Facade Engineering Systems 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

Façade Engineering Systems is a critical discipline in modern architecture and construction, focusing on the design, performance, sustainability, and structural integrity of building envelopes. Façade Engineering Systems Training Course provides in-depth knowledge of high-performance façade systems, curtain wall engineering, building envelope optimization, thermal insulation systems, structural glazing, and sustainable façade design. Participants will explore advanced concepts used in landmark skyscrapers, commercial complexes, and smart buildings, ensuring compliance with international standards and green building certifications such as LEED, BREEAM, and ISO façade performance benchmarks.

In today’s rapidly evolving construction industry, façade engineering plays a vital role in energy efficiency, climate-responsive design, acoustic control, weatherproofing systems, and structural safety integration. This course equips learners with cutting-edge expertise in digital façade modeling, BIM integration, material innovation (glass, aluminum, composites), and performance simulation tools, preparing them for global careers in architectural engineering, façade consultancy, and construction project management.

Programme Curriculum

Façade Engineering Systems Training Course

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Course Duration

5 days

Course Objectives

1. Understand advanced façade engineering principles and building envelope systems
2. Analyze structural performance of curtain wall and cladding systems
3. Apply energy-efficient façade design strategies for sustainable buildings
4. Evaluate thermal insulation and solar heat gain control methods
5. Integrate BIM (Building Information Modeling) in façade design workflows
6. Assess wind load and structural stability in high-rise façade systems
7. Select modern façade materials including glass, aluminum, and composites
8. Design weather-resistant and waterproof façade systems
9. Implement acoustic insulation solutions in façade engineering
10. Comply with international building codes and façade safety standards
11. Utilize digital simulation tools for façade performance analysis
12. Develop green building façade solutions for net-zero energy buildings
13. Manage real-world façade engineering project lifecycle and execution

Target Audience

1. Civil Engineers
2. Structural Engineers
3. Architects and Design Consultants
4. Façade Engineers and Specialists
5. Construction Project Managers
6. Building Services Engineers
7. BIM Modelers and Coordinators
8. Real Estate Developers and Contractors

Course Modules

Module 1: Introduction to Façade Engineering Systems

- Evolution of façade engineering in modern architecture
- Types of building envelope systems
- Role of façade in energy efficiency
- Functional requirements of façades
- Global trends in façade design
- **Case Study:** Burj Khalifa façade system analysis and performance optimization

Module 2: Curtain Wall Systems Design

- Stick vs unitized curtain wall systems
- Structural load distribution techniques
- Glass fixing and anchoring systems
- Water and air infiltration control
- Installation methodologies
- **Case Study:** Apple Park curtain wall system engineering

Module 3: Structural Glazing & Glass Engineering

- Types of architectural glass systems
- Laminated, tempered, and insulated glass
- Load-bearing glass applications
- Safety and impact resistance design
- Thermal performance optimization
- **Case Study:** Louvre Abu Dhabi dome glazing system

Module 4: Thermal & Energy Performance of Façades

- Heat transfer mechanisms in façades
- Solar control strategies and shading devices
- U-value and SHGC analysis
- Passive design integration
- Energy-efficient façade modeling
- **Case Study:** The Edge Building, Amsterdam energy-efficient façade system

Module 5: Façade Materials & Innovation

- Aluminum composite panels (ACP) systems
- High-performance glass technologies
- Smart and adaptive façade materials
- Fire-resistant façade materials
- Sustainable material selection criteria
- **Case Study:** One World Trade Center façade material resilience

Module 6: Structural Analysis & Wind Engineering

- Wind load analysis on high-rise façades
- Structural movement and deflection control
- Seismic considerations in façade design
- Anchor and bracket design systems
- Safety factor calculations
- **Case Study:** Shanghai Tower wind-resistant façade engineering

Module 7: BIM & Digital Façade Design Technologies

- BIM integration in façade engineering workflows
- Parametric façade design tools
- 3D modeling and simulation techniques
- Clash detection in façade systems
- Digital twin applications
- **Case Study:** Zaha Hadid-designed parametric façade projects

Module 8: Installation, Maintenance & Lifecycle Management

- Façade installation sequencing
- Quality control and site inspection methods
- Maintenance strategies for façade longevity
- Repair and refurbishment techniques
- Lifecycle cost optimization
- **Case Study:** Marina Bay Sands façade maintenance and lifecycle strategy

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