



CVM
UNIVERSITY

Aegis: Charutar Vidya Mandal (Estd.1945)

FACULTY OF ENGINEERING & TECHNOLOGY

Effective from Academic Batch: 2025-26

Programme: Bachelor of Technology

Semester: I/II

Course Code: 102001218

Course Title: Engineering Visualization

Course Group: Engineering Science

Course Objectives: Engineering Drawing serves as the universal language of engineers, enabling precise and unambiguous communication across disciplines. It forms the foundational pillar that supports and strengthens the entire engineering and technological framework. Acting as a vital conduit between conceptualization and realization, Engineering Drawing translates innovative ideas into actionable designs. This subject encompasses the essential principles of both manual drafting techniques and computer-aided design (CAD), equipping learners with the skills required to visualize, interpret, and create technical drawings with accuracy and clarity.

Teaching & Examination Scheme:

Contact hours per week			Course Credits	Examination Marks (Maximum / Passing)				
Lecture	Tutorial	Practical		Theory		J/V/P*		Total
				Internal	External	Internal	External	
0	0	4	2	--	--	50 / 18	50 / 18	100/36

* J: Jury; V: Viva; P: Practical

Detailed Syllabus: List of Practicals / Tutorials:

Sr.	Contents	Hours
1	Practice sheet (sketch book): Use of drawing instruments, engineering drawing dimensioning methods and standards.	02
2	Engineering Curves (sketch Book): (1) Ellipse, (2) parabola, (3) hyperbola, (4) cycloid, (5) involute, (6) spirals.	06
3	Use of elements of 2D drawing in modeling/drafting software.	02
4	Drawing of engineering curves using drafting software.	04



5	Fundamentals of 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, full sectional view.	02
6	Orthographic drawing of components using drawing instruments in sketch book.	04
7	Orthographic drawing of components using drafting software.	04
8	Fundamentals of Projections of Planes: Projections of planes (polygons, circle and ellipse) with its inclination to one reference plane and with two reference planes.	04
9	Projections of planes using drawing instruments in sketch book.	02
10	Projections of planes using drafting software.	02
11	Fundamentals of Projections of Solids: Classification of solids. Projections of solids (Cylinder, Cone, Pyramid, Prism) along with frustum with its inclination to one reference plane and with two reference planes.	04
12	Projection of solids using drawing instruments in sketch book.	04
13	Projection of solids using drafting software.	04
14	To Generate Isometric and Perspective Views from 2D Sketches - Develop 3D representations from 2D sketches using CAD tools.	06

Reference Books:

1	A Text Book of Engineering Graphics by P.J.Shah S.Chand & Company Ltd., New Delhi
2	Elementary Engineering Drawing by N.D.Bhatt Charotar Publishing House, Anand
3	Engineering Drawing by B. Agrawal and C M Agrawal, Tata McGraw Hill, New Delhi
4	Engineering Graphics and Design by T Jeyapoovan, S Chand, Noida
5	AutoCAD 2024 Instructor by James Leach, Shawna Lockhart, SDC Publications
6	AutoCAD 2024 for Beginners by Cadfolks, Independently Published
7	AutoCAD 2023: A Problem-Solving Approach by Sham Tickoo, CAD/CIM Technologies

Pedagogy:

- Direct classroom teaching
- Audio Visual presentations/demonstrations
- Assignments/Quiz
- Continuous assessment
- Interactive methods
- Industrial/ Field visits
- Course Projects



CVM UNIVERSITY

Aegis: Charutar Vidya Mandal (Estd.1945)

Internal Evaluation:

The internal evaluation comprised of written exam (50% weightage) along with combination of various components such as Assignments, Mini Project, Simulation, Model making, Case study, Group activity, Seminar, Poster Presentation, Unit test, Quiz, Class Participation, Attendance, Achievements etc.

Suggested Specification table with Marks (Theory) (Revised Bloom's Taxonomy):

Distribution of Theory Marks in %						R: Remembering; U: Understanding; A: Applying; N: Analyzing; E: Evaluating; C: Creating
R	U	A	N	E	C	
10%	20%	50%	20%	--	--	

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.

Course Outcomes (CO):

Sr.	Course Outcome Statements	%weightage
CO-1	Apply the conventions and the methods of engineering drawing also interpret engineering drawings	20
CO-2	Construct basic and intermediate geometry and comprehend the theory of projection.	20
CO-3	Dissect the objects in three dimensions with different orientation.	40
CO-4	Make use of computer software for engineering drawings.	20

Curriculum Revision:

Version:	1
Drafted on (Month-Year):	April-2025
Last Reviewed on (Month-Year):	--
Next Review on (Month-Year):	April -2028