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**TRAINING DURATION: 160 HOURS**

# SKILLS BUILDING TRAINING

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# Master Certificate in Product Design

The Master Certificate in Product Design is a career-focused, professional certification program designed to develop highly skilled product design professionals capable of meeting modern industry demands. The program is ideal for mechanical engineering students, diploma holders, graduates, and working professionals who aspire to build or enhance their careers in product design, mechanical design, and R&D engineering.

This program delivers a complete understanding of the product development lifecycle, starting from concept creation and engineering fundamentals to advanced 3D modeling, assembly design, sheet metal design, and detailed manufacturing documentation. It integrates design theory, engineering principles, and hands-on software training, ensuring learners gain both conceptual clarity and practical competence.

# About Company

Certed Technologies is a leading EdTech and corporate training organization committed to delivering industry-relevant, future-ready skill development programs. With a strong portfolio across IT, design, data, and emerging technologies, we collaborate with universities, colleges, corporates, and training institutes to deliver job-oriented training solutions.

**Mission:** To empower learners with practical, outcome-based training that enhances employability, creativity, and professional excellence in the digital economy.

# Market Scope – Master Certificate in Product Design

## Industry Overview

The product design industry is a key driver of innovation across manufacturing, automotive, aerospace, and industrial sectors. With increasing adoption of digital design and CAD-based product development, companies require skilled engineers proficient in tools like AutoCAD, Creo, and NX CAD. The growing focus on efficient, manufacturable, and sustainable product designs has created strong demand for industry-ready product design professionals, making it a high-growth and future-oriented career domain.

## Career Opportunities

- Product Design Engineer
- Mechanical Design Engineer
- CAD Engineer
- Tool Design Engineer
- R&D Design Engineer
- Automotive Design Engineer

# Key Benefits of the Program

## ✓ Industry-Aligned Curriculum

Covers SEO, Google Ads (SEM), social media, content marketing, email marketing, web analytics, CRO, and performance marketing.

## ✓ Hands-On Learning

Live campaigns, real-time tools, case studies, and a business-focused capstone project.

## ✓ Creative + Technical Skills

Strategy, content creation, paid ads, analytics, automation, and AI-powered marketing tools.

## ✓ Portfolio Development

SEO audits, ad campaigns, social calendars, analytics reports, landing pages, and dashboards.

## ✓ Certification Support

Guidance for Google Ads, Google Analytics, Meta Marketing, and professional digital marketing certifications.

## ✓ Interview & Placement Readiness

Resume building, campaign presentations, case discussions, freelancing guidance, and placement support.

# Course Structure

**Duration: 10 Hours**

## Module 1: Fundamentals of Product Design & Engineering Concepts

Topics:

- Introduction to Mechanical Design Process
- Engineering drawing standards (ISO, BIS, ANSI)
- Orthographic projections
- Isometric and perspective views
- Dimensioning techniques and tolerances
- Fits, limits, and surface finish symbols
- Reading and interpreting industrial drawings

## MODULE 2: AutoCAD – 2D Drafting & Documentation

**Duration: 40 Hours**

Topics:

**Core Concepts**

- AutoCAD Interface & Workspace Customization
- Coordinate Systems & Drawing Setup
- Precision Drawing Techniques

**2D Drafting**

- Lines, Polylines, Circles, Arcs
- Modify Commands & Object Properties
- Layers, Blocks & Xrefs
- Annotation: Dimensions, Text & Leaders

### Engineering Drawings

- Orthographic Projections
- Sectional Views
- Auxiliary Views
- Isometric Drawings
- Title Blocks & BOM

### Standards & Output

- ISO / ANSI Drawing Standards
- Plotting & Printing
- Industry-level drafting practices

**Mini Project:**

- 2D Working Drawing of a Mechanical Component

## Module 3: Creo Parametric – 3D Modeling & Assemblies

Topics:

**Duration: 45 Hours**

### Part Modeling

- Sketcher & Constraints
- Feature-Based Modeling
- Datum Planes, Axes & Points
- Extrude, Revolve, Sweep, Blend
- Holes, Rounds, Chamfers

### Advanced Modeling

- Patterns & Relations
- Family Tables
- Sheet Metal Design
- Weldments & Structural Members

- **Assembly Design**
- Bottom-Up & Top-Down Assembly
- Assembly Constraints
- Exploded Views
- Mechanism Connections
- Interference & Clearance Check
- **Drafting**
- 3D to 2D Drawing Generation
- Dimensioning & Tolerancing
- Assembly Drawings & BOM

**Project:**

- Design and Assembly of a Mechanical Sub-System

## Module 4: NX CAD – Advanced Product Design

Topics:

**Duration: 45 Hours**

**NX Fundamentals**

- NX Interface & Navigation
- Sketching & Feature Modeling
- Parametric Design Concepts

**Advanced Modeling**

- Solid Modeling Techniques
- Surface Modeling (Class-A Basics)
- Sheet Metal Design
- Feature Reuse & Expressions

**Assembly Design**

- Assembly Structure & Constraints
- Large Assembly Handling
- Exploded Views & Arrangement
- Product Validation Tools

**Drafting & Validation**

- Professional Drawing Creation
- PMI (Product Manufacturing Information)
- Design Validation & Checks

**Project:**

- Complete Product Design using NX CAD (Automotive / Industrial Component)

## Module 5: Industry Projects & Case Studies

Topics:

**Duration: 20 Hours**

- Automotive Component Design
- Manufacturing Industry Case Study
- Reverse Engineering Project
- Sheet Metal Product Design
- Portfolio Development
- Design Review & Presentation Skills

## Outcomes of the Program

- 2D and 3D mechanical designs
- manufacturable and cost-effective products
- complex assemblies and mechanisms
- sheet metal and industrial product designs
- GD&T, tolerances, and global drafting standards
- professional, job-ready product design portfolio

## Career Roles After Completion

- Product Design Engineer
- Mechanical Design Engineer
- CAD Engineer
- R&D Design Engineer
- Tool Design Engineer
- Automotive Design Engineer

# THANK YOU!

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# Contact Us


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