

**Course Name** : **Additive Manufacturing- An Intermediate Level Course**

**Course Duration** : 40 Hrs.

**Course overview**

○ **Intended audience**

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

○ **Prerequisites**

- Education: Diploma completed or Degree 2<sup>nd</sup> 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.

○ **Course objectives**

- After successfully completing this course, you should be able to:
  - Gain basic concepts of Design for Additive Manufacturing (DfAM)
  - Create generative designs in NX software
  - Perform topology optimization in NX software
  - Generate lattice structures and implicit modelling in NX software
  - Setup built volume of the Project MJP 2500 plus in 3DSprint software.

○ **Course Contents**

1. Introduction
2. Design for Additive Manufacturing (DfAM) guidelines
3. Generative Design
  - i) Topology optimization
    - Practical sessions in NX software with exercises
  - ii) Convergent modelling
    - Practical sessions in NX software with exercises
4. Design of lattice structures
  - Practical sessions in NX software with exercises
5. Implicit Modelling
  - Practical sessions in NX software with exercises
6. Additive part validation
  - i) Wall thickness
  - ii) Overhang angle
  - iii) Printable volume
    - Practical sessions in NX software with exercises
7. Built volume setup of Project MJP 2500 Plus
  - Practical sessions in 3DSprint software.
8. Printing of approved designs on Project MJP 2500 PLUS Printer
9. Post Processing
10. Summary

