



IFS ACADEMY

Training For The Future!!



ANSYS CivilFEM Basic Training Course Curriculum

Chapter 1: General Utilities

- a. Setting up Codes
- b. Selection of Units System
- c. User Defined Units System

Chapter 2: Materials

- a. Concrete and Steel Material Properties
- b. Soil & Rock Material Properties
- c. User defined material library

Chapter 3: Element Types and Input properties for the elements

- a. Beam, shell, solid
- b. Cross Sections Explorer
- c. Shell Vertex Explorer
- d. Member Properties Explorer
- e. Beam & Shell Properties
- f. Define cross sections from library
- g. Sections by dimensions
- h. Beam concrete section definition
- i. Generic Composite Sections
- j. Import Cross Sections into Library
- k. Shell Concrete Section Definition
- l. Generic Solid Section Definition
- m. Composite Solid Section Definition

Chapter 4: Loading

- a. Mobile Loads in a Road Bridge
- b. Steel Building Load Combinations with AISC LRFD
- c. Parking Structure
- d. List and plot of forces, moments etc.

Chapter 5: Steel Structures, Concrete Structures and Post Processing (Eurocode 3, EA, AISC LRFD, British Standard 5950, Eurocode 2, ACI 318, EHEStandards): Beam & Shell Utilities, Code Checking and Design.

- a. Pure Bending
- b. Tension and Compression
- c. Bending and Axial Force
- d. Compression Buckling
- e. Simple Flexure Beam
- f. Truss Tension and Compression
- g. Column Buckling Check
- h. Compression Flexural Buckling
- i. Shear Checking
- j. Bending Check
- k. Lateral Torsional Buckling
- l. Axial+Bending Reinforcement
- m. Biaxial Bending + Axial Force
- n. Shear and Torsion Reinforcement

Chapter 6: Workshops:

Workshops 1.FORCES AND MOMENTS ON A BEAM

Workshops 2.BUCKLING ANALYSIS OF A STEEL FRAME

Workshops 3.GRAVITY DAM, PRESTRESSED BEAM

Workshops 4.PRESTRESSED CONCRETE FRAME

Workshops 5.CONCRETE SLAB BRIDGE

Workshops 6.FRAME REINFORCEMENT DESIGN

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Note: Knowledge of ANSYS Mechanical APDL is essential for completing this syllabus.