SILVER OAK UNIVERSITY

College of Technology

Bachelor of Technology

Information Technology

Course Name: Engineering Drawing

Course Code: 1010123114

Semester: 2nd

Prerequisite:

1. Basic Mathematics

Course Objectives:

1. Develop a comprehensive understanding of international and industry-specific drawing standards.
2. Effectively apply engineering drawing concepts to 1D, 2D, and 3D projects. 3. Communicate through technical drawing for a wide range of engineering applications.

Teaching Scheme:

Teaching Scheme				
L	T	P	Contact Hours	Credit
1	0	2	3	2

Contents:

Unit	Topics	Teaching Hours	% Weightage
1	**Basics of Engineering Graphics:** Use of Drawing Instruments Like Set Square, Scale, Drafter, Drawing Board, Drawing Sheet, Types of Lines, Lettering and Dimensioning Methods, Types of Scales including Plane Scale and Diagonal Scale. To construct polygon Using Universal Method.	2	10
2	**Engineering Curves:** To Study about the Classification and application of Engineering Curves, Construction of Conics, Cycloidal Curves and Involutes.	4	25

3	**Projections of Points:** Introduction to principal planes of projections, Projections of the points located in same quadrant and different quadrants. **Orthographic Projections:** Fundamental of projection along with classification, Projections from the pictorial view of the object on the principal planes for view from front, top and sides using first angle projection method and third angle projection method, Simple Drawing Examples on Orthographic Projection.	5	30
4	**Isometric Projections:** Isometric Scale, Conversion of orthographic views into isometric projection, isometric view or drawing of objects	3	20

5	**Introduction to Mechanical Software:** Introduction to AutoCAD, Basic commands for 2D drawing like: Line, Circle, Polyline, Rectangle, Hatch, Fillet, Chamfer, Trim, Extend, Offset, Dim style, Multiline, XL, EDGESURF, Purge, Save all, Break line etc. Simple Drawing Examples covering above commands. **Editing sketched objects with Following Commands** Editing sketches, moving, copying, pasting, offsetting, scaling, chamfering, trimming, mirroring. Filleting, sketched objects.	1	15

Course Outcomes:

Sr. No.	CO Statement	Unit
CO-1	Visualize the objects using Concepts of Engineering Graphics.	1,2
CO-2	Understand the Concept of projection and acquire visualization skills, Projection of points and Orthographic Projection.	3
CO-3	Comprehend the theory of Isometric projection and views.	4
CO-4	Apply the knowledge of computer software for creating and organizing the technical drawings.	5

Teaching & Learning Methodology:

1. Problem - based Learning
2. Design Thinking
3. Cooperative-based Learning
4. Competency-based Learning

List of Experiments: Total Hours: 28

Sr. No.	Practical Name
1	Practice sheet Lines, Lettering and Dimensioning.

2	Practice sheet on Plane Scale and Diagonal Scale.
3	Practice Sheet on Engineering Curves.
4	Practice Sheet on Projection of Points.
5	Practice Sheets on Orthographic Projection and Isometric projections.
6	Drawing Exercises on 2D AutoCAD.
7	Drawing Exercise on Editing Commands of AutoCAD.

Major Equipment:

1. Drawing table
2. Projector
3. Models- full and cut
4. Drawing book and/or sheets
5. Drawing board
6. Drawing instruments

Books Recommended:

1. B. Agrawal and C M Agrawal, "Engineering Drawing", Tata McGraw Hill, New Delhi
2. P.S.Gill, "A text book of Engineering Drawing", S.K.Kataria & sons, Delhi 3. R.K.Dhawan, "A text book of Engineering Drawing", S.Chand & Company Ltd., New Delhi
4. P.J.Shah, "A Text Book of Engineering Graphics", S.Chand & Company Ltd., New Delhi
5. N.D.Bhatt, "Elementary Engineering Drawing", Charotar Publishing House, Anand

List of Open-Source Software/learning website:

1. https://nptel.ac.in/courses/112/103/112103019/
2. https://nptel.ac.in/courses/112/104/112104172/
3. https://nptel.ac.in/courses/112/105/112105294/
4. https://silveroakuni.ac.in/video-lecture
5. https://www.coursera.org/

CO-PO-PSO Matrix:

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO-1	3	2	1							2		2	1	1
CO-2	2	2	2	2	3				2	1		2	1	1
CO-3			3			3			3	3			1	1
CO-4	1	1	2	2	3				2	1		1	1	1