

# Engineering Graphics and Machine Drawing

S.E. Sem. III [PROD]

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## EVALUATION SYSTEM

|                | Time   | Marks |
|----------------|--------|-------|
| Theory Exam    | 4 Hrs. | 100   |
| Practical Exam | –      | –     |
| Oral Exam      | –      | –     |
| Term Work      | –      | 50    |

## SYLLABUS

### 1. Interpenetration of Solids

Cylinder to cylinder, cone to cylinder, prism to prism, prism to cylinder, pyramid to prism, pyramid to cylinder of only regular solids with axis of solids perpendicular to/or parallel to the reference planes (neglecting the axis of solids inclined to any reference plane)

2. Auxiliary projections of solids using front view, top view and side views.

### 3. Machine Elements

Screwed fasteners : Thread nomenclature, forms of screw threads, V threads, Square thread, ACME. Buttress, and Whitworth. Representation of threads, Hexagonal headed bolts and nuts, square headed bolts and nuts, locking devices for nuts.

Keys, cotters and pin joints : Keys—saddle keys, sunk keys, round keys Cotter joints: socket and Spigot joint, Gib and cotter joint, cotter and Sleeve joint, Pin joint—Knuckle joint.

Couplings : Rigid couplings, Split, Muff, Flanged protected type, Flexible bush pin type.

### 4. Assembly and Detail Drawings

Machine tools parts : Machine swivel vice, pipe vice, screw jack, tailstock tool head of shaper, Simple drill jig and milling fixture.

Bearings : Plummer block, foot bearing, bracket with pedestal bearing footstep bearing with radial and thrust ball bearings.

IC Engine parts : I.C. Engine connecting rods, stuffing box and eccentric

Valves: Feed check valve, Non Return valve, stop valve, Relief valve, lever safety valve.

### 5. Gears

Profile of involutes gear teeth, methods of drawing gear tooth profiles. I.S. conventional representation of spur gears, bevel gears. Pulleys with flat belt v-belt and rope.

### 6. Limits, Fits and Tolerances

Selection of tolerances, methods of placing limit dimensions fits.

### References :

1. Machine Drawing (*N. D. Bhat*)
2. Machine Drawing (*Sidheshwar*)
3. Machine Drawing (*P.S. Gill*)
4. Machine Drawing (*Narayana and Reddy*)
5. General Principles of Presentation on Technical Drawing.
6. Guide for the selection of Fits – IS.

