

CLASS : S.E. (Mechanical)		Semester - III	
SUBJECT – MACHINE DRAWING			
Periods Per Week 1 Period of 60 Min.	Lecture		03
	Practicals		05
	Tutorials		-----
		Hours	Marks
Evaluation System	Theory Examination	04	100
	Practical	03	50
	Oral Examination	-----	-----
	Term Work	-----	25
	TOTAL		175

MODULE 1 DETAILS

09 Hrs

Solid Geometry

Intersection of surfaces and interpretation of solids-Intersection of prism or cylinder with Prism
Cylinder or cone both solids in simple position only. Primary auxiliary views and aux. projections of
Simple machine parts.

Machine elements:

Free hand sketches of M/C elements such as bolts, nuts, washers, studs, tapped holes.
Conventional representation of assembly of threaded parts in external and sectional views

MODULE 2 DETAILS AND ASSEMBLY DRAWING:

07 Hrs

Introduction to unit assembly drawing steps involved in preparing assembly drawing from details
and vice versa.

Preparation of details & assembly drawings of Clapper Block, Single tool post, Lathe & Milling tail
stock, Cotter, Knuckle joint, keys & couplings, keys-sunk, parallel woodruff, saddle, feather etc.
Cotter, knuckle joint

Couplings- simple, muff, flanged, protected flange coupling, Oldham's coupling
universal Coupling

MODULE 03 PREPARATION OF DETAILS & ASSEMBLY DRAWING OF BEARINGS: 03 Hrs

Simple, solid, bushes pedestal footstep. I.S. conventional representation of ball and bearings

MODULE 04 PREPARATION OF DETAILS & ASSEMBLY DRAWING OF PULLEYS & BELTS 06 Hrs

V-belt. Rope belts fast and loose pulleys, Pipe joints: flanged joints-spigot and gland and
Stuffing box, expansion joint

MODULE 05 PREPARATION OF DETAILS & ASSEMBLY DRAWING OF VALVES 08 Hrs

Air cock, Blow off cock, Steam stop valve, Globe valve, Non-return valve. I.C. Engine parts: piston,
connecting rod, cross head& crankshaft.

MODULE 06 PREPARATION OF DETAILS & ASSEMBLY DRAWING JIGS & FIXTURES 05 Hrs

Limits fits, and tolerances dimensioning with tolerances indicating various types of fit in detail and Assembly drawings

THEORY EXAMINATION:-

1. Question Paper will comprise of total seven questions, each of 20 marks
2. Only five question need to be solved.
3. Question one will be compulsory and based on maximum parts of syllabus.
4. Remaining question will be mixed in nature (for example supposed Q.2 has part (a) from module 3 then part (b) will be any module other than module 3)
5. In question paper weight age of each module will be proportional to number of respective lecture Hours as mentioned in the syllabus

PRACTICAL EXAMINATION:

Practical examination will be based on part B of the Term Work.

TERM-WORK:

A. TOTAL 4 NUMBERS OF HALF IMPERIAL DRAWING SHEETS

- 1-sheet on Para 1.1 minimum 3 problems
- 1-sheet on details to assembly of any two units topics from module 2
- 1-sheet on details to assembly of any two units topics from module 3
- 1 sheet' on assembly to details of any unit topics from module 4
- 1 sheet detail to assembly of any unit topics from module 5
- 1 sheet detail- assembly of Module 6 with fits & tolerances

B. PRACTICALS IN AUTO CAD

Computer Aided Drawing & Designing of Assembly, Gears, Springs, shafts, pipes fittings, Bearings, Jig & Fixtures, I.C.Engine parts, Pulleys & Belts, Limits, Fits & Tolerances, Rivets, Preparation of 2-D drawing for machine components (bolts, nuts, flange couplings, connecting rod) – 3 D modeling – solid, surface, wire frame using standard packages, different views, sections, isometric views & dimensioning them. Parametric modeling, creating standard machine parts, connecting rod, flange, couplings.

NOTE:

Minimum Four print out of problems solved in the practical class to be attached in the Term Work (Module 2 to 6)

The distribution of marks for term work shall be as follows.

1. Journal containing of Drawing Sheets: -----10 marks
2. Test (at least one): ----- 10 marks
3. Attendance (Theory & practical) ----- 05 marks

TOTAL -----25 marks

TEXT BOOKS:

- i. Machine Drawing-By N.D. Bhatt.
- ii. A text book of Machine Drawing By Laxminarayan & M.L. Mathur. (Jain Brother, New Delhi)
- iii. Machine Drawing, By Kamat & Rao.
- iv. Machine Drawing By,M.B..shah.
- v. A text Book of Machine drawing By R.B. Gupta (Satya Prakashan Tech India Publication)
- vi. Machine Drawing by K.I. Narayana, P. Kannaiah, K.Venkata Reddy
- vii. Machine Drawing by Ajeet Singh (Tata McGraw Hill)
- viii. Machine Drawing with AUTO CAD by Gautam Pohit & Gautam Ghosh (Pearson Education)