In-House FEA Software Training

HyperMesh (Pre-processor) + OptiStruct (Solver) + HyperView (Post-processor)
(Theory, Meshing, Linear Static & Normal Mode Analysis)

Course Duration: 2.5 Months / 4/5 Times in a week / 2.5/3.00 hours

Regular Batch (Morning & Evening) /Weekend

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FEA Theory: Introduction to FEA, Basic FEA Theory, Why do we mesh, Past, Present and Future of FEA, How software solves internally, What input data is required for FEA, Brief introduction to different types of analyses, What is stress, vonMises, principal stress, Comparison of Tria, Quad & linear - parabolic elements, Shell, Beam, Solid formulation,

Meshing: Introduction to different element types, 1-D, 2-D, 3-D Elements, Different ways to mesh any component, Element library, Component, Material, Loadcols, Card Images

1-D Elements: Rod, Bar, Beam & Rigid Elements, Automatic connectors.

2-D Elements: Tria, Quad, Linear & Parabolic options, Automatic meshing, Ruled, Spline, Skin, Drag, Line Drag , Spin, examples, Shortcuts keys for Hypermesh, Mid surface meshing with its quality, Element Edit, Copy, Reflect, Translate, Equivalence, Duplicate, Free edge, Element Quality Checks, How not to 2-D mesh, Thumb rules.

3-D Elements: Comparison of Tetra, Hex and Penta elements, Automatic tetra meshing, Manual Tetra (2-D to 3-D tetra meshing approach), Hex meshing, Special Techniques, how not to mesh, Element quality checks. Connection Tetra to Shell elements & Hex to Shell elements.

Linear Static Analysis: Comparison of analytical results with FEA Results for 1-d, 2-d & 3-d elements, Effect of biasing, Effect of mesh density & element type on accuracy of results, Spot weld analysis, Arc weld analysis, bolted joint Simulation, Multiple loads application, Self-weight consideration, Linear Superposition, Contact simulation.

Normal Mode Analysis: What is Free Vibration & Natural Frequency, why natural frequency, Interpretation & physical interpretation of natural frequency and output provided by FEA software's, How to change natural frequency?

Post Processing Techniques: How to interpret results, Verification & validation of FEA results, design modifications based on FEA: thumb rules & standard practices, common mistakes and errors.

Tool Test