

CETPA INFOTECH PVT. LTD.

CURRICULUM OF ANSYS

ANSYS TRAINING

INTRODUCTION

- Mechanics
- Different Types Of Numerical Methods & Applications
- History Of Finite Element Method
- Today's Scenario & Future of FEA

BASICS OF FEM

- Theoretical FEM Procedure To Solve Above Mechanics Problem
- Generalized Static Equation
- Theoretical Basis: Formulating Elements Equation
- Six Steps In The Finite Element Method
- Fundamentals Of Elasticity
- Theories Of Failure
- Linear Static Analysis
- Non-Linear Static Analysis
- Thermal Analysis
- FEA Design Intent

GETTING STARTED WITH ANSYS APDL

- Accessing ANSYS & Understanding GUI
- Utility Menu
- Manipulating Model
- Standard Toolbar
- Command Input Window
- Riser/Hide Icon
- Reset Picking
- Contact Manager
- ANSYS Toolbar
- User Prompt Information & Current Settings
- ANSYS Main Menu

CAD MODELING USING ANSYS

- Units
- Co-ordinate System
- WorPlane
- 1D, 2D And 3D Modeling (2D & 3D Space)
- CAD Modeling of Bridge
- 2D Modeling Of Container (2D Space)
- 3D Modeling Of Shaft

- Methods Of Solid Modeling
- Component And Assembly Management

IMPORTING GEOMETRY FROM OTHER CAD PACKAGES

- Understanding Different Import Features
- Importing IGES File In ANSYS
- Import Using SMOOTH Option
- Import Using FACETED Option
- Geometry Cleanup For Meshing

MESHING

- Introduction To Meshing
- Elements Classification
- Element Properties
- Meshing Using ANSYS
- Line Meshing Of Electric Pole (1D)
- Area Meshing Of Pad Clip (2D)
- Volume Meshing Of Vehicle Differential (3D)

MESHING (ADVANCE) & TECHNIQUE

- Mesh Generation: Automatic Techniques
- ANSYS Automatic Mesher Technique
- Automatic Map Meshing Of Tank
- Automatic Tri/Tet Mesh With Smart Size Algorithm
- Blased Meshing
- Refine Meshing
- 2D Map Meshing For Reduction Area
- Map Meshing For Reducing Element Transition
- 2D Map Meshing To Handle Solid Circle
- 3D Hexahedron (Brick) Manual Meshing

FINALIZING FE MODEL FOR ANALYSIS

- Element Quality Criteria
- Mesh Quality Check Of Support Plane
- Methods Of Creating Quality Mesh
- Creating Quality Elements
- Materials
- Boundary Conditions

ADVANCE BOUNDARY CONDITIONS

- Application Of Mass Elements

- Application Of Rigid Elements
- Spring & Pin Joint Simulation
- Linking Solid Faces To Beam And Shell Edges
- Simulating Bolted Joints
- Arc Weld Modeling
- Representing Weld using Shell And rigid Elements
- Torque On Solid Element
- Simulating Leakage
- Symmetry Boundary Conditions
- Mesh Generation

GETTING STARTED WITH ANSYS WORKBENCH

- ANSYS Workbench Interface
- Getting Started with ANSYS Workbench
- Project Page and File Management
- Toolbar position
- Toolbox Customization
- Reset workspace
- Progress toolbox
- Graphic Interactor

DESIGN MODELER

- Why Design Modeler?
- Graphical User Interface
- Design Principles
- Parameters in Design Modeler
- Sketching Mode
- Unit
- Constraints
- Concept Modeling
- Extrude ,Revolve, Sweep , Loft
- Advanced modeling features
- Importing

- Work plane
- Primitives

SIMULATION BASICS

- Graphical User Interface
- Idealization
- Material Parameters
- Material By library
- Material By User input
- Descritization, Mesh Control, Mesh Study, Mesh Quality.
- Boundary Conditions
- Analysis settings
- Post-processing
- Switching analysis
- Structural and Thermal Analysis (on work bench)
- Introduction of Explicit Dynamics

HANDLING PROJECTS

- The Steps in An FEA Projects
- Integrative And Dead-end FEA

PROJECTS SKILLS

- What Could Possibly Go Wrong
- How To Be A Smart FEA Shopper
- What FEA Reports And Backups Should Do
- Report Generator

PROJECTS

- Analysis Of A Piston
- Analysis Of bearing
- And Many More--

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Because Knowledge Matters

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