

SEMESTER S1

ENGINEERING GRAPHICS AND COMPUTER AIDED DRAWING

Course Code	A105EST03	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	2-0-2-0	ESE Marks	60
Credits	3	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	None	Course Type	Theory & Lab

Course Objectives:

1. To learn the principles and techniques of dimensioning and preparing engineering drawings.
2. To develop the ability to accurately interpret and understand engineering drawings.
3. To learn the features of CAD software

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Introduction: Relevance of technical drawing in engineering field.Types of lines, Dimensioning, BIS code of practice for technical drawing. (No questions for the end semester examination) Projection of points in different quadrants, Projection of straight lines inclined to one plane and inclined to both planes. Trace of a line. Inclination of lines with reference planes. True length and true inclinations of line inclined to both the reference planes.	9
2	Projection of Simple solids such as Triangular, Rectangle, Square, Pentagonal and Hexagonal Prisms, Pyramids, Cone and Cylinder only. Projection of solids in simple position including profile view. Projection of solids with axis inclined to one of the reference planes and with axis inclined to both reference planes.	9

3	Sections of Solids: Sections of Prisms, Pyramids, Cone and Cylinder only, with axis in vertical position and cut by different section planes. True shape of the sections. (Exclude true shape given problems) Development of Surfaces: Development of surfaces of the solids and solids cut by different section planes. (Exclude problems with through holes)	9
4	Isometric Projection: Isometric scale- Isometric View and Projections of Prisms, Pyramids, Cone, Cylinder, Sphere, Hemisphere and their combinations. Computer Aided Drawing (CAD): Introduction, Role of CAD in design and development of new products, Advantages of CAD. Creating two-dimensional drawing with dimensions using suitable software. (CAD, only internal evaluation)	9

Course Assessment Method
(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment+ Lab Exam	Internal Examination-1	Internal Examination- 2	Total
5	10+5	10	10	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

2 Questions from one module Total 8 Questions, each question carries 15 marks (15x4 =60marks)	Total
	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Understand the projection of points and lines located in different quadrants	K2
CO2	Prepare multiview orthographic projections of objects by visualizing them in different positions	K3
CO3	Plot sectional views and develop surfaces of a given object	K3
CO4	Prepare pictorial drawings using the principles of isometric projection	K3
CO5	Sketch simple drawing using CAD tools.	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

CO-PO Mapping Table:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	H	M									
CO2	H	M									M
CO3	H	M									
CO4	H	M				M			M		
CO5	H	M	M		H			M	H		

Note: L: Slight (Low), M: Moderate (Medium), H: Substantial (High)

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Engineering Graphics	Varghese, P. I.	V I P Publishers	2018 edn
2	Engineering Graphics,	Benjamin, J.	Pentex Publishers	2016 edn
3	Engineering Graphics	John, K. C.	Prentice Hall India Publishers	2017 edn
4	Engineering Drawing,	Bhatt, N., D.	Charotar Publishing House Pvt Ltd.	60th edn 2019
5	Engineering Graphics,	Anilkumar, K. N.	Adhyuth Narayan Publishers	2022 edn

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Engineering Graphics with AutoCAD,	Kulkarni, D. M., Rastogi, A. P. and Sarkar, A. K.,	Prentice Hall India Publishers	2020 edn
2	Engineering Drawing & Graphics	Venugopal, K.	New Age International Publishers	5th edn 2011
3	Engineering Drawing	Parthasarathy, N. S., and Murali, V.	Oxford University Press	2015 edn

Video Links (NPTEL, SWAYAM...)	
Module No.	Link ID
1	https://archive.nptel.ac.in/courses/112/102/112102304/
2	https://archive.nptel.ac.in/courses/112/102/112102304/
3	https://archive.nptel.ac.in/courses/112/102/112102304/
4	https://archive.nptel.ac.in/courses/112/102/112102304/