Artificial Intelligence in Urban Planning Training Course

Professional Development Training Course Outline

Category	Artificial Intelligence And Block Chain	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Rapid urbanization and complex challenges like climate change, traffic congestion, and infrastructure management are compelling urban planners to seek innovative solutions. This training course introduces participants to the transformative power of **Artificial Intelligence (AI)**, **Machine Learning (ML)**, and **Big Data analytics** in modern urban planning. By leveraging these cutting-edge technologies, professionals can move beyond traditional methods to create more sustainable, resilient, and intelligent cities. Artificial Intelligence in Urban Planning Training Course is designed to provide both the theoretical foundation and practical skills needed to implement **AI-driven solutions** for real-world urban challenges.

This course is a comprehensive deep dive into the practical applications of AI in creating **smart city ecosystems**. Participants will explore how **geospatial AI**, **predictive analytics**, and **data-driven decision-making** can optimize city operations, from managing public utilities to forecasting urban growth patterns. Through hands-on exercises and real-world **case studies**, learners will gain the expertise to analyze vast datasets, develop **intelligent urban models**, and design more efficient and equitable urban spaces. This training empowers a new generation of urban professionals to lead the charge in building the cities of tomorrow.

Programme Curriculum

Artificial Intelligence in Urban Planning Training Course

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5 days

Course Objectives

1. Master **data-driven urban planning** techniques using AI.
2. Apply **geospatial AI** and **predictive analytics** for land use optimization.
3. Develop **AI-powered solutions** for smart mobility and traffic management.
4. Utilize **machine learning** for urban infrastructure and utility management.
5. Enhance **urban resilience** through AI-based disaster and climate modeling.
6. Implement **computer vision** for public safety and urban surveillance.
7. Integrate **Internet of Things (IoT)** data with AI for real-time urban monitoring.
8. Design sustainable and **green infrastructure** using AI.
9. Analyze **social and demographic data** with AI to create equitable urban services.
10. Explore the potential of **generative AI** for urban design and participatory planning.
11. Understand **algorithmic bias** and ethical considerations in AI for urban governance.
12. Create **digital twins** of cities for simulation and scenario planning.
13. Lead **smart city initiatives** and technological adoption within organizations.

Organizational Benefits

- Automates routine tasks and provides data-backed insights, leading to faster, more informed decisions in zoning, transportation, and resource allocation.
- Optimizes resource usage and maintenance schedules, minimizing operational costs for public services like waste collection, energy, and water management.
- Enables cities to proactively respond to environmental and social challenges by modeling and predicting the impact of climate events, population shifts, and infrastructure failures.
- Provides municipal governments and private firms with objective, quantifiable data to support policy development and urban development proposals, fostering transparency and accountability.
- Positions the organization as a leader in urban innovation, attracting skilled professionals and new investment for future projects.

Target Audience

1. Urban Planners and Designers
2. Architects and Civil Engineers
3. City Officials and Government Administrators.
4. Data Scientists and AI/ML Engineers .

5. Sustainability Consultants and Environmental Specialists.
6. Real Estate Developers and Urban Economists.
7. Public Sector Professionals .
8. Graduate Students and Researchers in urban studies, geography, and computer science.

Course Outline

Module 1: The AI-Powered City: Foundations of Urban AI

- **Introduction to AI & Big Data** in Urban Planning.
- Understanding the **Internet of Things (IoT)** and its role in collecting urban data.
- Overview of **machine learning algorithms** for classification, clustering, and regression.
- **Ethical considerations** and **algorithmic bias** in AI for public services.
- **Case Study:** How the city of Singapore uses a comprehensive IoT network to monitor public transport and energy consumption in real-time.

Module 2: Geospatial AI & Predictive Urban Growth

- Fundamentals of **Geographic Information Systems (GIS)** and AI integration.
- Applying **geospatial analytics** to analyze land use and zoning.
- Using **predictive modeling** to forecast population shifts and urban sprawl.
- Utilizing satellite imagery and **computer vision** for urban landscape analysis.
- **Case Study:** The use of AI in Shanghai to predict future infrastructure needs based on population density and migration patterns.

Module 3: Intelligent Urban Mobility & Transportation

- Developing **AI-driven traffic management systems** to reduce congestion.
- Optimizing public transit routes and schedules with **machine learning**.
- Implementing **smart parking solutions** and ride-sharing optimization.
- Analyzing mobility patterns using **GPS data** and social media feeds.
- **Case Study:** How a predictive AI model in London dynamically adjusts traffic lights to improve flow during peak hours.

Module 4: Sustainable Infrastructure & Resource Management

- Using AI for **smart grid optimization** and renewable energy integration.
- Applying predictive models for water management and leak detection.
- Enhancing waste management through **AI-powered sorting** and route optimization.
- AI for **predictive maintenance** of bridges, roads, and public utilities.
- **Case Study:** Copenhagen's use of AI to analyze waste bin fullness in real-time, optimizing collection routes and reducing fuel consumption.

Module 5: Urban Resilience & Climate Change Adaptation

- **AI-powered climate modeling** to assess flood risks and heat island effects.
- Using AI to predict and manage responses to natural disasters.
- Integrating AI with early warning systems for public safety.
- Developing AI models for designing **green infrastructure** and urban forests.
- **Case Study:** A project in Miami using AI to simulate sea-level rise and design resilient coastal infrastructure.

Module 6: Generative AI & Digital Twins in Urban Design

- Introduction to **Generative Adversarial Networks (GANs)** for urban design.
- Creating **digital twins** of cities for simulation and policy testing.
- Using AI for **participatory planning** and public engagement.
- Automating the generation of urban layouts and building designs.
- **Case Study:** The development of a digital twin for the city of Helsinki to test different urban development scenarios virtually before physical implementation.

Module 7: Public Safety & Civic Technology

- Applying **computer vision** for urban surveillance and crowd monitoring.
- Using **predictive policing** models to analyze crime patterns and resource allocation.
- AI for emergency response and disaster preparedness.
- Developing **AI chatbots** for civic services and public information.
- **Case Study:** A pilot program in a major U.S. city using AI to analyze public sentiment from social media to address community concerns and safety issues.

Module 8: Implementation & Governance of Urban AI Projects

- Strategies for designing and launching **AI projects** in the public sector.
- Establishing **data governance frameworks** and ensuring data privacy.
- Managing multi-stakeholder collaborations in **smart city initiatives**.
- Assessing the social and economic impact of AI-driven urban change.
- **Case Study:** A review of a successful public-private partnership in Barcelona that used AI to manage public services and improve citizen engagement.

Training Methodology

This program utilizes a blended learning approach to ensure maximum engagement and practical skill acquisition. The methodology includes:

- Interactive Lectures
- Hands-on Workshops.
- Case Study Analysis.
- Group Projects
- Guest Speaker Sessions

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
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