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		
CO1	Develop 2D & 3D models.	L3
CO2	Prepare 3D assembly from the part models.	L3
Course Content		
The following tasks to be done by 3D software package - CATIA		
SKETCHER	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.	