

SYLLABUS

Code/Name	MCE 103 / Technical Drawing
Type	Required
Credit/ECTS	3/7
Hour per Week	4 (2+2+0)
Level/Year	Undergraduate/1
Semester	Fall
Classroom	T206
Content	Technical drawing in engineering. Descriptive geometry. Line types and lettering. Fundamentals of dimensioning. Principles of projection. Orthographic views. Section views. Isometric perspectives. Symbols for surface finishing and welding. Mechanical assembly drawing. Fasteners, limits, and fits. Geometric tolerances.
Prerequisites	-
Textbooks	<i>Primary</i> KL Narayana, P Kannaiah, KV Reddy, Machine Drawing, New Age International Publishers, 3 rd Ed., 1994 <i>Supplementary</i> K. Rathnam, A First Course in Engineering Drawing, Springer, 2018
Objectives	<ul style="list-style-type: none"> • To learn essentials of technical drawings • To representation and read of machine parts with 2D drawings • To prepare perspectives of machine parts • To draw machine elements and their assemblies
Course Outcomes	In this course you will be able to: C01 Draw basic geometrical shapes by hand C02 Draw 2D views of solid parts C03 Visualize machine parts in mind C04 Prepare isometric drawings of machine parts C05 Prepare technical drawings of standard machine elements C06 Prepare assembly drawings

Weekly Schedule of Topics

W	Topic
1	Introduction to Technical Drawing; drawing tools, lettering, lines, scales
2	Geometrical constructions; drawing basic geometrical shapes
3	Engineering curves; Ellipse, parabola, hyperbola, spirals, roulettes
4	Theories of projections; 1 st and 3 rd angle projections, orthographic projections
5	Projections of points, simple solids, inclined lines, surfaces and auxiliary projection technique
6	Auxiliary views; expressing machine arts with auxiliary views
7	Creating isometric drawings using auxiliary views
8	Section Views; full sections, half sections, and stepped sections
9	Dimensioning, surface finishing and symbols, tolerances
10	Technical representation of bolts, nuts, and screws
11	Technical representation of pins, keys, and cotters
12	Technical representation of bearings and pulleys

13 Technical representation of gears and chains

14 Assembly drawing

Professional Contribution

Ability to visualize 2D &3D objects in the mind and to express them on paper

Contribution to Program Outcomes*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	0	2	1	1	2	3	3	2	0	0	2
CO2	0	4	1	1	2	4	4	3	0	0	3
CO3	2	4	2	2	3	5	3	5	1	1	1
CO4	4	4	3	3	5	4	5	5	1	1	4
CO5	2	5	2	3	5	5	5	5	1	2	4
CO6	3	5	3	3	5	5	5	4	1	2	4

* Contribution Level | 0: None | 1: Very Low | 2: Low | 3: Medium | 4: High | 5: Very High

Special Conditions

- Students work in groups for assignment.
- The consequence of violation of the attendance rule is to receive a grade of **NA**.

Requirements

Basic knowledge of a dynamic analysis software

Evaluation

Midterm Exam	50%
Final Exam	50%
Total	100%

Rubric

A rubric will be announced after the exams based on the details of the answer keys

Course Policy

1. You must attend at least 80% of the sessions including add-drop period.
2. Be in the class on time.
3. English should always be used to communicate with one another.
4. Mobile phone should be switched off and put away during the class.
5. You cannot talk to your friends during class no matter what the subject is.

Cheating & Plagiarism

- Copying or letting someone to copy your work on exams, assignments, or reports is cheating.
 - Cutting and pasting text, figures and tables from the web sources or any other electronic source is plagiarism.
 - The consequence of academic dishonesty is to receive a grade of **F** for the course.
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Instructor

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