Course Name : Additive Manufacturing- An Advanced Level Course
Course Duration: 40 Hrs.

Course overview

o Intended audience

This course is an Advanced level course suited for designers, engineers, manufacturing engineers, CAD/CAM managers, and system managers who need to manage use NX software and Projet MJP 2500 PLUS 3D Printer.

- Prerequisites

Education: Diploma completed or Degree 2nd year completed in any one of following Streams:

- Aeronautical, Automobile, Civil, Industrial, Marine, Mechanical, Mechatronics, Metallurgy, Production and Manufacturing Engineering.

Software: Siemens NX-Basics, basic knowledge on 3D Printing.

Should Complete Additive Manufacturing Intermediate Course.

- Course objectives

After successfully completing this course, you should be able to:

- Gain basic concepts of Design for Additive Manufacturing (DfAM)
- Understand Applications of AM in different fields like Medical, Automobile, and Aerospace
- Setup built volume of the Projet MJP 2500 plus in 3DSprint software.

- Course Contents

1. Introduction to the Industrial Application of Additive Manufacturing
2. Overview of Design for Additive Manufacturing (DfAM) Guidelines
3. Industrial Application in the Automobile Field
   - AM Process Flow for Automobile Models
   - Principles of DfAM: Topology Optimization, Lattice Structures, Lightweight Design
   - Software Tools for AM Design (e.g., Siemens NX)
   - Design Considerations Specific to Automotive Parts: Strength, Durability, Thermal Resistance
   - Examples: Lightweight Brackets, Ducting, Customized Interior Components
4. Industrial Application in the Medical Field
   - AM Process Flow for Medical Models
   - Open Source Software Tools for Medical Implant Design (e.g., 3D Slicer, Pro Surgical 3D)
   - Customization and Patient-Specific Device Design
   - Examples: Dental Crowns, Surgical Guides, Orthopedic Implants
5. Industrial Application in the Aerospace Field
   - AM Process Flow for Aerospace Models
   - Principles of DfAM: Topology Optimization, Lattice Structures, Lightweight Design
   - Software Tools for AM Design (e.g., Siemens NX)
   - Design Considerations for Aerospace Parts
   - Examples: Airbus A320 Nacelle Hinge Bracket
6. Built Volume Setup of Projet MJP 2500 Plus
   - Practical Sessions in 3DSprint Software
7. 3D Printing of Approved Designs on Projet MJP 2500 Plus
8. Post-Processing of MJP Printed Parts
9. Summary