

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING AND TECHNOLOGY (DIPLOMA PROGRAMMES)									
Programme	DIPLOMA				Branch/Spec.	Mechanical Engineering			
Semester	I				Version	1.0.0.0			
Effective from Academic Year	2018-19				Effective for the batch Admitted in	June 2018			
Subject code	1ES114		Subject Name	Engineering Drawing					
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	0	2	0	4	Theory	40	60	100
Hours	2	0	4	0	6	Practical	60	40	100
Pre-requisites:									
Learning Outcome:									
After completions of this course, students will able to:									
<ol style="list-style-type: none"> 1. Understand and draw different geometrical shapes like polygons, circles and lines with different geometric conditions. 2. Able to draw engineering curves with proficiency and speed as per given dimensions. 3. Find out true shape and size of inclined line and plane. 4. Understand the orthographic views of object containing lines, circles and arc geometry. 5. Understand the isometric view from orthographic views of objects containing lines, circles and arcs. 									
Theory syllabus									
Unit	Content								Hrs
1.	<u>Introduction</u> Importance of engineering drawing, engineering drawing instruments and their uses, pencil grades and its applications. Different types of Lines. Types of lettering. Types of Dimensioning methods. (Aligned, Unidirectional, Parallel and Chain).								1
2.	<u>Geometric Construction</u> <ul style="list-style-type: none"> • Geometric construction related example with line like bisecting a line, divide a line, etc. • Geometric construction related example with angle like bisect an angle, trisect an angle, etc. • To construct polygon with different methods (Special method, General Method). • To draw tangents. • Geometric construction related example with circle and arc. 								3
3.	<u>Engineering Curves</u> Classification and application of engineering curves, construction of conic curves (like parabola, ellipse, hyperbola) with different methods, construction of cycloidal curves (like cycloid, epicycloid, hypocycloid), Archimedean Spiral, Involute of different shapes (like polygon, circle).								6
4.	<u>Projection of Points and Lines</u> <ul style="list-style-type: none"> • Reference planes, Concept of quadrant. • Projection of points. • Projection of lines – determination of true length and inclinations for following cases - <ol style="list-style-type: none"> a) Line parallel to one or both the plane. b) Line perpendicular to one plane. c) Line inclined to one plane and parallel to another plane. d) Line inclined to both the planes. 								5
5.	<u>Projection of Planes</u> <ul style="list-style-type: none"> • Types of Planes. • Projection of planes for following different conditions - <ol style="list-style-type: none"> a) Plane parallel to one of the reference planes. b) Plane inclined to one reference plane and perpendicular to another plane. 								5

	c) Plane inclined to both reference planes.	
6.	<u>Orthographic Projections</u> <ul style="list-style-type: none"> • Method of projections with their symbol – 1st and 3rd angle projection. • Conversion of simple pictorial views into orthographic views, Illustrative problems on orthographic projection. (Problem restricted up to four views like front view, top view and side view). 	5
7.	<u>Isometric Projections</u> <ul style="list-style-type: none"> • Isometric axis, lines and planes, Isometric scales. • Difference between isometric view (projection) and isometric drawing. • Conversion of orthographic views into isometric projection containing lines, circles and arcs only. 	5
Practical content		
Practicals are based on above syllabus. <ol style="list-style-type: none"> 1. Draw Geometric Construction problems. 2. Draw Engineering Curves problems. 3. Draw Projection of Lines problems. 4. Draw Projection of Planes problems. 5. Draw Orthographic Projections problems. 6. Draw Isometric Projections problems. 		
Text Books		
1.	Engineering Drawing, P. J. Shah, S. Chand Publication, New Delhi.	
Reference Books		
1.	Elements of Engineering Drawing, N. D. Bhatt, Charotar Publishing House, Anand.	
2.	Engineering Graphics, Arunoday Kumar, Tech-Max Publications, Pune.	