Edge Computing for Construction Monitoring Training Course

Professional Development Training Course Outline

Category	Project Management	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

The construction industry is undergoing a digital transformation, and Edge Computing has emerged as a critical technology for real-time monitoring, predictive maintenance, and operational efficiency. By integrating IoT devices, AI analytics, and cloud-edge architectures, construction projects can achieve unprecedented levels of precision, safety, and cost optimization. Edge Computing for Construction Monitoring Training Course provides participants with practical knowledge and hands-on experience in deploying Edge Computing solutions for construction monitoring, enabling them to bridge the gap between on-site operations and digital intelligence.

Edge Computing enables organizations to process data closer to the source, minimizing latency and enhancing real-time decision-making in construction projects. Participants will explore cutting-edge tools and strategies for data acquisition, network optimization, and edge device integration. By the end of this course, learners will be proficient in leveraging Edge Computing for monitoring construction sites, improving productivity, and enhancing overall project management.

Programme Curriculum

Edge Computing for Construction Monitoring Training Course

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Course Objectives

1. Understand the fundamentals of Edge Computing and its relevance in construction monitoring
2. Learn IoT device integration for real-time data capture
3. Implement AI-driven analytics for predictive site management
4. Optimize network connectivity and edge device deployment
5. Explore cloud-edge hybrid architectures for construction operations
6. Apply real-time monitoring techniques for safety and compliance
7. Develop strategies for resource allocation using edge data
8. Integrate sensors and wearable technologies for workforce monitoring
9. Utilize Edge AI for predictive maintenance of machinery
10. Enhance project scheduling and progress tracking with real-time insights
11. Evaluate data security and privacy in edge-enabled construction systems
12. Analyze case studies of successful edge computing implementations in construction
13. Assess organizational benefits and ROI from edge technology adoption

Organizational Benefits

- Improved operational efficiency and reduced project delays
- Real-time decision-making for construction site management
- Enhanced safety compliance and risk mitigation
- Predictive maintenance to reduce equipment downtime
- Cost optimization through intelligent resource allocation
- Streamlined collaboration between field and office teams
- Data-driven insights to enhance project quality
- Reduced network latency and improved system reliability
- Better stakeholder reporting and transparency
- Competitive advantage in digital construction technologies

Target Audiences

- Construction project managers
- Site engineers and supervisors
- IT professionals in construction technology
- Data analysts and IoT specialists
- Safety and compliance officers
- Operations managers
- Architects and BIM coordinators
- Executives seeking digital transformation insights

Course Duration: 5 days

Course Modules

Module 1: Introduction to Edge Computing in Construction

- Fundamentals of Edge Computing
- Role in construction monitoring
- Comparison with cloud computing
- Key benefits for construction projects
- Challenges and limitations
- Case Study: Edge Computing implementation in a high-rise project

Module 2: IoT Devices and Sensor Integration

- Types of IoT sensors for construction
- Data collection techniques
- Integration with edge devices
- Wireless network protocols
- Real-time data transmission
- Case Study: Sensor deployment in road construction

Module 3: Edge AI and Predictive Analytics

- Machine learning at the edge
- Predictive maintenance techniques
- Anomaly detection in machinery

- AI algorithms for construction data
- Optimizing project timelines with analytics
- Case Study: Predictive maintenance of cranes

Module 4: Network and Connectivity Optimization

- Edge networking fundamentals
- Low-latency data transfer
- Network security best practices
- Load balancing techniques
- Troubleshooting connectivity issues
- Case Study: Network optimization for multi-site projects

Module 5: Cloud-Edge Hybrid Architectures

- Understanding hybrid architecture
- Benefits for construction monitoring
- Data synchronization techniques
- Cloud storage vs. edge processing
- Cost-effective architecture planning
- Case Study: Hybrid architecture in large-scale infrastructure project

Module 6: Real-Time Monitoring Techniques

- Live video and sensor monitoring
- Automated alerts and notifications
- Safety compliance monitoring
- Equipment tracking
- Dashboard analytics and visualization
- Case Study: Real-time site monitoring in commercial construction

Module 7: Data Security and Compliance

- Edge data encryption methods
- Privacy considerations
- Regulatory compliance in construction
- Secure edge device deployment

- Incident response planning
- Case Study: Securing IoT data on construction sites

Module 8: Implementation Strategy and ROI Assessment

- Developing an edge deployment roadmap
- Resource and cost planning
- Measuring ROI and KPIs
- Scaling edge solutions across sites
- Staff training and adoption strategies
- Case Study: ROI evaluation for edge computing adoption in a construction company

Training Methodology

- Instructor-led lectures and presentations
- Hands-on lab sessions with edge devices
- Case study analysis and group discussions
- Simulation exercises for real-time monitoring
- Quizzes and knowledge checks after each module
- Project-based assignments to implement learned strategies

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