

## **RAPID PROTOTYPING LAB**

Rapid prototyping is a group of techniques used to quickly fabricate a scale model of a physical part or assembly using three-dimensional computer aided design (CAD) data. Construction of the part or assembly is usually done using 3D printing or "additive layer manufacturing" technology.

The first methods for rapid prototyping became available in the late 1980s and were used to produce models and prototype parts. Today, they are used for a wide range of applications and are used to manufacture production-quality parts in relatively small numbers if desired without the typical unfavorable short-run economics. This economy has encouraged online service bureaus. Historical surveys of RP technology start with discussions of simulacra production techniques used by 19th-century sculptors. Some modern sculptors use the progeny technology to produce exhibitions. The ability to reproduce designs from a dataset has given rise to issues of rights, as it is now possible to interpolate volumetric data from one-dimensional images.

### **Classification of Rapid Prototyping:**

- ✓ Liquid-Based
- ✓ Stereolithography (SLA)
- ✓ Solid-Based
- ✓ Fused Deposition Modeling (FDM)
- ✓ Laminated Object Manufacturing (LOM)
- ✓ Powder-Based
- ✓ 3D Printing
- ✓ Selective Laser Sintering (SLS)
- ✓ Direct metal laser sintering (DMLS)

### **RPT MACHINE: STRATASYS F270**

Stratasys F270 Features:

- 305 x 254 x 305 mm build envelope (44% bigger than F170)
- 3 materials – ABS, PLA, ASA
- GrabCAD Print™
- 4 slice heights
- 4 material bays
- Auto material change-over

## Software's Installed:

- GrabCAD Print™ (TO PRINT 3D PARTS)

## Smarter Software:

GrabCAD Print™ software simplifies the entire 3D printing process with an intuitive CAD-like application anyone on your team can use. And with features like detailed reporting and remote monitoring, you can easily manage your print jobs from outside the office. Combined with the ability to seamlessly share projects between users, it all adds up to a more streamlined, efficient workflow.

- The new Stratasys F270 is easy to operate and maintain for all levels of experience. And, it's adept at every prototyping stage, from concept verification to design validation to functional performance.
- Minimal setup means you can simply plug and play to give your entire office access to professional 3D printing.
- Auto-calibration ensures you spend less time troubleshooting and more time prototyping.
- Fast and easy material swaps to help maximize your design team's productivity.

## Courses Offered:

S.No	Domain	Course Name	Hours	Mandatory Prerequisite
1	RPT	Rapid Prototyping Technology	16	Essential for NX Designers / Any CAD Software