

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING& TECHNOLOGY									
Programme	Bachelor of Technology				Branch/Spec.	Mechanical Engineering			
Semester	III				Version	2.0.0.0			
Effective from Academic Year	2019-20				Effective form the batch Admitted in	July 2018			
Subject code	2ME3101		Subject Name	Solid Modelling					
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	0	0	2	0	2	Theory	00	00	00
Hours	0	0	2	0	2	Practical	30	20	50
Pre-requisites:									
<ul style="list-style-type: none"> • Knowledge of Engineering Graphics • Ability to visualize different views of the object 									
Learning Outcome:									
After learning this course, student should be able to:									
<ul style="list-style-type: none"> • Get acquainted with modelling software like Solid Works, Creo, etc., • Generate details engineering drawing, General arrangement drawing, Bill of Material etc. in minimum time • Model components and assembly • Components and assembly analysis can be done 									
Theory syllabus									
Unit	Content							Hrs	
1	Introduction to modeling software: System requirements, important terms and definitions, file menu options, managing file, Function of mouse, various toolbars.							2	
2	Sketcher: Configuring for sketcher, Setting sketching environment, Creating sketcher geometry, Modifying sketcher geometry, Dimensioning sketcher geometry, Constraining geometry, To study of Different entities : line, circle, rectangle, arc, ellipse, text, plane, point, fillet, polygon, straight slot, trim entity, convert entity, offset entity, mirror entity, linear sketch pattern, move entity, rapid sketch, quick sketch, repair sketch, Display delete relation.							4	
3	Part modeling: Basic (Parent child relationship), Base feature, Create datum's features, Edit features, Engineering features, Advanced features, Creating drawing, Working model views, Dimensioning and detailing your models, Controlling drawing details with layers, Importing and exporting data, Features: extrude boss/base, revolved boss/base, swept boss, lofted boss, boundary boss, extrude cut, hole wizard, revolve cut, swept cut, lofted cut, boundary cut, fillet, pattern, rib, draft, dome, mirror, reference geometry, curves, instant 3D							18	
4	Assembly: Reading top-down assemblies, creating bottom-up assemblies, Placement constraints, Assembly datum planes, assembling the components, redefining the components of the							8	

	assembly, reordering the components, modifying the components of the assembly, the bill of material, Mechanism & animations: Motor, Spring , Contact, Gravity, Animation wizard, Motion study properties, Save animation, Play back mode. Edit component, insert component, mate, smart fasteners, move component, show hidden component, assembly features, reference geometry, Linear component pattern, bill of materials, exploded view, Interference detection, clearance verification, hole alignment, mass property, Section property, sensor, assembly visualization, symmetry check.	
5	Drawing: View lay out, model view, projected view, auxiliary view, and section view, detail view, broken out section, break, and crop view. Annotation : smart dimension, model items, spell checker, format painter, note, balloon, surface finish, weld symbol, hole callout, geometric tolerances, datum features, datum target, area hatch/fill, blocks, centre mark, centre line, revision symbol, tables.	10
Practical content		
The term work shall be based on experimental and analytical work on topics mentioned above		
Text Books		
1	Bible, Matt Lombard, “Solid works 2010”, Wiley Publishing, Inc. Manual from the solid works web site.	
Reference Books		
1	Sham Tikoo, “Solid works for engineers & designers”, Release – 2011	
2	Sham Tikoo, “Pro/Engineer PTC Creo Parametric 3.0 for Engineers and Designers” Release – 2015	
ICT/MOOCs references		
1	https://nptel.ac.in/courses/112102101/37	
2	https://www.youtube.com/watch?v=6c852zSMrSs&list=PLBHP-24ac73ScwMuQfgToQobHtsBZILe (INTRODUCTION TO MODELING SOFTWARE)	
3	https://www.youtube.com/watch?v=DsqCEPlxVek&list=PL8MELgWj0RxP-DAUJ25h9Nwp_gKAEK2w (SKETCHER)	
4	https://www.youtube.com/watch?v=6c852zSMrSs&list=PLBHP-24ac73ScwMuQfgToQobHtsBZILe (PART MODELING)	
5	https://www.youtube.com/watch?v=pCDyFsBugsE (ASSEMBLY)	
6	https://www.youtube.com/watch?v=KJdlN4UekQ (DRAWING)	