



IFS ACADEMY

Training For The Future!!

Industry Domain Oriented
PG Diploma in Engineering Design & Manufacturing
(CAD/CAM)
(Duration: 4 Months)
(With 100% Placement Assistance)

About the Course:

IFS Academy Certified Industry Domain Oriented Post Graduate Diploma courses in Engineering Design & Manufacturing (CAD/CAM) are designed in consultation with Industry Experts to impart industry domain-oriented Software training to fresh Mechanical Engineers so as to place them in industry. Course curriculum has been designed by taking inputs from 100+ Mechanical Design companies and their JD's. Our focus will be on Mechanical Design Fundamental concepts, 3D CAD & CAM Softwares and their industry domains by providing students with hands on case studies and live projects. The objective of the course is to make every student strong in fundamentals and train him on Design & Analysis Softwares along with domains like Plastic Design, BIW Fixture (Welding) Design, Surfacing & Sheetmetal Design, Seating System, Tool Design, SPM, Jigs & Fixtures.

Course Curriculum

1. Before we begin with Software & Industry Domains

Engineering Design, Drawing Reading, GD&T & Stack Up Analysis

Duration: 20 Hrs

Industry experts will be delivering these sessions.

- Basic Design Calculations and Standard Component selections
- Material Science Fundamentals: Solid Mechanics and Strength of Materials
- Selection of components with basic parameters and calculations
- Design sample industry domain-oriented parts / assemblies like SPM, Jigs & Fixtures and Material Handling Equipment's with parameters provided by Customer.
- Awareness of Engineering Standards like **ASME / ISO** related to **Geometric Dimensioning & Tolerancing (GD&T) & Stack Up Analysis**
- Drawing checking using Checklist
- **GD&T Symbols and Manufacturing Drawings**
- NC part programming, Training and Machining Centers, Other CNC Machines, General Programming Features, Cycles, Axes Movements, Tool Path Compensation, Preparatory Functions, Manual Part Programming for Lathe & Milling.

Note: Select any two Courses between Sr. No. 2 to 4. AutoCAD & NX CAM are compulsory.

1. AutoCAD for Mechanical Engineers

Duration = 30 Hrs.

- Overview of AutoCAD Mechanical Software
- Generate 2D Drawings
- Working on Industry Domain Oriented Case Studies / Projects like:
 - Preparation of Isometric / Piping Drawings
 - Preparation of GA Drawings
 - Preparation of System Layout
 - Working with GD&T Symbols in the Drawings
 - Detailing & Drafting

2. CATIA V5 Mechanical Design

Duration = 60 Hrs.

- CATIA V5 overview in Mechanical Design
- 3D Modeling, Parts, Assemblies, Sheetmetal & Surfacing
- Drafting & Detailing
- Working on Industry Domain Oriented Case Studies / Projects like:
 - Creating Surfacing & Sheetmetal Parts
 - Automotive Plastics Interior and Exterior Trims
 - Introduction to Seating System Design
 - BIW Welding / Fixture Design
 - BOM Creation
 - Product Design & Development
 - GD&T

3. Computer Aided Design using SolidWorks

Duration = 60 Hrs.

Note: Students can select Autodesk Inventor / Solid Edge Software instead of SolidWorks if the job requirement is available on these tools.

- SolidWorks overview in Mechanical Design
- Understanding 2D Drawings and converting them into 3D Models
- Sketch- Drafting & Detailing
- Assembly Modeling
- 3D Modeling and Drafting of Engineering Parts, Sub-Assemblies and Assemblies
- Creating Parametric Drawings with GD&T and Engineering Calculations
- AutoCAD to SolidWorks Models
- Working on Industry Domain Oriented Case Studies / Projects like:
 - SPM / Jigs & Fixtures / Machines and Equipments
 - Sheetmetal / Packaging Industry / Equipment Design
 - Machine Design
 - Sheetmetal Design

4. NX CAD for Design Engineers

Duration = 60 Hrs.

- CATIA V5 overview in Mechanical Design
- 3D Modeling, Parts, Assemblies, Sheetmetal & Surfacing
- Drafting & Detailing
- Working on Industry Domain Oriented Case Studies / Projects like:
 - Create 2D & 3D Tooling Processes
 - Tooling Designing
 - BIW Welding / Fixture Design
 - Automotive Plastics Interior and Exterior Trims
 - BIW Welding / Fixture Design
 - BOM Creation
 - Product Design & Development
 - GD&T

5. Computer Aided Manufacturing using NX CAM

Duration = 40 Hrs.

- CAM Manufacturing Fundamentals
- CAM Turning Manufacturing Process
- CAM Fixed-axis and Multi-axis Milling
- CAM Post Building Techniques

6. **Soft Skills Training**

Résumé writing, Aptitude Test, Technical Test, Group Discussion Techniques, Interview techniques, Communication & Presentation Skills, Personality Development.

Deliverables:

- Technical sessions from industrial and academic professionals on topics of engineering design and materials; engineering drawing and GD&T.
- Seminars and guidance from industrial professionals on soft skills training.
- **Autodesk Authorised Training in AutoCAD for Mechanical Engineers:**
Autodesk Authorised Certificate of Completion.
- **Dassault Systemes Authorised Certified Training Program in CATIA V5:** *Soft copy of Training Manual, Dassault Systemes Authorised Certificate of Participation & Login to EduSpace.*
- **NX CAD & NX CAM:** *Access to Learning Advantage, SIEMENS PLM Software Authorised Certificate of Completion.*

IFS Academy

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