High-Rise Construction Techniques Training Course

Professional Development Training Course Outline

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

Course Introduction

High-Rise Construction Techniques represent the backbone of modern urban development, enabling the creation of iconic skyscrapers, mixed-use towers, and sustainable vertical cities. High-Rise Construction Techniques Training Course is designed to equip professionals with advanced knowledge in high-rise structural engineering, construction sequencing, safety management, formwork systems, and cutting-edge building technologies. As global cities expand vertically, demand for expertise in tall building construction, smart materials, BIM integration, and seismic-resistant design continues to rise rapidly.

This program delivers a comprehensive understanding of the entire lifecycle of high-rise projects from conceptual planning and foundation engineering to superstructure execution and finishing systems. Participants will gain practical insights into crane operations, slip-form techniques, core wall construction, façade engineering, and construction logistics optimization, ensuring they are fully prepared to manage complex vertical construction projects in compliance with international standards and modern sustainability requirements.

Programme Curriculum

High-Rise Construction Techniques Training Course

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Course Duration

5 days

Course Objectives

1. Master advanced high-rise building construction methodologies
2. Understand deep foundation systems and piling techniques
3. Apply structural analysis for tall buildings
4. Implement BIM (Building Information Modeling) in skyscraper projects
5. Optimize construction sequencing and project scheduling
6. Manage tower crane operations and vertical logistics
7. Apply slip-form and jump-form construction techniques
8. Ensure workplace safety in high-altitude environments
9. Design efficient reinforced concrete core systems
10. Integrate sustainable and green building technologies
11. Control cost estimation and value engineering
12. Mitigate risks in seismic and wind-load conditions
13. Improve quality assurance and inspection protocols

Target Audience

1. Civil Engineers
2. Structural Engineers
3. Construction Project Managers
4. Site Supervisors
5. Architects specializing in tall buildings
6. Quantity Surveyors
7. Real Estate Developers
8. Construction Safety Officers

Course Modules

Module 1: Fundamentals of High-Rise Construction

- Evolution of skyscraper engineering
- Types of high-rise structures
- Load transfer mechanisms in tall buildings
- Building codes and international standards
- Introduction to vertical construction challenges
- **Case Study:** Burj Khalifa structural system analysis and load distribution strategy

Module 2: Foundation Systems for Tall Buildings

- Deep piling techniques and soil investigation
- Raft and pile-raft foundation systems
- Ground stabilization methods
- Load-bearing capacity optimization
- Waterproofing and basement construction
- **Case Study:** Shanghai Tower foundation design in soft soil conditions

Module 3: Structural Systems & Core Design

- Reinforced concrete core construction
- Steel frame vs composite systems
- Lateral load resistance systems
- Shear walls and bracing systems
- Wind and seismic load design integration
- **Case Study:** Taipei 101 tuned mass damper system performance

Module 4: Construction Materials & Technologies

- High-strength concrete applications
- Lightweight and composite materials
- Smart construction materials
- Prefabrication and modular systems
- Sustainable material selection
- **Case Study:** The use of ultra-high-performance concrete in modern skyscrapers

Module 5: Formwork & Vertical Construction Techniques

- Slip-form construction technology
- Jump-form systems
- Climbing formwork systems
- Safety in vertical formwork operations
- Efficiency optimization in formwork cycles
- **Case Study:** Core construction using slip-form technique in supertall buildings

Module 6: Construction Planning & Project Management

- CPM and PERT scheduling for high-rise projects
- Resource allocation and logistics planning
- Construction sequencing strategies
- Delay mitigation techniques
- Digital project management tools (BIM 4D/5D)
- **Case Study:** Construction timeline optimization of One World Trade Center

Module 7: Safety Management in High-Rise Projects

- Fall protection systems and protocols
- Crane and lifting safety management
- Emergency evacuation planning
- Risk assessment in high-altitude work
- OSHA and international safety compliance
- **Case Study:** Safety implementation during high-rise façade installation in Dubai Marina towers

Module 8: Façade Systems & Finishing Works

- Curtain wall systems and installation
- Glass and cladding technologies
- Thermal and acoustic insulation systems
- High-rise façade maintenance strategies
- Aesthetic and architectural integration
- **Case Study:** Adaptive façade system of The Shard, London

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

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