AI in Architectural Design Training Course

Professional Development Training Course Outline

Category	Architectural Engineering	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Artificial Intelligence is rapidly transforming the landscape of architectural design, redefining how architects conceptualize, visualize, and execute projects. By integrating advanced technologies such as machine learning, generative design, parametric modeling, and data-driven decision-making, AI empowers architects to create highly efficient, sustainable, and innovative structures. From automating repetitive drafting tasks to enabling intelligent space planning and predictive analysis, AI enhances both creativity and productivity. Tools powered by AI are now capable of analyzing vast datasets, optimizing building performance, and simulating real-world conditions, leading to smarter and more resilient architectural solutions.

In today’s competitive and technology-driven environment, adopting AI in architecture is no longer optional it is essential. The convergence of Building Information Modeling (BIM), digital twins, smart cities, computational design, and sustainable architecture has positioned AI at the core of future-ready design practices. Architects and designers who embrace AI gain a significant advantage in delivering client-centric, cost-effective, and environmentally responsible projects. AI in Architectural Design Training Course is designed to equip learners with cutting-edge skills, practical knowledge, and hands-on experience to leverage AI tools effectively in modern architectural workflows.

Programme Curriculum

AI in Architectural Design Training Course

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Course Duration

10 days

Course Objectives

1. Understand the fundamentals of Artificial Intelligence in Architecture
2. Explore Generative Design Algorithms for innovative concept creation
3. Apply Machine Learning in Design Optimization
4. Integrate AI with Building Information Modeling (BIM) workflows
5. Develop skills in Parametric and Computational Design
6. Utilize AI-Powered Visualization and Rendering Tools
7. Implement Sustainable and Green Building Design using AI
8. Analyze Big Data for Smart City Planning
9. Use AI for Space Planning and Layout Optimization
10. Learn Predictive Analytics for Building Performance
11. Explore Digital Twin Technology in Architecture
12. Enhance productivity using Automation and Workflow Optimization
13. Understand ethical implications of AI in Design and Construction

Target Audience

1. Architects and Architectural Designers
2. Urban Planners and Smart City Professionals
3. Civil Engineers and Construction Managers
4. Interior Designers and Space Planners
5. BIM Specialists and CAD Technicians
6. Students of Architecture and Design
7. Real Estate Developers and Consultants
8. Technology Enthusiasts interested in **AI in Built Environment**

Course Modules

Module 1: Introduction to AI in Architecture

- Overview of AI technologies
- Evolution of architectural design
- AI vs traditional workflows
- Benefits and challenges

- *Case Study:* AI-driven conceptual design project

Module 2: Fundamentals of Machine Learning

- Types of machine learning
- Supervised vs unsupervised learning
- Neural networks basics
- Data preprocessing
- *Case Study:* ML for design pattern recognition

Module 3: Generative Design Concepts

- Algorithmic design principles
- Design iteration automation
- Constraint-based modeling
- Optimization techniques
- *Case Study:* Generative facade design

Module 4: Parametric & Computational Design

- Introduction to parametric tools
- Visual programming (Grasshopper)
- Rule-based modeling
- Complex geometry creation
- *Case Study:* Parametric pavilion design

Module 5: AI in BIM (Building Information Modeling)

- BIM fundamentals
- AI integration in BIM
- Data-driven collaboration
- Clash detection automation
- *Case Study:* AI-enhanced BIM workflow

Module 6: AI for Sustainable Architecture

- Green building strategies
- Energy efficiency optimization
- Environmental impact analysis
- Climate-responsive design
- *Case Study:* Net-zero energy building

Module 7: Smart Cities & Urban Analytics

- AI in urban planning
- Traffic and mobility analysis
- IoT integration
- Urban data visualization
- *Case Study:* Smart city development model

Module 8: AI-Powered Visualization

- AI rendering tools

- Image generation (diffusion models)
- Real-time visualization
- Virtual reality integration
- *Case Study:* AI-generated architectural renders

Module 9: Space Planning & Optimization

- Layout automation
- Functional zoning
- User behavior analysis
- Space efficiency metrics
- *Case Study:* AI-based floor planning

Module 10: Digital Twins in Architecture

- Digital twin concept
- Real-time data integration
- Lifecycle management
- Simulation techniques
- *Case Study:* Smart building monitoring system

Module 11: Predictive Analytics

- Forecasting building performance
- Risk analysis
- Maintenance prediction
- Data modeling
- *Case Study:* Predictive maintenance system

Module 12: Automation in Design Workflows

- Task automation tools
- Script-based design
- Workflow optimization
- AI plugins and APIs
- *Case Study:* Automated drafting system

Module 13: AI Tools & Platforms

- Overview of AI design tools
- Software comparison
- Integration strategies
- Hands-on tool practice
- *Case Study:* Multi-tool design workflow

Module 14: Ethics & Future of AI in Architecture

- Ethical AI considerations
- Data privacy issues
- Human-AI collaboration
- Future trends
- *Case Study:* Ethical design scenario

Module 15: Capstone Project

- Project planning
- Concept development
- AI integration
- Final presentation
- *Case Study:* End-to-end AI architectural project

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

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	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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

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