Radical TECHNOLOGIES

ANSYS

DURATION OF TRAINING: 32HRS.
BATCH TYPE: WEEKDAYS/ WEEKENDS
MODE OF TRAINING: CLASSROOM/ ONLINE/ CORPORATE TRAINING

Syllabus

- Topic 1: Introduction to FEA Introduction to FEA
- Topic 2: Introduction to ANSYS Workbench
- Topic 3: Part Modeling – I
- Topic 4: Part Modeling- II
- Topic 5: Part Modeling- III
- Topic 6: Defining Material Properties
- Topic 7: Generating Mesh – I
- Topic 8: Generating Mesh – II
- Topic 9: Static Structural Analysis
- Topic 10: Modal Analysis
- Topic 11: Thermal Analysis.

FEA and ANSYS

- What is FEA?
- About ANSYS
- ANSYS Basics

Starting ANSYS

- ANSYS Workbench
- Environment
- The GUI
- Graphics and Picking
- The Database and Files
- Saving Files
- Exiting ANSYS
- File Types

General Analysis Procedure

- Overview
- Preliminary Decisions
- Preprocessing
- Solution
- Post processing

Introduction to ANSYS Modeling

- Direct Generation vs.
- Solid Modeling
- Direct Generation
- Creating nodes and elements
- Filling between nodes
- Setting Element Attributes

Solid Modeling

- Bottom up
- Using key points
- Using lines, splines & arcs
- Using areas and volumes (arbitrary)
- Top Down

From Primitives

- Creating rectangle, circle, polygon, block, cylinder, prism, sphere, cone and torus.
- Concepts of hard points, line fillets and area fillets.

Modeling with Boolean operations

- Intersect
- Add
- Subtract
- Overlap
- Glue
- Divide

Types of coordinate Systems

- Global & Local
- Active coordinate system

Introduction to Working Planes

- Creating a new working plane
- Moving and rotating the working plane

Modify / Transformation commands

- Copy
- Reflect
- Move/ Modify
- Scale

Model Creation by Extrusion

- Sweeping key points along a trajectory to create lines
- Revolving key points about an axis to create arcs or full circles, normal to
- the axis
- Sweeping lines or splines along a trajectory to get areas
- Revolving lines, splines or arcs about an axis to create cylindrical areas.
- Giving depth to an area to create a volume, normal to the area
- Creating a volume with tapered faces
- Sweeping an area along a trajectory to create a volume
- Revolving an area about an axis to create a cylindrical volume
- Extending Lines
- Modifying an existing line by extending that line to a desired length
- Creating a new line on the basis of an existing line, where the existing line
- will not be modified.

Introduction to elements

- One Dimensional Elements
- Two Dimensional Elements
- Two and Half Dimensional Elements
- Three Dimensional Elements
- Quadrilateral Elements
- Triangular Elements
- Brick Elements
- Tetrahedral Elements
- Shell Elements

Introduction to Meshing

- Mapped and free meshing
- How to control mesh size?
- How to use Mesh Tool?
- Concatenation and its significance
- Clearing mesh and re-meshing
- Some useful meshing techniques

Numbering Controls

- Merging Coincident Points
- Compressing Item Numbers
- Setting Start Number & viewing Start Number Status
- Adding Number Offset
- What is coupling and how to create coupled sets of nodes
  Static Structural Analysis Modal Analysis Thermal Analysis…

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