

Design Centre

The Complete CAD-CAE Academy

Course Name : HYPERMESH

Duration : 120 Hrs.

Syllabus

Introduction to HyperMesh

Introduction to CAD & CAE, Application of CAE Software, Product Design Flow-Chart, Introduction to FEM, Introduction to HyperMesh, Menu bars, tool bars, shortcuts,

Geometry

Create Node , Node edit, Temp Nodes, Distance, Dimensioning, Points
Demo exercises & Assignments

Geometry

Lines, Line edit, Length, Delete Mask
Demo exercises, Assignments

Geometry

Surface & Surface edit, Normals,
Translate, Rotate
Demo exercises, Assignments

MID-Surface Extraction

Auto-Midsurface Extraction, Surface Pairing, De-featuring
Quick edit
Demo exercises, Assignments

Geometry Clean-up

Surface Edges , Visualization tool bar, Display tool bar, Clean up using quick edit

2D Meshing

Introduction to Meshing, Types of collectors, Auto-Meshing (Size & Biasing)
Density and mesh style
Demo exercises, Assignments

2D Meshing

Mesh Connectivity, Replace & Remeshing, Current and surface comps,
Demo exercises & Assignments
Reviews of all options & doubt clarification

2D Mesh Quality

Quality criteria, Warpage, Aspect ratio, Jacobian,
Skewn, Reducing Trias percentage,
Demo exercises & Assignments

QUALITY INDEX

Quality Index, T-Connections
Duplicates, Free edges
Demo exercises & Assignments

Manual Meshing

Ruled, Spline, Skin, Drag, Spin, line drag, elems offset
Demo exercises & Assignments

Mesh Edit

Edit Elements, Find entities, Organize Entities,
Project, Position, Normals, Scale
Demo exercises & Assignments
2D Meshing with Quality Assessment Review

TOOLS

Color, Rename, Detach
Order Change, Number and Mass Calculation
Demo exercises & Assignments

3D Hex Meshing

Introduction to 3D Meshing
Types of 3D elements, Drag, Spin, Line drag & Element offset

On drag calculation
Demo exercises & Assignments

3D Solid Mesh

Solid and Solid Edit
Solid Map Commands, Linear Mesh, Solid Mesh
Demo exercises & Assignments

Solid Mapping

Mappable solids General, line drag
Linear solid, End only, One Volume
Multi-solids, Mesh style
Demo exercises & Assignments

3D Tetra Meshing

Introduction to Tetra mesh, Volume Tetra, Tet Collapse, Remeshing
Tetra Parameters
Demo exercises & Assignments

1D Mesh

Introduction 1D elements,
Beam elements, Bars, Rods
RBE2 & RBE3 Elements, Welding, Bolt Connections
Demo exercises & Assignments

Linear Meshing

Introduction to Analysis, Create collectors, Material properties,
Card edit, loads
Constraints, loadsteps
Demo exercises & Assignments

Modal & Buckling Analysis

Deck preparation, Material and properties
Modal & Buckling loads and constraints

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