Transportation Data Analysis and Urban Planning Training Course

Professional Development Training Course Outline

Category	Research and Data Analysis	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In the age of smart cities and sustainable development, transportation data analysis and urban planning are at the heart of building efficient, livable, and equitable urban environments. Transportation Data Analysis and Urban Planning Training Course is designed to equip professionals, researchers, and students with advanced skills in mobility data analytics, geospatial technologies, traffic forecasting, and sustainable transportation planning. Participants will learn to leverage big data, GIS, and AI tools to make informed, data-driven decisions that shape future urban infrastructure and policy. With a hands-on, project-based approach, the course integrates real-world case studies, enabling learners to bridge the gap between theory and application.

As cities worldwide face rising challenges such as congestion, climate change, and urban sprawl, data-driven planning has become more critical than ever. This course emphasizes trending techniques in urban analytics, machine learning, transportation modeling, and smart mobility systems. Participants will gain practical experience working with open-source platforms, transportation modeling software, and cloud-based urban data dashboards. Whether in government, private consulting, or academic research, learners will be empowered to optimize transit systems, reduce carbon emissions, and promote equitable access to urban mobility.

Programme Curriculum

Transportation Data Analysis and Urban Planning Training Course

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Course Objectives

1. Understand key concepts in urban planning and transportation systems
2. Utilize GIS and geospatial analytics for mobility pattern recognition
3. Apply big data tools for transportation data analysis
4. Design sustainable urban mobility frameworks
5. Conduct traffic demand modeling and forecasting
6. Use machine learning in urban transportation data analysis
7. Evaluate environmental impacts of transportation infrastructure
8. Create visualizations with transportation datasets using Python/R
9. Analyze public transit systems using open data
10. Integrate smart mobility solutions into urban planning
11. Explore equity and accessibility in transportation networks
12. Develop data-driven transportation policies and proposals
13. Interpret real-time data from sensors and IoT in urban planning

Target Audience

1. Urban planners and policy makers
2. Transportation engineers
3. Data scientists in mobility analytics
4. City and municipal officials
5. Environmental and sustainability consultants
6. GIS specialists and geographers
7. Civil engineering students and academics
8. Nonprofit and NGO professionals working on urban development

Course Duration: 5 days

Course Modules

Module 1: Foundations of Urban Planning and Transportation Systems

- Introduction to urban transportation systems
- Evolution of urban planning practices
- Overview of transportation planning processes
- Land use and transportation interactions
- Case Study: New York City's Transit-Oriented Development
- Regulatory frameworks in transportation planning

Module 2: GIS and Geospatial Analytics in Transportation

- GIS basics for urban planning
- Spatial analysis for mobility and accessibility
- Mapping traffic and commuter patterns

- Data sources: census, GPS, mobile apps
- Case Study: Portland's Smart Mobility Maps
- Visualization techniques in GIS

Module 3: Big Data and Mobility Analytics

- Understanding big data sources in transportation
- Cleaning and preprocessing large mobility datasets
- Exploratory data analysis for traffic trends
- Correlation and clustering in urban mobility
- Case Study: Singapore’s Real-Time Transport Monitoring
- Data fusion from multiple urban sources

Module 4: Transportation Modeling and Forecasting

- Principles of traffic demand modeling
- Tools: VISUM, TransCAD, and open-source alternatives
- Scenario planning and simulation
- Forecasting future transportation needs
- Case Study: London’s Transport Demand Forecasting Model
- Model validation and calibration techniques

Module 5: Sustainable and Equitable Mobility Planning

- Climate change and transportation emissions
- Sustainable transport policy frameworks
- Planning for low-carbon urban mobility
- Assessing equity in transport infrastructure
- Case Study: Bogotá’s Bus Rapid Transit Equity Assessment
- Tools for sustainability impact evaluation

Module 6: Machine Learning in Transportation Planning

- Introduction to machine learning algorithms
- Predictive analytics for traffic congestion
- Anomaly detection in transit systems
- Real-time decision-making models
- Case Study: AI-based Traffic Optimization in Los Angeles
- Ethical and privacy concerns in data use

Module 7: Public Transit Systems and Data Visualization

- Overview of multimodal transit systems
- Using GTFS and public transport APIs
- Creating dashboards in Power BI and Tableau
- Evaluating transit performance metrics
- Case Study: Tokyo Metro’s Real-Time Passenger Flow Visualization
- Interactive web mapping for public engagement

Module 8: Smart Cities, IoT, and Urban Mobility Innovations

- Internet of Things in urban infrastructure
- Integration of connected and autonomous vehicles
- Urban mobility platforms and MaaS (Mobility-as-a-Service)
- Using sensor data in planning decisions
- Case Study: Barcelona’s IoT-based Smart Mobility Network

- Governance and cybersecurity in smart mobility

Training Methodology

- Interactive lectures using multimedia tools
- Hands-on sessions with transportation data software
- Real-world case study analysis and simulations
- Group projects and peer review presentations
- Expert webinars from urban planning professionals
- Access to cloud-based GIS and data tools

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com