



Fundamentals of Engineering Exam Review

STRUCTURAL ANALYSIS AND STRUCTURAL DESIGN

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Goals for this Session

- Primary
 - PASS THE FE EXAM !!!
- Secondary
 - Review the FE Reference Handbook
 - Review the concepts and details of structural engineering problems



Structural Analysis

(10% in the afternoon session)

- Force analysis of determinant beams, trusses, and frames
- Deflection analysis of determinant beams, trusses and frames
- Stability analysis
- Column analysis
- Loads and load paths
- Elementary statically indeterminate structures




Structural Design

(10% in the afternoon session)

- Codes (ASCE, AISC, ACI, NDS, AISI)
- Steel design
(beams, columns, tension members)
- Concrete design
(beams, slabs, columns, walls, footings)




Structural Analysis

- Overview of FE Reference Manual
 - Influence lines for beams and trusses
 - Beam stiffness and moment carryover
 - Truss deflection by unit load method
 - Frame deflection by unit load method
 - Member fixed end moments
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Structural Analysis

- Solution strategies
 - Example problems
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Structural Design

- Overview of FE Reference Manual
 - Live load reduction
 - Load combinations
 - Concrete design
 - Design moments, beams, columns
 - Steel design
 - Beams, columns, tension members, connections



Structural Design

- Solution strategies
 - Example problems
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Summary

- Review the FE Reference handbook
- Work additional sample problems
- Apply solution strategies
- **PASS THE FE EXAM!!**



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