

ANSYSWORKBENCH

Duration: 80 hrs

INTRODUCTION TO CAE-

- Introduction to CAE
- General working of FEA
- Stiffness matrix
- Boundary conditions
- Elements and Element Shapes

- General procedure to conduct FEA
- FEA software
- Key Assumptions in FEA
- Types of Engineering Analysis
- Important terms and definitions
- Classification of materials

INTRODUCTION TO ANSYS WORKBENCH-

- System requirements
- Starting ANSYS Workbench 16.2
- ANSYS Workbench 16.2 GUI
- Working on a Project
- Units in ANSYS Workbench
- ANSYS Workbench Database and File format
- Changing the unit system
- Components of the system
- Introduction to Design Modeller Window

SOLID MODELING FUNDAMENTALS-

- Overview
- Introduction
- Extrusion
- Revolution
- Sweep
- Sketching

PLACED FEATURES AND ASSEMBLY-

- Overview
- Introduction
- adding a hole
- Adding a round
- adding a chamfer
- Patterns

- Assembly
- Alternate solid modeller

MODELING TECHNIQUES-

- Overview
- Introduction
- Parameters
- Other cad systems
- Surface and Line models

DEFINING MATERIAL PROPERTIES-

- Introduction to Engineering Workspace
- Creating and Adding Materials
- Assigning Material to the Beam
- Assigning Material to the Clamp
- Assigning Material to the Assembly

MESHING-

- Introduction
- Meshing of Plate with Holes

- Generating the mesh
- Optimize the model
- Generating the local mesh (illustration through three examples)
- Assembly Meshing

STATIC STRUCTURE ANALYSIS-

- Pre-processing
- Solution
- Post-processing
- Static Structural Analysis of:
Cantilever Beam
Plate with a central circular holes
Plate with a square slot

- Pressure vessel
- Bracket
- Clevis assembly

WIZARD AND TOOLS-

- Overview
- Introduction
- Static loadings-ductile materials
- Static loadings-Brittle materials
- Fatigue loading-ductile material

SURFACE AND LINK MODEL-

- Overview
- Introduction
- Sheet with circular hole-plane stress
- Pressure vessel
- Bracket
- Line body mode

- Connecting rod
- Motor cover
- Assembly

BUCKLING LOADS-

- Introduction
- Buckling analysis of:-
Fixed free column (flag pole)
Pinned-pinned column
Built-up structure

THERMAL ANALYSIS-

- Introduction
- Important terms used in thermal analysis
- Types of thermal analysis
- Steady state thermal analysis of

- Car Disk Brake Rotor
- Heat sink
- Transient thermal analysis of Piston

THERMAL STRESS-

- Introduction
- Thermal stress-uniform temperature change
- Thermal stress in a cylinder