



RAMCO INSTITUTE OF TECHNOLOGY

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Accredited by NAAC & An ISO 9001:2015 Certified Institution
NBA Accredited UG Programs: CSE, EEE, ECE and MECH

Department of Mechanical Engineering

Academic Year 2021 – 2022 (Odd Semester)

Innovative practice(s) description

Course code and Title: ME8381-Computer Aided Machine Drawing

Class/Semester: III Semester B.E. Mechanical Engineering 'A & B'

Name of the Instructor(s):Mr.R.Venkatesh, AP/Mech & Mr.S.Valaiganesh, AP/Mech

Mr. C.Gururaj, AP(SG)/Mech & Mr.M.Ramar,AP/Mech

Date & Time: 29.09.2021 & 1.20 PM to 3.50 PM

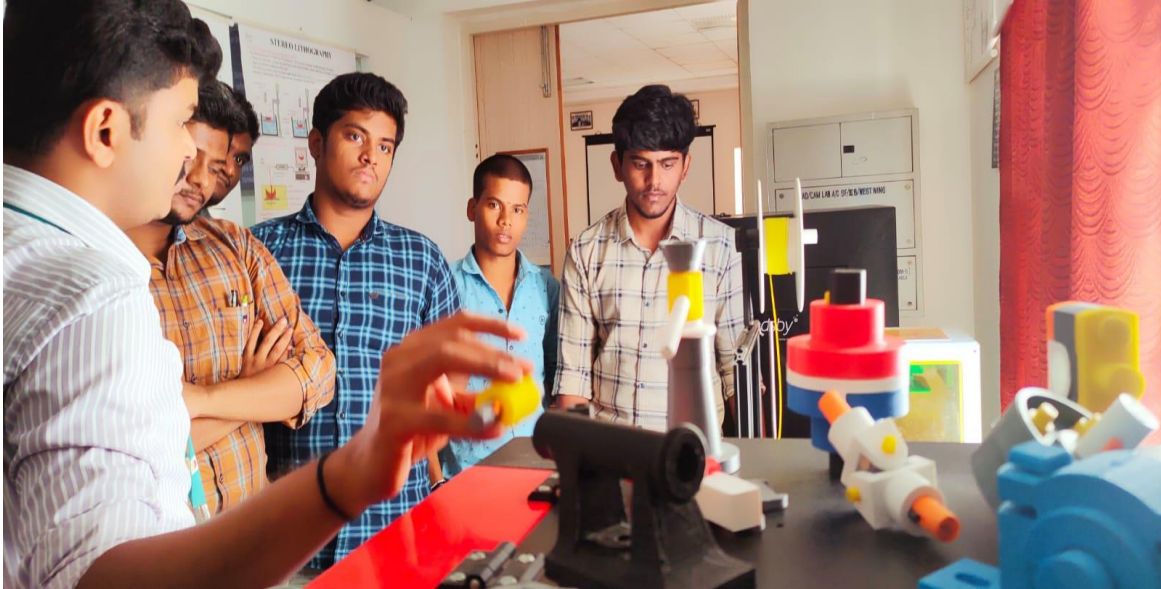
Demo & Hands on Practice

Explaining the assembling procedure by using the machine components fabricated by AM Techniques

3D printing, also known as additive manufacturing (AM), is the process of creating a three-dimensional object from a CAD model or digital 3D model. The "3D printing" can refer to a number of procedures in which material is deposited, combined, or solidified under computer control to form a three-dimensional object.

Students were separated into groups to fabricate 3D printed components; initially, students were taught CAD modelling and assembly techniques using 3D modelling software. They were involved in adjusting the process settings and slicing the components using the *Cura* slicing programme after the design stage. The output of G code is feed into the FDM machine to fabricates the final components.





Outcomes:

- Gaining practical experience with 2D and 3D drawing software systems.
- Students will demonstrate a basic technical understanding of the physical principles, materials, and operation of the types of AM processes.
- Students will understand models of material processing phenomena and apply them to simulate AM process operations.
- When the students have finished assembling the components, they create a prototype of machine components.

This activity (demo & hands on practice) helps in attaining the following CO – PO & PSO Mapping:

Course Outcome / Programme Outcomes/ Programme Specific Outcomes	PO1	PO5	PO9	PSO1
CO5 – Manipulate the modeling and modifying commands of 3D CAD Modeling Package.	3	3	-	3
CO6 – Assemble the 3D model of Machine components.	3	3	2	3

References:

1. Gopalakrishna K.R., “Machine Drawing”, 22nd Edition, Subhas Stores Books Corner, Bangalore, 2013
2. N. D. Bhatt and V.M. Panchal, “Machine Drawing”, 48th Edition, Charotar Publishers, 2013.