

Branch Name:	Mechanical Engineering (CAD-CAM) Mechanical Engineering (Production Technology)
Program Code:	ET201, ET209
Course Name:	CAD/CAM Software Practice
Course Code:	2ET2010104P
Pre-requisite Course:	Basic Knowledge of computer aided Drafting.

Course Objective:

1. Modeling software can be used for design, analysis and manufacturing. Students will be familiar with software and its capabilities in design.
2. Sketch and modify engineering product model.
3. Modify existing products and create new product model using software.

Teaching and Examination Scheme:

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

Subject Contents

Sr. No.	Topic	Total Hours	Weight (%)
01	Introduction: Introduction about modeling software, User Interface Overview, File operations.	02	08
02	Sketch Operations: Sketch Mode, Drawing a Sketch, Dimensioning a Sketch, Working with Constraints, Modifying Dimensions, Deleting, Trimming, Mirroring, Palettes Fillets, Splines, Text in Sketches, Importing Sketches Scaling and Rotating.	04	16
03	Solid Modeling: Extrude, Revolve, Default Datum Planes Holes, Rounds, Chamfers Ribs, Editing Features, Sweep Features, Blend Features Shell, Datum Curves, Draft Features, Variable Section Sweep Swept Blend, Helical Sweep, Blend Section to Surface Blend Between Surfaces, Toroidal Bend, Spinal Bend, Warp, Patterns, Copying Features, Mirroring Geometry, Model Sections.	07	28
04	Assembly Modeling: Assembly Files, Top-Down Method, Bottom-Up Method, Placement, Constraints, Packaged Components, Component Operations View States, Bill of Materials.	04	16
05	Drawings: Drawing Files, Templates, Drawing Views, Drawing Sections, Drawing Options, Dimensioning Drawings, Reference Datum's, Geometric Tolerance, Note, Sketches in Drawings, Formats, Tables, Bill of Materials, Balloons.	02	08
06	Surface Modeling: Style Feature, Boundary Blends, Mirror and Merge, Trim and Fill, Intersect and Offset, Thicken and Solidify.	04	16
07	Sheet Metal Modeling: Sheet Metal File Sub-type, Walls, Adding Relief, Conversion, Cuts, Flat Pattern.	02	08

Course Outcome:

1. Students should be able to create components model in software packages.
2. Students should be able to modify the existing model s.
3. Students should be able to understand the models capabilities for manufacturing aspects.

List of References:

1. Geometric Modeling, Mortenson, M.E., John Wiley & Sons, NY, 1985.
2. Mastering CAD/CAM (SIE), Ibrahim Zeid, McGraw Hill

List of Experiments:

1. Introduction to modeling software.
2. Study of Sketch and making models using software.
3. Study of Solid Modeling and making models using software.
4. Study of Wire frame Modeling and making models using software
5. Study of Surface Modeling and making models using software.
6. Study of Assemblies and making models using software.
7. Making Model from drawing using software

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

CLO	Description	Bloom's Taxonomy Level
CLO1	Discuss about different software used for modeling, design and analysis of mechanical components and systems.	1 Remembering 2 Understanding
CLO2	Able to create components model in software packages.	3 Applying
CLO3	Able to modify the existing models.	3 Applying 4 Analyze
CLO4	Able to understand the models' capabilities for manufacturing aspects.	5 Evaluating
CLO5	Analyze the model for practicability and probable chances of getting desirable solutions.	4 Analyze 5 Evaluating
CLO6	Able to create new components based on different parameters like material and their properties, dimensions and compare them with existing without producing physically.	6 Creating

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					L						M	M	
CLO2	M		M		L									M
CLO3		M	M	H	M								M	
CLO4			H	M		L	L						H	
CLO5	M		M		L								L	
CLO6	M		M		H	L					L	L		H

H: High, M: Medium, L: Low