GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering
Subject Code: 3132001
Semester – III
Subject Name: Industrial Drafting

Type of course: Engineering

Prerequisite: Zeal to learn subject

Rationale: Industrial drafting is the advanced version of Engineering Graphics. It enhances visualization and perception of intersecting surfaces and their sectional views. Mechanical aspects from assembly drawing point of view are included in this subject.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P	C	Theory Marks		Practical Marks		
				ESE (E)	PA (M)	ESE (V)	PA (I)	
1	0	2	2	70	30	30	20	150

Content:

Sr. No.	Content	Total Hrs
1	Introduction: Dimensioning, Classification of drawings such as machine drawing, production drawing, part drawing, assembly drawing etc., Conventional representation for materials such as metals, wood, cement etc and machine components such as gears, shafts, splined shafts, bearings etc.	2
2	Intersection of surfaces: Prism to prism, cylinder to cylinder, cylinder to prism, cone to cylinder, cylinder to cone.	3
3	Sectional Views: Section plane line, types for sectional views such as full, half, partial, revolved, removed etc. with the conventions	2
4	Screw threads: profile of standard screw threads used for fasteners and power transmission screws, types of threads, conventional representation of external and internal threads with and without sections.	2
5	Screw fasteners: Bolts with nut and washer, studs, foundation bolts, locking arrangements of nuts	1
6	Mechanical elements for power transmission: Keys & Rigid joints such as types of keys, cotter joints such as socket & spigot ,gib &cotter, sleeve joint, knuckle joint etc., Rigid and	3

	flexible coupling, C.I. and v-belt pulley, representation of gear pair.	
7	Elements of production drawing: Introduction to limits, fits, tolerances and surface roughness	2
8	Computer graphics: introduction to computer aided drawing, basics of computer graphics for preparation of drawing.	1

Suggested Specification table with Marks (Theory): (For BE only)

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
50	25	10	5	5	5

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

1. Machine Drawing by N D Bhatt, Charotar Publishing House
2. Engineering Drawing by N D Bhatt, Charotar Publishing House
3. Machine Drawing with AutoCAD, Goutam Pohit and Goutam Ghosh, Pearson Education
4. A textbook of Machine drawing, P S Gill, S K Kataria and Sons

Course Outcomes:

Sr. No.	CO statement	Marks % weightage
CO-1	Students are expected to know about the machine drawing practices according to the standards prevailing.	40
CO-2	The topics like intersection of surfaces, surface finish, limits, fits and tolerances will make them aware about the correlation between manufacturing practices and precision.	50
CO-3	Additionally the basic practice on drawing software such as AUTOCAD will develop the new drawing generations and editing skills.	10

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List of Experiments:

1 Types of Drawings
2 Conventional representation for materials and machine components
3 Interpretation of views
4 Screw threads and screw fastenings
5 Types of rigid joints
6 Limits, Fits & Tolerances
7 Intersection of surfaces
8 Autocad Practice Sheet

Major Equipment:

Computer Terminals with corresponding design software may be available for practicing.

List of Open Source Software/learning website:

NPTEL