

€ TRAINING

GIS Applications in Transportation
Engineering and Planning



17 - 21 June 2024
Madrid (Spain)



GIS Applications in Transportation Engineering and Planning

REF: L1929 DATE: 17 - 21 June 2024 Venue: Madrid (Spain) - Fee: 5850 Euro

Introduction:

This training program is designed to equip participants with advanced knowledge and practical skills in applying Geographic Information Systems GIS to transportation system engineering and planning. It empowers them to implement GIS solutions effectively and drive innovation in transportation planning.

Program Objectives:

At the end of this program, participants will be able to:

- Understand the fundamental principles and applications of GIS in transportation.
- Develop and manage GIS-based transportation projects.
- Utilize GIS for data analysis, visualization, and decision-making in transportation planning.
- Integrate GIS with other transportation management systems.
- Apply GIS tools to improve transportation safety, efficiency, and sustainability.

Targeted Audience:

- Transportation planners and engineers.
- Urban and regional planners.
- GIS professionals.
- Government officials in transportation departments.
- Academics and researchers in transportation and GIS fields.

Program Outlines:

Unit 1:

Introduction to GIS in Transportation:

- Overview of Geographic Information Systems GIS.
- Key components and functionalities of GIS.
- Benefits and challenges of using GIS in transportation.

- Case studies of successful GIS applications in transportation.
- Current trends and future directions in GIS for transportation.

Unit 2:

GIS Data Collection and Management:

- Methods for collecting transportation-related GIS data.
- Data sources: remote sensing, surveys, and public databases.
- Data management and storage techniques.
- Ensuring data accuracy and quality in GIS projects.
- Legal and ethical considerations in GIS data collection and usage.

Unit 3:

Spatial Analysis and Visualization in GIS:

- Principles of spatial analysis in transportation.
- Tools and techniques for spatial data analysis.
- Visualization of transportation data using GIS.
- Creating maps and other visual outputs for transportation planning.
- Applications of spatial analysis in traffic management and route optimization.

Unit 4:

GIS Integration with Transportation Systems:

- Integrating GIS with transportation management systems TMS.
- GIS applications in Intelligent Transportation Systems ITS.
- Using GIS for real-time traffic monitoring and control.
- Enhancing public transportation through GIS integration.
- Challenges and solutions in GIS and TMS integration.

Unit 5:

Advanced GIS Applications in Transportation Planning:

- Utilizing GIS for transportation network analysis.
- Environmental impact assessment using GIS.
- GIS-based infrastructure planning and development.
- Sustainable transportation planning with GIS.
- Future trends and innovative applications of GIS in transportation.