travel.

Course Content & Outline

Section 1: Geographic Information Systems 101

- What is a GIS?
- How can GIS assist with transport studies?
- The major functions and flaws.

Section 2: Understanding Maps

- Raster vs. Vector data.
- The ESRI shapefile and formatting.
- Using maps for navigation.
- Collecting Census units.
- GPS systems - Global Positioning.

Section 3: Accurate Data Collection

- How to collect data.
- What type of data do you need?
- Acquiring useful data.
- ArcMap usage.
- Creating a framework from data integration.
- Collecting census data.

Section 4: Processing Data & Drawing Outcomes

- Developing a database.
- Polygon and line data and what it tells you.
- Developing a data library.
- Using transportation data and analytics to draw conclusions.
- Labelling graphics.
- Classifying data for later use.

Section 5: Geospatial Analysis & Identifying Hotspots

- Geospatial data and its uses.
- Developing crash analyses.
- How hotspots for incidents can help you shape change.
- Continuous data reporting and categorisation.
- Geospatial data identification and attributes.
- Creating relation tables for spatial joining.

Section 6: Incident Reporting & Avoidance

- Fishnet analysis.
- Kernel Density Estimation.
- Deciphering patterns.
- Why do incidents happen?
- Accurate data vs. actual incident reporting - how accurate are your records?

Section 7: Planning for Change

- Introduction to butterfly features.
- Using spatial analysis to plan for change.
- Hypothesising based on hotspot analysis.
- Creating a strategic model for change.
- Risk vs. benefit.
- Budgeting and cost-benefit analysis.
- Framework for rollout.
- Monitoring, reviewing, and amending changes.

Certificate Description

Upon successful completion of this training course, delegates will be awarded a Holistique Training Certificate of Completion. For those who attend and complete the online training course, a Holistique Training e-Certificate will be provided.

Holistique Training Certificates are accredited by the British Assessment Council (BAC) and The CPD Certification Service (CPD), and are certified under ISO 9001, ISO 21001, and ISO 29993 standards.

CPD credits for this course are granted by our Certificates and will be reflected on the Holistique Training Certificate of Completion. In accordance with the standards of The CPD Certification Service, one CPD credit is awarded per hour of course attendance. A maximum of 50 CPD credits can be claimed for any single course we currently offer.

Categories

Engineering, IT & Computer Application, Transport

Tags

Transportation, Geographic Information Systems, GIS

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