

ANALYSIS USING ANSYS /HYPER WORKS (50 Hours)

- ✚ Introduction to FEA
- ✚ Importance of FEA
- ✚ Introduction to ANSYS
- ✚ Various types of analysis
- ✚ Pre processing
 - Elements and Nodes
 - Real constants
 - Modeling & Boolean operations
 - Meshing and quality checking
- ✚ Solution
 - Load definitions
 - Displacement & DOF
 - Types of loads
 - Solving
- ✚ Post processing
 - Plot results
 - Animation of results
 - Report generation

ADVANCED CNC PROGRAMMING AND OPERATIONS (130 Hours)

- ✚ Introduction to CNC machines
- ✚ Constructional features of CNC machine
- ✚ Types of programming and codes
- ✚ Types of datum
- ✚ Manual part programming
- ✚ Canned cycles
- ✚ Control systems
- ✚ Tools, cutters and inserts
- ✚ Hands-on training in 3-Axis VMC
- ✚ Maintenance of CNC machines
- ✚ Introduction to rapid prototyping
- ✚ Introduction to reverse engineering

Duration	50 hrs/ level	Full Time	9.00am to 4.30pm
		Part Time	5.00pm to 7.30pm

- The course is designed for design engineers, manufacturing engineers, draftsman and students of engineering and polytechnic colleges
- Each participant is given individual system for practical sessions
- Expert faculty members, well experienced in the areas of teaching and consultancy works, will handle the lectures and practical sessions
- After completing this course student can use the software efficiently for product design and development

OTHER COURSES CONDUCTED

(Full Time and Part Time)

1. CAM simulation, CNC programming and Hands-on training in 3-axis VMC
2. Advanced CNC programming and operations (Including CREO CAM)
3. Diploma in CAD/CAM/CAE using Creo/Catia
4. Design, Assembly, Drafting and Manufacturing using Creo/Catia/NX
5. Master CAM
6. Finite element analysis using Ansys
7. Finite element analysis using Hyper Works
8. Mold Wizard using NX
9. Conceptual design and visualization using Alias studio tools
10. Virtual Reality for product design

Diploma in CAD/CAM/CAE Using

UNIGRAPHICS-NX



CAD/CAM Centre
PSG COLLEGE OF TECHNOLOGY
Coimbatore-641004

For further information contact:

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PART DESIGN (LEVEL-I)

- ✚ Introduction to CAD & NX
- ✚ Preferences - Sketch , modeling preferences
- ✚ Layers – Layer settings, Visible in view, Layer category, Move & copy to Layer
- ✚ Sketching, Dimensioning and constraints
- ✚ Form Feature: Extruded Body, Revolved Body, Sweep along guide, Tube, etc
- ✚ Reference Features: Datum plane, Datum Axis, CSYS
- ✚ Special Feature: Hole, Boss, Pocket, Pad, Slot, Groove
- ✚ User defined Feature
- ✚ Associative features: Extract, Sheet from curves, Bounded plane, Thicken Sheet
- ✚ Primitives: Block, Cylinder, Cone, Sphere
- ✚ Feature Operation: Draft, Edge, blend, chamfer, Thread, Instance, Sew, Patch, Wrap Geometry, Offset, Scale, Trim, Split body
- ✚ Boolean Operations: Create, Unite, Subtract, Intersect
- ✚ Edit Feature & Model Navigator: Parameters, Positioning, Move, Reorder, Delete, Replace, Suppress, Unsuppress, Suppress by expression, Remove parameters, Solid Density, Play back, Resize Fixed Datums, Show and Hide Features, Make current feature, curves, Rename, Properties, Object Dependency Browser
- ✚ Miscellaneous- File, Edit, View, Format, Tools, Analysis.
- ✚ Projects.

GENERATIVE SHAPE DESIGN (LEVEL-II)

- ✚ Introduction to basic Surface modeling
- ✚ WCS, Curve, Curve Operation
- ✚ Free Form Feature - Through Points, From Poles, From Point Cloud, Ruled, Through Curves, Through Curve Mesh, Swept, Section, Bridge, N-Sided Surface, Extension, Law Extension, Enlarge, Offset, Rough Offset, Quilt, Swoop, Studio Surface, Styled Blend, Global Shaping, Trimmed Sheet, Fillet
- ✚ Synchronous Modeling
- ✚ Format- Group, Pattern
- ✚ Tools – Visual Editor, Spread Sheet, Smart models (Product Definition, Geometric Dimensioning & Tolerancing), Material Properties, Introduction to Knowledge Fusion, Part Families.

ASSEMBLY AND DRAFTING (LEVEL-III)

- ✚ Assembly Structure - Top Down, Bottom Up
- ✚ Mating Conditions - Mate, Align, Angle, Parallel, Perpendicular, center, Distance, Tangent.
- ✚ Component- Add Existing, Create New, Create Array, Replace, Reposition, Mate, Suppress, Unsuppress Component, Replace Reference set, Define Mating, Verify Mating Alternates, Part Family Update, Properties, Check Clearances
- ✚ Exploded Views - Create, Edit, Delete, Hide, Show Explosion, Auto-Explode, Unexplode, Hide, Show Components
- ✚ Sequencing , Wave Geometry , Cloning

- ✚ **DRAWING:** New, Open, Delete, Edit, Add View, Remove, Move/Copy, Align, Edit View, Define View Boundary, Brake Out Section, Broken View, Display Drawing, Update View
- ✚ Insert- Dimensions, GD&T, Utility, ID, User defined, Custom Symbol, Cross Hatching, Ordinate Dimension, Weld Symbol
- ✚ Edit- Origin, Section Line, Section Component in View, Drafting Objects Associativity, Leader, Ordinate Dimension, Cross Hatch Boundary, Suppress, View
- ✚ Dependant Edit, Preferences
- ✚ Projects

MANUFACTURING AND NC SIMULATION (LEVEL-IV):

- ✚ Introduction to manufacturing
- ✚ CAM Concepts, Tools & Libraries, Machine Control Operations, Tool Paths & Post processing, UG Post, Shop Floor Documentation, process Information
- ✚ Milling
 - Point to point Milling
 - Planar & Cavity Milling
 - Face Milling
 - Z Level Milling
 - Zig – Zag Surface Milling
 - Sequential Milling
 - Fixed & Variable Axis Contour Milling
 - Thread Milling
- ✚ Turning: Introduction to Turning
- ✚ Wire EDM: Introduction to Wire EDM
- ✚ Projects