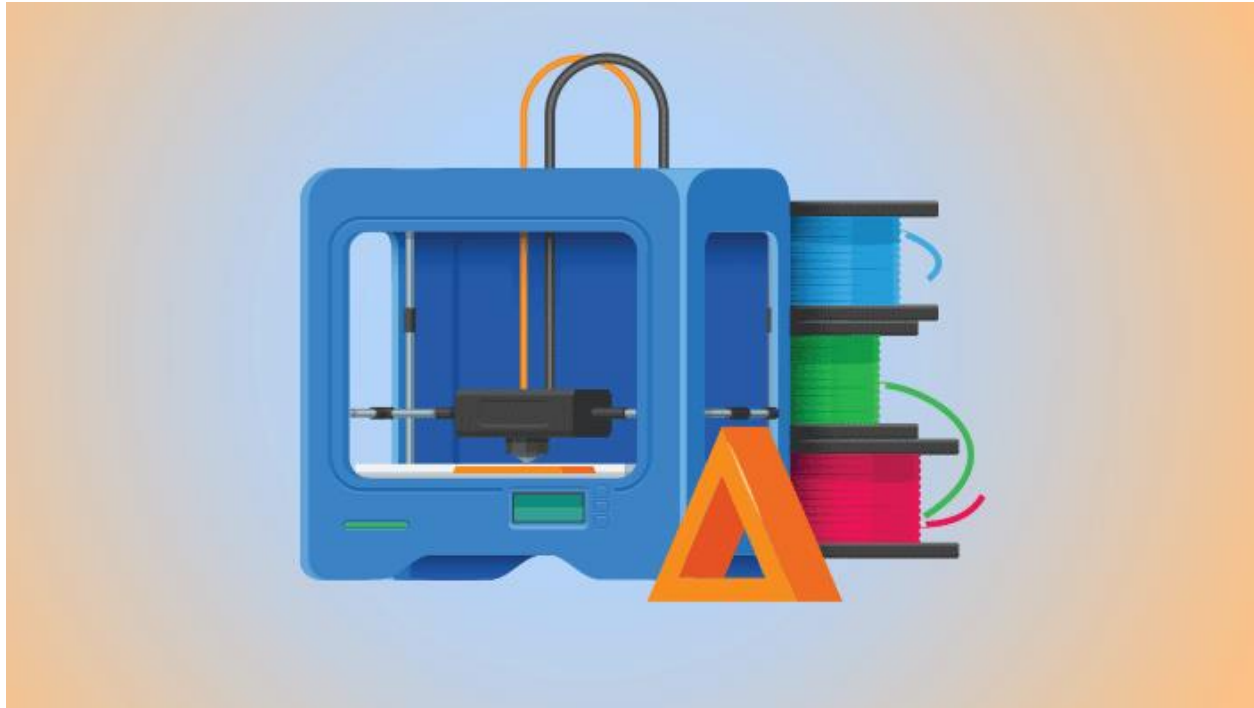


3D PRINTING COURSE



**TEACHER:
CERTIFIED
TRAINER**

**DURATION:
12 CLASSES (1 HOUR PER
CLASS)**

**MODE:
OFFLINE**

It is a process of making 3-dimensional solid object from a digital file 3D is shorthand for three-dimensional. When you print a page on a printer, there are only two dimensions: the front of the page and the back of the page. Three-dimensional printing adds a third dimension, volume. 3D printing uses a printer to create three-dimensional objects, for example, a cup or doll or phone case and replaces the wax models. This technology is currently used in many fields such as health, construction, food, engineering, aerospace, etc.

We complete on an average of 8-10 models as per the progress and speed of child in understanding the technology and its techniques.

COURSE CURRICULUM

1. Introduction to 3D Printing

- What is 3D printing? (Basic explanation)
- How does a 3D printer work? (Parts and process)
- Different types of 3D printers
- Basic safety rules while using 3D printers

2. Understanding 3D Design

- Introduction to 3D shapes and models
- Simple 3D design concepts (e.g., cubes, spheres)
- Hands-on: Building simple objects using modeling clay or craft materials

3. Introduction to 3D Design Software (Kid-friendly software like Tinkercad)

- Navigating 3D design software
- Understanding the workspace (grid, axes)
- Basic tools (move, rotate, scale)

4. Creating Simple 3D Models

- Hands-on: Creating basic objects (e.g., keychain, toy block)
- Adding shapes together to form complex models
- Saving and exporting designs for 3D printing

5. Preparing Models for 3D Printing

- Introduction to file formats (STL, OBJ)
- Slicing software overview (What it does and why it's important)
- Setting up a model for printing (layer height, infill, supports)

6. Printing Your First Model

- Loading the filament
- Starting the print
- Monitoring the printing process
- Troubleshooting common issues (e.g., print not sticking to the bed)

7. Post-Printing Process

- Removing the object from the print bed
- Cleaning and polishing the 3D-printed object
- Hands-on: Decorating or painting the printed object

8. Fun 3D Printing Projects

- Designing and printing simple toys (e.g., a car, animal figurines)
- Creating personalized keychains or name tags
- Group project: Building a mini 3D printed city or maze

9. Real-World Applications of 3D Printing

- Exploring different industries that use 3D printing (e.g., medicine, automotive, fashion)
- Fun examples: 3D-printed houses, food, and toys
- How 3D printing can help solve everyday problems

10. Wrap-up and Final Project

- Review of what was learned
- Final project: Design and print a custom object
- Show-and-tell of completed 3D prints