

Branch Name:	Mechanical Engineering (CAD/CAM)
Program Code:	ET201
Course Name:	Rapid Prototyping And Tooling - Practical
Course Code:	2ET2010205P
Pre-requisite Course:	Zeal to learn the subject

Course Objectives:

1. Generating a good understanding of RP history, its development and applications.
2. Expose the students to different types of Rapid prototyping processes, materials used in RP systems and reverse engineering.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-	-	-	10	25	10	25	50

Subject Contents:

Sr. No	Detail of Practicals	Contact Hours
1	Review of CAD Modeling Techniques and Introduction to RP	04
2	Generating STL files from the CAD Models & Working on STL files	02
3	Processing the CAD data in Catalyst software (Selection of Orientation, Supports generation, Slicing, Tool path generation)	02
4	Simulation in Catalyst Software.	02
5	Fabricating the physical part on a RP machine.	02
6	Learning techniques for fabricating an assembly.	02
7	Prepare a CAD model with complex geometry and study effect of slicing parameters on final product manufactured through RP.	02

List of Reference Books:

1. Paul F. Jacobs, Rapid prototyping & Manufacturing Fundamental of sterolithography, SME Publications
2. Amitabh Ghosh, Rapid Prototyping, East West Press Pvt. Ltd
3. Chua C. K., Leong K. F. and Lim C. S., Rapid Prototyping, Principles and Application, World scientific publishing Co. Pvt. Ltd., Singapore
4. Andreas gebhardt, Rapid prototyping, Hanser gardner publications, USA
5. Kenneth g. cooper, Rapid prototyping technology.
6. Noorani R, Rapid Prototyping: Principles and Applications in Manufacturing, John Wiley & Sons.

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand and use techniques for processing of CAD models for rapid prototyping.	2 Understanding
CLO2	Analyze the role of rapid prototyping in product development cycle	4 Analyze
CLO3	Integrate design concepts with CAD or reverse engineering for geometry preparation for Rapid prototyping of part.	3 Applying
CLO4	Analyze the working of different rapid prototyping systems and recommend suitable process for a given material and application.	4 Analyze
CLO5	Explain the concept of rapid tooling.	2 Understanding
CLO6	Analyze the process chain of different rapid prototyping systems and create a pathway for rapid manufacturing.	5 Evaluating

Mapping of CLOs with POs & PSOs:

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CLO1	M				M	L							M	
CLO2			M		M						L			L
CLO3				M		M			L				L	
CLO4				M	M					M				M
CLO5		M	M										M	
CLO6							M	L				L		M

H: High, M: Medium, L: Low