

Branch Name:	Civil engineering
Program Code:	ET401
Course Name:	Computer Aided Drawing
Course Code:	2ET4010406
Pre-requisite Course:	---

COURSE OBJECTIVE:

The content should be taught and implemented with the aim to develop skills so that students are able to acquire following competencies:

1. To learn basic principles of building planning and drawing.
2. To know graphical representation of various components of buildings.
3. To draw complete plan and elevation of a building.
4. To learn basics of perspective drawings and Computer Aided Drawings.

TEACHING AND EVALUATION SCHEME:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)			
Lecture	Tutorial	Practical	Credit	Theory		Practical	
				University Assessment	Continuous Assessment	University Assessment	Continuous assessment
-	-	2	1	-	-	20	30

DETAILS OF COURSE CONTENTS:

S. NO.	TOPIC	Total Hrs.	WEIGHTAGE (%)
1	Introduction to AutoCAD: 1.1 File menu of AutoCAD with New, Open, Save, Save as and Close Importance and Interdependency of various activities, 1.2 Basic 2D commands like Line, Circle, Ellipse, Multi Line, Construction Line, Polyline, Point, Donut, Ellipse, Polygon, Rectangle and Arc, Erase Snap, Redraw, Regenerate, Zoom and Pan.	12	20%
2	Editing & Advanced 2DCommands 2.1 Modify Properties of Drawing Entity , 2.2 Copy, Move, Rotate, Mirror , Offset , 2.3 Array, Scale, Stretch, Lengthen, Trim, 2.4 Extend , Break, Chamfer , Fillet 2.5 Block, Block, Insert and Explode 2.6 Area and Volume with Civil Engineering Application 2.7 Application of LAYER command in Civil	22	20%

	Engineering 2.8 Layer command with its all sub commands, Line type, Colour, 2.9 Dimension command – lined , aligned, arc length, radius, Diameter, Centre, Leader, Baseline and Continuous Dimensioning, tolerance, override and Dimension updates Text and DTEXT commands with Text Style Hatch command		
3	3D Commands of AutoCAD : 3.1 Units, Elevation, Thickness, UCS and UCS Icon 3.2 Viewports , Extrude , 3D Solids – Sphere, Box, Cylinder, Cone, Wedge, Interference 3.3 3D Surface – Revolved, Tabulated and Ruled Surfaces, Hide, Render and Shade of 3D drawings	08	20%
4	Plot of 2D & 3D Drawings : 4.1 PLAN , ELEVATION and 3D Views of Residential and Commercial Building 4.2 PLOT and its Sub Command for Plotting drawing on A1, A2 and A3 Size Paper using Printer and / or Plotter	08	20%
5	Introduction to REVIT/Similar software 5.1 Explain basics of BIM 5.2 Demonstrate components of REVIT UI 5.3 Prepare simple building drawing using REVIT 5.4 Demonstrate Rendering in REVIT 5.5 Calculate data from REVIT	06	20%

LIST OF PRACTICAL:

SR. No.	Experiment
1	Draw Basic 2D objects such as line circle, polygon - (at least 04 objects)
2	Draw simple plan of a rectangular room or layout of given dimensions -- 02 drawings
3	Draw a drawing of a plan of two BHK house
4	Draw Four 3D Geometrical Figures
5	Develop PLAN , ELEVATION and 3D Views of One Residential and One Commercial Building
6	Prepare simple building drawings using REVIT.

LIST OF REFERENCES:

Sr.no.	Title	Author
1	AutoCAD Manual	Microsoft AutoDesk
2	The beginning AutoCad	AutoDesk
3	The AutoCAD 2017 Instructor	SDC Publication

List of Open Source Software/learning website:

1. www.Autodesk.com
2. Authentic AutoCAD version can be down loaded from AICTE website

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	To learn basic principles of building planning and drawing.	2 Understanding
CLO2	To know graphical representation of various components of buildings.	2 Understanding
CLO3	To draw complete plan and elevation of a building.	2 Understanding, 3 Applying
CLO4	To learn basics of perspective drawings and Computer Aided Drawings.	3 Applying, 2 Understanding

Course Learning Outcomes	Program Outcomes(Po's)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CLO1	H		L								L	
CLO2	M											
CLO3	L		H		H						M	
CLO4	M				M							

H: High, M: Medium, L: Low