

ADVANCE COURSE

The 3D Printing Course from novabeans is first of its kind in the arena of creativity & computerised manufacturing techniques designed especially for children aged 9 years to advance learners and even creators aged above 55+ years. It is designed to enhance the technical understanding of materials used by them in their everyday life. It empowers them to make real world objects from concepts. It is full of fun and something that they can cherish throughout their lives.

Module 1 : 3D Computer Aided Designing

Targeted towards enhancing the creative and technical ability of the participant. The 3D Computer Designing Module is focused towards teaching a participant to create objects on computer.

Requirement

- ✓ Candidate to bring their own computer
- ✓ Candidate should have knowledge in Computers

We provide

- ✓ Notepad and Pens
- ✓ Course Materials and handouts

Topics

- I. Introduction of Designing in 3D
- II. Introduction to 3D Printing Design Iterations, Designing for 3D Printers & Concepts and Techniques
- III. Concept of 2D Drawing and 3D Drawing
- IV. Basic shapes identification
- V. Installing 3D CAD Software
- VI. Understanding the Concept of 3D Designing using Point, Vertices, Faces and their interaction
- VII. Understanding the Concept of Grouping
- VIII. Measuring for 3D Modelling on CAD
- IX. Boolean Operations and uses
- X. Scaffolding - Learning to convert a 2D Drawing into 3D Object
- XI. Learning the Software interface
- XII. Light, Camera and Actions
- XIII. Views, Zoom, Scale, Rotation, Pan and other elements of the software
- XIV. Hands on Designing using the concepts learned on in this course like Boolean, Grouping
- XV. Introduction to Materials & Textures
- XVI. Colouring your models
- XVII. Creating a models with Design & Materials Guidelines as per the 3D Printing / CNC Machine & Materials
- XVIII. Creating UV Textures Maps and packing for commercial printing
- XIX. Design Checking using 3D Printing Tools
- XX. 3D text and Printing
- XXI. Candidates have to participate in Design Challenge at the end of the course

Module 2 : 3D PROTOTYPING & MANUFACTURING

3D Prototyping is a technique and science of using CNC Machines to make objects from any 3D Design. The Course is focused on equipping the participant to understand the machine and how to use the machine. The Course introduces the concept of Additive & Destructive Manufacturing.

Focus

In the Advance Course; candidates learn both technologies - CNC+LASER and 3D Printing. 3D Printing is taught using FDM Technology with PLA or ABS Plastics. CNC+LASER is taught on MDF Wood.

Requirement

- ✓ Candidate to bring their own computer
- ✓ Candidate should have knowledge in Computers
- ✓ 3D Designing : Module 1

We provide

- ✓ 3D Model of Size 40mm x 40mm x 50mm of the candidates work in PLA or ABS Plastic (FDM Printer); Candidates have choice to upgrade their 3D Model to commercial printing by payment of extra fees.
CNC machine shall be provided to make a coaster of 40mm x 40mm; LASER engraving your coaster with personal message.

Topics

- I. Introduction of Manufacturing Techniques
- II. Importance of Computer Aided Manufacturing / Machines (CAM)
- III. Understanding Additive Manufacturing & Destructive Manufacturing
- IV. Additive Manufacturing Machines and theory
- V. Destructive Manufacturing Machines and theory
- VI. All about 3D Prototypers a.k.a 3D Printers - its functions, workings, settings, calibration, tools of trade and software interface..
- VII. All about Numeric Milling Machines - it's functions, programming, settings, calibration, tools of trade and software interface
- VIII. Hands on Classes on a 3D printer (ABS or PLA Plastics)
- IX. Hands on Classes on a CNC Milling + LASER Cutting Machine
- X. Practicals - Manufacture your object

