# Prefabrication & Offsite Construction Training Course

Professional Development Training Course Outline

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

## Course Introduction

Prefabrication & Offsite Construction is transforming the global built environment through industrialized construction, modular building systems, and digital construction technologies that significantly improve project speed, quality, cost efficiency, and sustainability. Prefabrication & Offsite Construction Training Course is designed to equip professionals with cutting-edge knowledge in DfMA (Design for Manufacture and Assembly), BIM-integrated workflows, lean construction principles, and smart factory-based construction methods. Participants will explore how modern construction ecosystems are shifting from traditional on-site activities to controlled offsite manufacturing environments, reducing delays, waste, and carbon emissions while enhancing precision and scalability.

In today’s rapidly evolving construction industry, driven by smart cities, green building standards, carbon-neutral goals, and construction automation, prefabrication is no longer optional but a strategic necessity. This course provides a comprehensive understanding of modular construction systems, volumetric construction, panelized building systems, 3D component manufacturing, and digital twin integration. Learners will gain practical insights into global best practices, emerging technologies, and real-world applications that define the future of construction 4.0, industrialized building systems (IBS), and offsite manufacturing excellence.

## Programme Curriculum

**Prefabrication & Offsite Construction Training Course**

**Introduction**

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**Course Duration**

5 days

**Course Objectives**

1. Understand principles of Prefabrication & Modular Construction Systems
2. Master DfMA (Design for Manufacture and Assembly) methodologies
3. Apply BIM (Building Information Modeling) integration in offsite workflows
4. Evaluate Lean Construction and waste reduction strategies
5. Analyze Industrialized Construction and factory-based production systems
6. Implement Sustainable construction and carbon reduction techniques
7. Explore Digital Twin technology in construction lifecycle management
8. Assess Volumetric modular building systems and applications
9. Understand Panelized and hybrid construction systems
10. Improve project efficiency through construction automation and robotics
11. Develop skills in offsite logistics and supply chain optimization
12. Integrate smart construction technologies and IoT-enabled building systems
13. Study global best practices in MMC (Modern Methods of Construction)

**Target Audience**

1. Civil Engineers & Structural Engineers
2. Construction Project Managers
3. Architects & Urban Planners
4. Quantity Surveyors & Cost Engineers
5. Real Estate Developers
6. Government Infrastructure Planners
7. Construction Site Supervisors
8. BIM Specialists & Construction Technologists

**Course Modules**

**Module 1: Introduction to Prefabrication & MMC**

- Evolution of construction industry to industrialized systems
- Overview of Modern Methods of Construction (MMC)

- Types of prefabrication systems
- Advantages over traditional construction
- Case Study: Global market trends and adoption, UK housing MMC rollout

**Module 2: DfMA (Design for Manufacture and Assembly)**

- Principles of DfMA in construction
- Design optimization for offsite manufacturing
- Standardization and repeatability concepts
- Cost and time efficiency analysis
- Case study: Singapore Prefabricated Prefinished Volumetric Construction (PPVC)

**Module 3: BIM Integration in Offsite Construction**

- BIM-enabled prefabrication workflows
- 3D coordination and clash detection
- Digital construction documentation
- Data-driven manufacturing processes
- Case study: Crossrail BIM integration in UK mega project

**Module 4: Modular & Volumetric Construction Systems**

- 2D panelized vs 3D volumetric systems
- Structural performance considerations
- Factory production line setup
- Transport and installation techniques
- Case study: Marriott modular hotel construction system

**Module 5: Lean Construction & Waste Reduction**

- Lean principles in construction manufacturing
- Value stream mapping techniques
- Just-in-time delivery systems
- Waste minimization strategies
- Case study: Toyota-inspired lean construction adoption in Australia

**Module 6: Digital Twin & Smart Construction**

- Digital twin modeling for buildings
- Real-time monitoring and simulation
- IoT integration in prefabrication
- Predictive maintenance systems
- Case study: Smart hospital construction in Europe

**Module 7: Offsite Manufacturing & Supply Chain**

- Factory-based construction ecosystems
- Logistics and transportation planning
- Supply chain digitization
- Risk mitigation in offsite production
- Case study: Chinese rapid modular hospital deployment

**Module 8: Sustainability & Future Construction Technologies**

- Carbon-neutral construction methods
- Green building certification integration
- Renewable materials in prefabrication
- Automation and robotics in construction
- Case study: Net-zero modular housing development in Scandinavia

### 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** | 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