



C. U. SHAH UNIVERSITY
Wadhwan City

FACULTY OF: - Technology & Engineering
DEPARTMENT OF: - CE/IT/EC/MECH/EEE/AUTO/IC/EE/CIVIL
SEMESTER: - II
CODE: 4TE02EGC1
NAME – Engineering Graphics and CAD (EGC).

Teaching and Evaluation Scheme:-

Subject Code	Name of the Subject	Teaching Scheme (Hours)				Credits	Evaluation Scheme							
		Th	Tu	Pr	Total		Theory				Practical (Marks)			Total
							Sessional Exam		University Exam		Internal		University	
							Marks	Hrs	Marks	Hrs	Pr/Viva	TW	Pr	
4TE02EGC1	Engineering Graphics and CAD (EGC)	2	0	4	6	4	30	1.5	70	3	30	20	---	150

Objectives:-

- Students should be able to visualize the objects.
- They should be able to understand and read drawing.
- They should be able to draw & present the same.

Prerequisites:-

- Basic knowledge of drawing skill and object visualisation power in space is required.

Course outline:-

Sr. No.	Course Content	Number of Hours
01	Introduction to Engineering Graphics: Drawing instruments and accessories, BIS – SP 46. Use of plane scales and Representative Fraction.	2
02	Engineering Curves: a) Conic Section Construction of ellipse, parabola & hyperbola by various methods. b) Cycloidal curves. Construction of cycloid, epicycloids & hypocycloid. Tangent & normal to the curve. c) Involute d) Spirals e) Involute of circle, square, pentagon, hexagon. f) Loci of points Locus problems on i. four bar chain mechanism ii. Simple slider crank mechanism iii. Offset slider crank mechanism.	4
03	Projections of Points & Lines: Introduction to principal planes of projections, Projections of the points located in same quadrant and different quadrants, Projections of line with its inclination to one reference plane and with two reference planes. True length of the line and its inclination with the reference planes.	6

04	Projections of Planes: Concept of different planes, Projections of planes with its inclination to one reference plane and with two reference planes. Concept of auxiliary plane method for projections of the plane.	4
05	Projections of Solids & Section of Solids: Classification of solids. Projections of solids like Cylinder, Cone, Pyramid and Prism with its inclination to one reference plane and with two reference planes. Section of such solids and the true shape of the section.	6
06	Development of Lateral Surfaces: Concept of development of the different surfaces. Parallel Line Development and Radial Line Development.	4
07	Orthographic Projections: Principle of projection, Principal planes of projection, Projections from the pictorial view of the object on the principal planes for View from Front, View from Top and View from Side using first angle projection method and third angle projection method, Full Sectional View.	-
08	Isometric Projections and Isometric View or Drawing: Isometric Scale, Conversion of orthographic views into isometric projection, isometric view or drawing.	-
09	Introduction to Auto CAD: Basic Drawing and Editing Commands. Knowledge of setting up layers, Dimensioning, Hatching, plotting and Printing. Drawing of orthographic projections using Auto CAD. Introduction to other commercial software's available for CAD.	4

Topic number 7 and 8 i.e. Orthographic projections and Isometric Projections and Isometric View or Drawing will be taught during laboratory hours only.

Learning Outcomes: - Logical method of explaining the core subject and the philosophy of the subject

Books Recommended:-

1. "Engineering Drawing (Plane and solid geometry)" **N.D. Bhatt**, Charotar Publishing House Pvt. Ltd.
2. "Machine Drawing", **N.D. Bhatt & V.M. Panchal**, Charotar, Publishing House Pvt. Ltd.
3. "Engineering Drawing" **M.B Shah & B.C Rana**, Pearson Publications.
4. "Engineering Graphics", **P.J. Shah**, S Chand Publications.
5. "Engineering Drawing", **Dhananjay A Jolhe**, Tata McGraw Hill
6. "(CAD Soft Technologies) Auto CAD 2012 (For engineers and Designers)", **Prof. Sham Tickoo (Purdue University) & Gaurav Verma**, Dreamtech Press NewDelhi.

E- Resources:-

1. www.pearsonhighered.com
2. www.igi-global.com/article