

**DEPARTMENT OF MECHANICAL ENGINEERING**  
**AMAL JYOTHI COLLEGE OF ENGINEERING**  
**Consultancy and Testing facilities**

**1. LASER CUTTER & ENGRAVER**

Make and Model	Mehta EVA-II-21
Laser power	60 watt
Laser source	Sealed Glass CO <sub>2</sub> laser tube
Cutting area	600 x 457 mm
Driving system	Stepper motor
Travelling speed	0.1 to 600mm/sec
Repository accuracy	0.02mm

**Usage Charges:**

Internal	External
75 Rs / Hour	100 Rs / Hour



**2. 3 D PRINTER**

Make and Model	Deltasys eforming e-Maker
Printing Technology	Fused Deposition Modelling
Filament Diameter	1.75 mm
Nozzle Size	0.4mm
Print volume	240 mm x 230 mm x 250 mm
Nozzle temperature (°C) max.	260
Bed temperature (°C) max.	100
Max Print Speed	350 mm/s
Filters	HEPA and Carbon filter
Compatible materials	PLA,PVA, HIPS, ABS, TPU

**Usage Charges**

Internal	External
75 Rs / Hour	100 Rs / Hour



### 3. 3 D PRINTER

Make and Model	Creality Ender 3 - V2
Printing Technology	Fused Deposition Modelling
Filament Diameter	1.75 mm
Nozzle Size	0.4mm
Print volume	220 mm x 220 mm x 250 mm
Nozzle temperature (°C) max.	255 °C
Bed temperature (°C) max.	100 °C
Max Print Speed	180mm/s
Compatible materials	PLA, ABS, PETC, TPU



#### Usage Charges

Internal	External
75 Rs / Hour	100 Rs / Hour

### 4. 3 D PRINTER WITH LASER ENGRAVER

Make and Model	Creality Ender 3 Pro+ Laser Engraver		
	<b>3D Printer</b>		<b>Laser Engraver</b>
Printing Technology	Fused Deposition Modelling	Laser Power	2.3 W
Filament Diameter	1.75 mm	Wave Length	445 nm
Nozzle Size	0.4mm	Beam shape	Dot (Focusable)
Print volume	220 mm x 220 mm x 250 mm		
Nozzle temperature (°C) max.	255 °C		
Bed temperature (°C) max.	110 °C		
Max Print Speed	180mm/s		
Compatible materials	PLA, ABS, PETC, TPU		

#### Usage Charges

Internal	External
75 Rs / Hour	100 Rs / Hour



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## 5. 3D SCANNER WITH WORKSTATION

<b>3D Scanner</b>		<b>Workstation</b>	
Make and Model	Thor 3D	Make and Model	Dell Precision T3650
Scan Mode	Handheld Scan	Processor	Intel Core i9 - 11900 (16MB cache, 8 core, 2.5 to 5.2 GHz)
Accuracy	Up to 0.07 mm	Memory	16GB DDR4 3200MHz RAM x 4
Working distance	Up to 0.1mm over 1 m	Storage	512 GB SSD, 1TB HDD
3D reconstruction rate	25 – 30 fps	Graphics Card	Nvidia RTX 3060 (12GB)
Max. Data Acquisition speed	3M points/sec	Display	24" Full HD IPS Monitor DELL (P2422H)
Max. Point resolution	0.15 mm		
Depth of view	180 - 300 mm		
Field of view	Min: 86 mm x 115 mm Max: 144 mm x 192 mm		
Light source	Blue LED		

### *Usage Charges*

Internal	External
75 Rs / Hour	100 Rs / Hour



## 6. CNC ROUTER

Make and Model	Mehta 1325 - II
Bed Size	8 feet X 4 feet
Spindle	6 kW Air Cooled HSD Italian
Max. Spindle Speed	18000 rpm
Max. Travelling Speed	25 m/min
Cutting Tool Diameter	3 – 16 mm
X Y Axis Travelling	Rack & Pinion

### *Usage Charges*

Internal	External
75 Rs / Hour	100 Rs / Hour



## 7. PCB PROTOTYPE MACHINE

Make	CNC Wegstr
Milling Workspace	140 mm X 200 mm X 40 mm
Machine dimension	380 mm X 460 mm X 290 mm
Spindle	Brushless motor
Spindle diameter	3.175 mm
Connectivity	USB
Spindle speed	11000 rpm
Repeatability	0.02mm
Machine weight	7kg

### *Usage Charges*

Internal	External
75 Rs / Hour	100 Rs / Hour



## 8. MIXED SIGNAL OSCILLOSCOPE

Make	RIGOL MSO7024
Sampling Rate	1 Channel with 10 GSa/s 2 Channel with each 5 GSa/s 4 Channel with each 2,5 GSa/s
Bandwidth	200 MHz
Scope Channels	4+16
Scope Display Type	25.65 cm (10.1") capacitive multi-touch screen
Display Memory Depth	100M record length (upgradeable to 500M via optional software)

### *Usage Charges*

Internal	External
75 Rs / Hour	100 Rs / Hour



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## 9. MANUAL COORDINATE MEASURING MACHINE

Make	Mitutoyo, Japan
Model	Crysta Plus M443
Measuring range	400 x 400 x 300 mm
Resolution	0.0005 mm
Probing system	Renishaw make probe head with Ruby Styli
Software interface	MCOSMOS - 1

### *Usage Charges*

Internal	External
75 Rs / Hour	100 Rs / Hour



## 10. CRYOGENIC TREATMENT LABORATORY

### Major Equipment

1. Sub-zero treatment unit (can go up to  $-80\text{ }^{\circ}\text{C}$ )
  - Make Chilton
  - 150L capacity
  - Three chamber
  - $-85^{\circ}\text{C}$  lowest temp
2. Cryo Chamber (can go up to  $-196\text{ }^{\circ}\text{C}$ )
  - Capacity 60L
  - Liquid nitrogen cooling
  - Three thermocouple
  - $-196^{\circ}\text{C}$  lowest temp
3. Liquid Nitrogen transferring device
4. Liquid Nitrogen Containers
  - 2nos
  - 50liter each capacity

### Usage Charges

Internal	External
75 Rs / Hour	100 Rs / Hour

