Curtain Wall Systems Design 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

Curtain Wall Systems Design Training Course is a specialized program developed to equip architects, structural engineers, façade consultants, and construction professionals with advanced knowledge in high-performance building envelopes, façade engineering, and modern curtain wall technology. This course focuses on the integration of aesthetic architectural design, structural stability, energy-efficient glazing systems, and sustainable façade solutions used in contemporary skyscrapers and commercial buildings. Participants will gain deep insights into unitized curtain wall systems, stick systems, structural glazing, and advanced BIM-based façade modeling, aligning with global construction standards and green building certifications such as LEED and BREEAM.

In today’s rapidly evolving construction industry, curtain wall systems play a critical role in defining the identity, performance, and sustainability of high-rise structures. This training emphasizes digital design workflows, parametric façade modeling, thermal performance optimization, and wind load structural analysis. Learners will explore real-world applications of glass curtain walls, aluminum framing systems, and hybrid façade technologies, enabling them to deliver innovative and cost-effective design solutions. The course bridges the gap between theoretical façade engineering principles and practical on-site installation methodologies, ensuring industry readiness.

Programme Curriculum

Curtain Wall Systems Design Training Course

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Course Objectives

1. Master advanced curtain wall design principles and façade engineering concepts
2. Understand structural glazing systems and aluminum framing technology
3. Apply BIM-based façade modeling and digital construction workflows
4. Analyze wind load, seismic load, and structural performance of façades
5. Design energy-efficient building envelopes and thermal insulation systems
6. Implement sustainable green building façade solutions (LEED/BREEAM compliance)
7. Develop expertise in unitized and stick curtain wall systems
8. Optimize daylighting, solar control, and glare reduction strategies
9. Learn façade fabrication and installation methodologies
10. Evaluate material selection: glass, aluminum, steel, composites
11. Integrate parametric and computational façade design tools
12. Enhance skills in façade detailing, joint design, and waterproofing systems
13. Execute real-world curtain wall project lifecycle management

Target Audience

1. Architects and Architectural Designers
2. Structural and Civil Engineers
3. Façade Engineers and Consultants
4. Construction Project Managers
5. Building Services Engineers
6. BIM Modelers and Digital Designers
7. Quantity Surveyors in Construction Industry
8. Students of Architecture and Civil Engineering

Course Modules

Module 1: Introduction to Curtain Wall Systems

- Evolution of façade engineering
- Types of curtain wall systems

- Functional requirements of building envelopes
- Structural behavior of façade systems
- Industry standards and codes
- **Case Study:** Analysis of Burj Khalifa façade system overview

Module 2: Structural Design Principles

- Load transfer mechanisms
- Wind and seismic load considerations
- Structural framing systems
- Deflection and stress analysis
- Safety and performance criteria
- **Case Study:** High-rise building wind load simulation

Module 3: Material Technology in Façades

- Glass types and performance properties
- Aluminum and steel framing systems
- Composite and hybrid materials
- Thermal insulation materials
- Durability and maintenance considerations
- **Case Study:** Energy-efficient glass selection for commercial tower

Module 4: Unitized vs Stick Systems

- System comparison and applications
- Manufacturing and assembly processes
- Installation methodologies
- Cost and time efficiency analysis
- Quality control procedures
- **Case Study:** Unitized curtain wall installation in office complex

Module 5: BIM and Digital Façade Design

- Introduction to BIM workflows
- Parametric façade modeling
- Clash detection and coordination
- 3D visualization techniques
- Digital twin integration
- **Case Study:** BIM coordination for mixed-use skyscraper façade

Module 6: Thermal and Energy Performance

- Heat transfer in curtain walls
- Solar heat gain coefficient (SHGC)
- U-value optimization
- Daylight analysis and shading systems
- Sustainable façade strategies
- **Case Study:** LEED-certified green façade project analysis

Module 7: Façade Detailing and Installation

- Joint design and sealants
- Waterproofing systems
- Expansion and movement joints
- On-site installation techniques
- Quality assurance protocols
- **Case Study:** Leak prevention system in coastal high-rise building

Module 8: Advanced Façade Innovation

- Smart glass and adaptive façades
- Kinetic façade systems
- IoT integration in building envelopes
- AI-driven façade optimization
- Future trends in façade engineering
- **Case Study:** Smart façade system in sustainable commercial tower

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
21 Sep 2026	25 Sep 2026	Online	$1,000
21 Sep 2026	25 Sep 2026	Physical	$1,500
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0

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

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