DRAFTING AND MODELLING LAB

Course Code	20SO8353	Year	II	Semester	I
Course Category	Skill oriented course	**Branch**	ME	**Course Type**	Lab
Credits	2	**L-T-P**	1-0-2	**Prerequisites**	NIL
Continuous Internal Evaluation	0	**Semester End Evaluation**	50	**Total Marks:**	50

Course Outcomes: Upon successful completion of the course, the student will be able to

CO	Statement	Skill	BTL	Module
CO1	**Develop** 2D & 3D models.	Develop	L3	Sketcher, Part Design
CO2	**Prepare** 3D assembly from the part models.	Prepare	L3	Assembly

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3: High, 2: Medium, 1: Low)														
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	1		1		3					3			3	1
CO2	1		1		3					3			3	1

Syllabus		
Module	**Contents**	**COs**
SKETCHER	**The following tasks to be done by 3D software package - CATIA** : Introduction to CATIA Software, Workbench Introduction, Types of Sketches, Creating profiles, Practice of Profile tool bar with 3 to 4 Basic sketches. Sketcher constraints, sketcher operations, Practice 5 sketches with different Constraints. Transformation of profiles, Projection from 3D elements, Practice of transform tools with suitable sketches. Sketch analysis, Sketch modifications, Create 5 to 10 Sketches with Iso Constrain.	CO1
PART DESIGN	Workbench Introduction, Reference Elements, Practice of types of point, line and planes, Basic Solid Features, Practice of basic 2D to 3D parts, Advanced Solid Features, Practice of Ribs, Slots & Multi-sections. Dress up features, Practice of Fillets, chamfers, shell, Advanced Dress up features, Practice of Draft and other features. Transformation of solids, Practice of Pattern, mirror & Scaling. Introduction to Body concept, Explain the needs of Body concepts, Boolean operations, Practice 3D models using Booleans, Editing solid geometry, Editing & replacing of Bodies, sketches.	
ASSEMBLY	Introduction to Workbench, Importing of Parts & Products, Practice of Product structure tools with basic Assembly. Assembly Constraints, Practice of various Constraints tools. Types of Assembly – approach, Top Down Assembly, Creating 2 to 3 assemblies with top down approach. Bottom Up Assembly, Creating assemblies by importing parts.	CO2

Learning Resources
Text books
1. Machine Drawing by K.L.Narayan, P.Kannaiah and K.Venkata Reddy, 5th edition, New Age Publications 2016.
Reference books
1. Machine Drawing, by R.K.Dhawan, S. Chand Publications, New Delhi, 2016.   2. Text Book of Machine Drawing by K.C.John, PHI Learning Pvt.Ltd., New Delhi, 2010.