Structural Analysis Using ETABS Training Course

Professional Development Training Course Outline

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

Course Introduction

Structural Analysis Using ETABS Training Course is designed to develop advanced skills in building information modeling (BIM), structural engineering analysis, seismic design, and high-performance structural simulation using the globally recognized ETABS platform. This course equips participants with practical knowledge of 3D structural modeling, load calculation, dynamic analysis, reinforced concrete design, steel structure analysis, and code-based optimization for real-world engineering projects. With increasing demand for smart construction, sustainable infrastructure, digital engineering workflows, and automated structural design, ETABS proficiency has become an essential skill for modern structural engineers.

Through hands-on projects, industry case studies, and expert-led practical sessions, participants learn how to analyze and design complex structures including high-rise buildings, commercial towers, residential developments, industrial facilities, and earthquake-resistant structures. The training emphasizes performance-based design, structural safety evaluation, advanced modeling techniques, and engineering decision-making while integrating international standards and best practices. By completing this course, learners gain the confidence to execute professional structural analysis projects and enhance their career opportunities in the evolving AEC (Architecture, Engineering, and Construction) industry.

Programme Curriculum

Structural Analysis Using ETABS Training Course

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Course Duration

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Course Objectives

1. Develop advanced skills in ETABS structural modeling and simulation workflows.
2. Understand 3D building analysis and digital structural engineering practices.
3. Perform accurate gravity load and lateral load analysis for buildings.
4. Apply seismic analysis techniques and earthquake-resistant design principles.
5. Master reinforced concrete and steel structure design optimization.
6. Create professional structural models using BIM-integrated engineering workflows.
7. Analyze structural behavior using linear and nonlinear analysis methods.
8. Interpret ETABS results for structural performance evaluation and safety assessment.
9. Apply international structural codes for compliance-based design solutions.
10. Improve skills in high-rise building analysis and advanced structural systems.
11. Develop practical expertise in automated structural design processes.
12. Learn industry standards for sustainable and resilient infrastructure development.
13. Build career-ready capabilities for modern structural engineering projects.

Target Audience

1. Structural Engineers seeking advanced ETABS expertise.
2. Civil Engineers working in building design and construction.
3. Graduate Engineers entering structural engineering careers.
4. BIM Engineers integrating structural workflows.
5. Design Consultants handling commercial and residential projects.
6. Architects interested in structural coordination and collaboration.
7. Construction Professionals involved in quality and technical review.
8. Engineering Students pursuing structural design specialization.

Course Modules

Module 1: Introduction to ETABS and Structural Engineering Workflow

- Overview of **ETABS interface, tools, and structural analysis environment**
- Understanding **modern structural engineering design workflows**.
- Creating project settings, grids, stories, and structural layouts.
- Defining materials, sections, and structural properties.

- **Case Study:** Modeling a multi-story reinforced concrete office building from concept to analysis.

Module 2: Structural Modeling and Building Information Setup

- Developing accurate **3D structural models for real-world buildings**.
- Modeling beams, columns, slabs, walls, and foundations.
- Applying advanced modeling techniques for complex structures.
- Managing structural geometry and connectivity checks.
- **Case Study:** Complete ETABS model development for a residential tower project.

Module 3: Load Definition and Structural Analysis

- Understanding **dead loads, live loads, wind loads, and seismic loads**.
- Creating load patterns and load combinations.
- Performing static and dynamic structural analysis.
- Reviewing displacement, reactions, and internal forces.
- **Case Study:** Load analysis of a commercial high-rise building.

Module 4: Seismic Analysis and Earthquake Resistant Design

- Understanding **earthquake engineering principles and seismic behavior**.
- Applying response spectrum and modal analysis techniques.
- Evaluating drift, stability, and structural performance.
- Designing structures for enhanced seismic resilience.
- **Case Study:** Seismic performance assessment of an earthquake-prone region building.

Module 5: Reinforced Concrete Structure Design Using ETABS

- Designing reinforced concrete beams, columns, and slabs.
- Understanding reinforcement requirements and detailing concepts.
- Performing concrete design checks using engineering codes.
- Optimizing structural elements for safety and efficiency.
- **Case Study:** RC frame design optimization for a multi-level commercial building.

Module 6: Steel Structure Analysis and Advanced Design Concepts

- Modeling steel frames and structural systems.
- Understanding steel member behavior and design parameters.
- Performing steel structure analysis and optimization.
- Reviewing strength, stability, and serviceability criteria.
- **Case Study:** Industrial steel warehouse structural analysis project.

Module 7: Advanced Analysis, Results Interpretation, and Optimization

- Performing advanced **structural performance evaluation**.
- Understanding nonlinear analysis concepts.
- Reviewing ETABS analysis reports and design outputs.
- Improving structural efficiency through optimization techniques.
- **Case Study:** Performance review of a complex high-rise structural system.

Module 8: Professional Project Workflow and Industry Applications

- Developing complete structural analysis documentation.

- Managing engineering reports and project deliverables.
- Integrating ETABS with modern **BIM coordination workflows**.
- Preparing models according to professional standards.
- **Case Study:** End-to-end structural analysis project for a real-world building development.

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:

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Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com