

CNC Product Design

A practical CNC design and manufacturing course covering engineering drafting, vector design, relief modeling, toolpath generation, furniture design, sign making, and CNC production workflows using AutoCAD and ArtCAM — tailored for furniture, signage, engraving, and CNC manufacturing industries.

Duration 6 Months	Training Mode Offline Classroom Training	Certification Industry Certificate	Practical Labs 100% Hands-on
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Tools & Tech: AutoCAD • ArtCAM • CNC Router • G-Code

Detailed Course Curriculum & Modules

MODULE 01 AutoCAD & Engineering Drawing - Engineering Drawing Standards, Orthographic & Isometric Projection - Dimensioning, Symbols, Scales, Tolerances & Basic GD&T; - AutoCAD Interface, Drawing & Editing Tools, Precision Techniques - Layers, Blocks, Dynamic Blocks & External References 2D Mechanical Drawings, Component & Manufacturing Drawings - AutoCAD Projects: Name Plates, CNC Profiles & Production Drawings	MODULE 02 ArtCAM Fundamentals & Vector Design - Introduction to CAD/CAM, ArtCAM Interface & Project Setup - Material Setup, Job Configuration & Tool Database - Vector Creation: Lines, Curves, Shapes & Node Editing - Text Creation, Artistic Text & Logo Design - Mirror, Array, Offset Vectors & Importing DXF/DWG/AI Files
MODULE 03 Relief & 3D Modeling - Relief Modeling: Shape Editor, Sculpting & Relief Components - Layer Management, Merge, Smooth & Blend Reliefs - Decorative Panels, Wooden Carvings & Name Plates - Wall Panels, Temple Elements, Door & Frame Designs - Furniture Patterns & Artistic Relief Models	MODULE 04 CNC Toolpath Generation - Toolpath Concepts: Material Setup, Machine Origin & Safe Z Height - Tool Selection, Feed Rate, Spindle Speed & Cutting Depth 2D Toolpaths: Profile, Pocket, V-Carving, Drilling & Engraving 3D Toolpaths: Rough Machining, Finish Machining, Raster & Pencil - Rest Machining & Boundary Machining Strategies
MODULE 05 CNC Machine Preparation & Post Processing - CNC Router Basics, Material Clamping & Machine Zero Setting - Work Coordinate System, Tool Offset & Length Calibration - Job Simulation & Collision Checking - Post Processor Selection, G-Code Generation & NC File Export - Machine Compatibility & Program Verification	MODULE 06 Furniture & Decorative Design - Cabinet Doors, Wardrobe Panels & Wooden Furniture Components - Decorative Wall Panels, Ceiling Panels & Furniture Carving - MDF Cutting Designs, Jali Patterns & Partition Designs - Wall Art, Decorative Frames & Temple Interior Panels
MODULE 07 Sign Making, Engraving & Production - Name Plates, Company Logos, Acrylic & Wooden Sign Boards - Metal Engraving, Gift Articles, Trophies & Corporate Branding - Monograms, Custom Patterns & Personalized Gifts - Material & Tool Selection, Cutting Optimization & Nesting - Production Planning, Waste Reduction & Quality Inspection	

Practical Projects & Industry Capstones

- CNC Name Plate
- Wooden Engraving Project
- Decorative Wall Panel
- MDF Jali Design
- Temple Carving Design
- Cabinet Door & Furniture Panel Design
- Company Logo Engraving
- Acrylic & Wooden Sign Boards
- 3D Relief Artwork
- Interior Decorative Panel
- Complete CNC Production Project

■ Industry Certification Authorized certificate verified globally via online portal.	■ 100% Placement Support Resume review, mock interviews, and recruiter connections.	■ Lab Access & Mentorship Dedicated workstation lab hours with expert guidance.
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