MALNAD COLLEGE OF ENGINEERING, HASSAN

An Autonomous Institution Affiliated to VTU, Belagavi

Autonomous Programme

BACHELOR of ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

SYLLABUS (2024 Admitted Batch)

I AND II SEMESTERS

(1st YEAR)

Academic Year 2024-25

MALNAD COLLEGE OF ENGINEERING, HASSAN

DEPARTEMENT OF Mechanical Engineering

Course Title	**Computer Aided Engineering Drawing (CAED)**		
Code		**LTPC**	**2-0-2-3**
SEE Duration	**3 Hours**	**Hours/ Week**	**04**
CIE (Theory Marks)	**20**	**CIE (Practical/ Activity Marks)**	**30**
SEE Marks	**50**	**Total Hours**	**52**

Course Objective: To introduce the students to "universal language of Engineers" for effective communication and perform drafting exercises of geometrical shapes, solids and machine elements in different systems of Projection using BIS/ISO standards and conventions with the aid of manual drafting and CAD package to effectively take-up the basic industrial/societal drawing needs.

Course Outcomes:

Upon completion of the course, students shall be able to;

COs	**Statement**	**POs**
1	visualize geometrical solids in 3D space through exercises in orthographic projections	1,2, 5, 10
2	develop the lateral surfaces of geometrical solids	
3	interpret isometric views and draw orthographic views of machinecomponents and perspective projections	
4	visualize engineering components	

Course contents:

MODULE 1 **14 Hours**

Principles of orthographic Projections: Different planes of projection and views taking point as an example with explanation about distance of a point from planes of projections. Concept of true length and true inclination of a line (emphasis on practical problems).

Orthographic Projection of Planes:Projection of Planes by change of position method only (no combination of planes).

MODULE 2 **18 Hours**

Orthographic Projection of Solids:Front, top and profile views of geometric solids resting with their base completely on HP (no other positions).

Development of lateral surfaces: Introduction to section planes and section of regular solids, Parallel and Radial line methods.

MODULE 3 **12 Hours**

Isometric Projections: Isometric projections of geometric solids and simple machine components. Conversion of Isometric views into Orthographic views: Simple machine components.

MODULE 4 **08 Hours**

Multidisciplinary Applications & Practice

Basic building drawing (Plan and Elevation), 2D Electrical wiring and lighting drawing, 2D Electronic PCB drawings.

Graphs & Charts:***(Only for CIE)***

Column chart, Pie chart, Line charts, Gantt charts, etc.using Microsoft Excel or any suitable software.

TEXT BOOK:

1. Engineering Drawing: N.D.Bhatt &M.Panchal. 37thEdition 1996, Charotar Publishing House. Gujarat.

REFERENCES:

1. Engineering Drawing & Design: Cencil Jensen, Jay D. Helsel, Dennis R. Short, Seventh Edition, Tata McGraw-Hill 2012.
2. Engineering Drawing: K.R. Gopal Krishna, 24th Edition 1999 Subhash Publications, Bangalore.
3. Bhattacharya S. K., Electrical Engineering Drawing, New Age International publishers, second edition 1998, reprint 2005.
4. Chris Schroder, Printed Circuit Board Design using AutoCAD, Newness, 1997.
5. NainanPKurian Design of foundation systems, Alpha Science International Ltd; 3rd edition, 2005.

Scheme of Evaluation

	Portions for CIE	Mode of Evaluation	Weightage in Marks
CIE - 1	Syllabus to be decided by the course coordinators such that all the COs shall be covered.	Descriptive Test	**10**
CIE - 2		Descriptive Test	**10**
Activity	All 5 Modules	Assignment Submission	**30**
SEE			**50**
Total			**100**

Question Paper Pattern for Semester End Examination (SEE)

Q. No.	Module	Questions on	Sketching	CAD Printouts	Total
Part A (Answer Any Two)					
1	1	Projection of Planes	08	17	25
2	2	Projections of Solids (Polyhedra)	08	17	25
3	2	Projections of Solids (Solids of Revolution)	08	17	25
Part B (Answer Any Two)					
4	2	Development of lateral surfaces (Polyhedra)	08	17	25

5	3	Development of lateral surfaces (Solids of Revolution)	08	17	25
6	4	Isometric projections of geometric solids	08	17	25
Total Marks			**32**	**68**	**100**

COURSE ATRICULATION MATRIX

Course Out comes	Program Outcomes [POs]													
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	1			3					2				
CO2	1	1			3					2				
CO3	1	1			3					2				
CO4	1	1			3					2				