

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme	Diploma Engineering				Branch	Civil Engineering			
Semester	IV				Version	1.0.0.0			
Effective from Academic Year		2019-20			Effective for the batch Admitted in			June 2019	
Subject code	1CI2406		Subject Name		Drafting Tools				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	0	0	1	0	1	Theory			
Hours	0	0	2	0	2	Practical	30	20	50

Pre-requisites:
The students should know basic fundamental of subject engineering drawing, building drawing and software tools.

Course Learning Outcomes:
The course content should be taught and implemented with an aim to develop different skills leading to the achievement of the following competencies and course learning outcomes:
CO1. Computer Aided Drawing (CAD) is play important role of technological innovation that has had a helpful on the drawing preparation and in civil engineering industry and other fields .
CO2. Drawing is the tool by which civil engineer can express engineering detailing like layout of site, plan ,elevation, section with interior details and design output to be used by marketing office, Client, Concern authority for execution, approval and for other works.
CO3. Use advanced CAD commands for edit/modification of existing drawings as per needs and Suggestions and prints the same.

Course Content				
Name of UNIT	Unit Content	Unit Learning Outcomes	Marks	Hrs
UNIT – 1 INTRODUCTION TO CIVIL ENGINEERING SOFTWARE	1.1 File menu of AutoCAD with New, Open, Save, Save as and Close. 1.2 Basic 2D commands like Line, Circle, Ellipse, Multi Line. 1.3 Construction Line, Polyline, Point, Donut, Ellipse, Polygon, Rectangle, Arc. 1.3 Erase, Snap, Redraw, regenerate, Zoom, Pan.	1a. Demonstrate the basics of AutoCAD software and its important commands. 1b. Prepare a simple building drawing file using basic draw and modify commands. 1C. Demo lecture of R.C. Beam (Analysis and design) in Staad pro.	--	06
UNIT – 2 EDITING OF AUTOCAD DRAWING	2.1 Modify Properties of Drawing. 2.2 Copy, Move, Rotate, Mirror, Offset. 2.3 Array, Scale, Stretch, Lengthen, Trim. 2.4 Extend, Break, Chamfer, Fillet. 2.5 Block, WBlock, Insert and Explode , Area and Volume with Civil Engineering Application	2a. Explain the applications of Edit commands. 2b. Modify existing AutoCAD Drawing. 2c. Apply advanced command for edit /modification of drawing.	--	04

UNIT – 3 ADVANCED 2D COMMANDS	3.1 Application of LAYER command in Civil Engineering. 3.2 Layer command with its all sub commands, Line type, Colour. 3.3 Dimension command – linear, aligned, arc length, radius, diameter, Centre, Leader, Baseline and Continuous Dimensioning, tolerance, override and Dimension updates. 3.4 Text and DTEXT commands with Text Style Hatch command.	3a. Prepare typical Drawings Using Different Layers. 3b. Develop final Drawings with Dimension and Text and Hatching.	--	06
UNIT – 4 3D COMMANDS OF AUTOCAD	4.1 Units, Elevation, Thickness, UCS and UCS Icon. 4.2 Viewports , Extrude , 3D Solids Sphere, Box, Cylinder, Cone, Wedge, Interference. 4.3 3D Surface Revolved, Tabulated and Ruled Surfaces. 4.4 Hide, Render and Shade of 3D drawings.	4a. Use 3D commands to generate 3d view from 2D drawing. 4b. Prepare 3D Drawings using 3D Commands of AutoCAD. 4c. perform rendering/shading on 3d drawing.	--	08
UNIT – 5 PLOT OF 2D & 3D DRAWINGS	5.1 PLAN, ELEVATION and 3D Views of Residential and Commercial Building. 5.2 PLOT and its Sub Command for Plotting Drawing on A1, A2 and A3 Size Paper using Printer and / or Plotter.	5a. Setup printer , plotter for Printing of drawings. 5b. Plot 2D and 3D Civil Engineering Drawings as per requirement on different scale and sizes.	--	06
		Total	—	30

List of Practical		
No.	Unit	Name of Practical
1	I	Draw Basic 2D objects such as line circle, polygon - (at least 04 objects)
2	II	Draw simple plan of a rectangular room or layout of given dimensions -- 02 drawings
3	III	Draw a drawing of a plan of two BHK house
4	IV	Draw Four 3D Geometrical Figures
5	V	Develop PLAN , ELEVATION and 3D Views of One Residential and One Commercial Building
6	V	To give the introductory session of advance software like Staad Pro, Etabs etc.

List of Instruments / Equipment / Trainer Board	
1	Computer system -Intel Core 2 Dual with 32 MB RAM 200mb hard disk and Mouse and Key Board
2	Printer and/or Plotter as per printing requirement

List of Reference Books			
No	Title of Reference Books	Authors	Publication
1	AutoCAD Manual	-----	Microsoft AutoDesk
2	The beginning AutoCad 2017	Cheryl R. Shrock, Steve Heather	AutoDesk
3	The AutoCAD 2017 Instructor	James Leach	SDC Publication

Link of Learning Web Resource	
1	Authentic AutoCAD version 2006 or Higher can be down loaded from AICTE website
2	Autodesk web site

PO & CO Mapping

Sr.No.	Name of PO	Description	Co1	Co2	Co3	Co4	Co5
1	PO 1	Acquire fundamental knowledge of mathematics, science, and civil engineering.	None	Slight	Moderate	Slight	None
2	PO 2	Design and conduct experiments, as well as analyze and interpret data.	Moderate	Moderate	Moderate	Substantial	Moderate
3	PO 3	Use the techniques, skills, and modern engineering tools necessary for engineering practice	None	None	Slight	Slight	None
4	PO 4	Function in multi-disciplinary teams and identify, formulate, and solve engineering problems.	Slight	Substantial	Slight	Slight	Slight
5	PO 5	Clear understanding of his duties and responsibilities as a civil engineer.	Substantial	None	Moderate	Slight	None
6	PO 6	Develop effective communication skill and provide leadership for professional development.	Slight	Moderate	Slight	Slight	None
7	PO 7	Engage in life-long learning in civil engineering field and comprehend issues related to environment and sustainable development.	Moderate	Moderate	Moderate	Slight	None
8	PO 8	Graduate will demonstrate knowledge of professional and ethical responsibilities.	Slight	None	Slight	None	None
9	PO 9	Incorporate economics and business practice including project and risk management.	Slight	Slight	Substantial	Moderate	Moderate
10	PO 10	Graduated are able to share their knowledge to the industries as well as society.	Moderate	None	Slight	None	Slight
11	PO 11	Graduated will be able to apply their skill and knowledge for the sustainable development of nation.	Moderate	None	Moderate	Slight	Slight
12	PO 12	Graduated are able to learn to work with the team and also with the inter discipliners.	Slight	None	Slight	Slight	Slight