



**KARUNYA INSTITUTE OF TECHNOLOGY AND SCIENCES**  
(Declared as Deemed to be University under Sec. 3 of the UGC Act 1956)  
A CHRISTIAN MINORITY RESIDENTIAL INSTITUTION  
AICTE Approved & NAAC Accredited  
Karunya Nagar, Coimbatore - 641 114, Tamil Nadu, India

## **DEPARTMENT OF MECHANICAL ENGINEERING**

### **3D PRINTING LABORATORY**

3D printing, also known as additive manufacturing, is a broad term describing fabrication processes that generate physical objects in a layer-by-layer fashion. This 3D printing lab enables students to design and produce complex shapes using less material than traditional manufacturing methods. Students learn to calibrate and post processing techniques on FDM based and SLA Printers. Students also get to work on another cutting-edge technology in the manufacturing is reverse engineering. They will use the 3D scanner to generate the CAD models through 3D Scanner.

#### **COURSE OBJECTIVES:**

To impart knowledge on

1. The basics of additive manufacturing/rapid prototyping.
2. The generation, working and analysis of STL files.
3. Building complex geometries, printing and post-processing techniques.

#### **COURSE OUTCOMES:**

After completing the course, the students will be able to

1. Demonstrate the working principles of Additive Manufacturing.
2. Design complex / creative models ready for 3D printing.
3. Develop STL file for CAD models with appropriate support structures and Orientation
4. Build complex engineering assemblies in plastic material with minimum build-time
5. Evaluate the process parameters of AM machine to improve the quality of the parts produced
6. Model and fabricate working models using AM processes.

**Facilities available for regular class work, project, research and consultancy**

- ✓ FDM Printers
- ✓ SLA Printer with Washing and Curing unit
- ✓ 3D Scanner (Table Top)

**Industry matching equipments (if any)**

**Major equipments**



Figure 1. Creality Ender 5 Plus 3D Printer (FDM)



Figure 2. Anycubic Photon SLA Printer



Figure 3. Anycubic Photon Washing and UV Curing unit



Figure 4. Shining 3D: EinScan SE 3D Scanner

Lab In-Charge:

Dr. M.Wilson Kumar, M.E., Ph.D., Assistant Professor (SG)



Lab Technicians:

Mr. Jaya Seelan, D.M.E., Mechanic Grade II

