

Title: Engineering Drawing

Code Number: EE1203

Credit Hours: 1 (0+1)

Prerequisites: Nil

Semester: 2nd

Course Objectives

The course will enable students to:

1. Demonstrate proficiency in creating engineering drawings using manual drawing tools and techniques.
2. Master CAD software effectively to design and draft engineering drawings with precision.
3. Communicate understanding of experimental concepts and methodologies.

Contents

Unit 1: Manual Drawing

1. Introduction to Drawing Tools and Geometrical Construction
2. Sheet Layout, Line Types, Sheet Planning and Dimensioning Principles Orthographic 1st angle of projection
3. Orthographic 3rd angle of projection
4. Isometric projection
5. Sectional drawing and assembly drawing
6. Reading and preparing electrical engineering drawings such as: Wiring Diagram, Power System Layout Diagram, PCB Drawing

Unit 2: Computer Aided Drawing (CAD)

1. Layout, Line Types
2. Practice in Lettering, Numbering and Geometrical Construction
3. Engineering Curves-I (polygons, arcs, ellipses, parabola, hyperbola) Engineering Curves - II (involute, cycloids, trochoids, spirals)
4. Orthographic 1st angle of projection using CAD
5. Orthographic 3rd angle of projection using CAD
6. Design of 2-D Indoor Concealed Electrical Wiring Layout of a given
7. Residential or Commercial Building using CAD
8. Design of 2-D Outdoor Electrical Underground Wiring Layout of a given Outdoor area or housing society etc. using CAD
9. Design of 2-D Outdoor Electrical Overhead Wiring Layout of a given Outdoor area or housing society etc. using CAD
10. Introduction to 3D Modeling

Unit 3: Software

1. 2D AutoCAD
2. 3D AutoCAD Revit

Teaching-Learning Strategies:

The engineering drawing lab employs interactive teaching methods in a practical setting, focusing on hands-on learning. It utilizes multimedia tools and traditional drawing aids for instruction, enabling participants to actively engage in creating detailed engineering drawings. Students apply theoretical knowledge to solve practical drawing challenges, fostering skill development and real-world application in technical drawing.

Assignments/Types and Number with calendar:

A minimum of four assignments to be submitted before the written exams for each term.

Assessment and Examinations:

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	It takes place at the mid-point of the semester.
2.	Sessional Assessment	25%	It is continuous assessment. It includes classroom participation, attendance, assignments and presentations, homework, attitude and behavior, hands-on-activities, short tests, quizzes etc.
3.	Final Assessment	40%	It takes place at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Recommended Books:

1. A. C. Parkinson, "First Year Engineering Drawing".
2. James D. Bethune, "Engineering Graphics with AutoCAD"
3. Shawna Lockhart, "Tutorial Guide to AutoCAD", Prentice Hall.
4. N.D. Bhatt, "Elementary Engineering Drawing"