

II YEAR II SEM

15AME19-MACHINE DRAWING

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Course Objectives:

- To make the students understand the concepts of I.S. conventions, methods of dimensioning, the title boxes, to draw the machine elements and simple parts.
- To make the students understand and draw assemblies of machine parts and to draw their sectional views

UNIT- I**Machine Drawing Conventions:** Need for drawing conventions- introduction to IS conventions

- a) Conventional representation of material, common machine elements and parts such as screws, nuts, bolts, keys, gears, webs, ribs. Parts not usually sectioned.
- b) Methods of dimensioning, general rules for sizes and placement of dimensions for holes, centers, curved and tapered features.
- c) Title boxes, their size, location and details-common abbreviations & their liberal usage

Learning Outcomes & Suggested Student Activities

This unit is useful to prepare the students for representing their ideas at International standards and will be able to convey in without much effort globally with ease. Students will acquire skills to draft on a drawing sheet without much effect. Students are advised to visit machine shop.

UNIT-II**Drawing of Machine Elements and simple parts:** Selection of Views, additional views for the following machine elements and parts with drawing proportions:

- a) Popular forms of Screw threads, bolts, nuts, stud bolts, tap bolts, set screws,
- b) Keys, cottered joints and knuckle joint,
- c) Rivetted joints for plates, welding joints.
- d) Shaft coupling, spigot and socket pipe joint.
- e) Journal and foot step bearings.

Learning Outcomes & Suggested Student Activities

Students can represent various details of an object quickly without much time and ambiguity. These drawings can be easily prepared and understood by both the people in a manufacturing industry and the consumers too. Students are advised to visit machine shop.


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UNIT- III

Assembly Drawings: Drawings of assembled views for the part drawings of the following.

- a) Engine parts- stuffing boxes, cross heads, Eccentrics, Petrol Engine-connecting rod, piston assembly.
- b) Other machine parts- Screw jack, Machine Vice, single tool post, swivel joint.
- c) Valves: Steam stop valve, feed check valve. Non return valve.

Learning Outcomes & Suggested Student Activities

Students can understand the working principles of an assembly or subassembly so that he/she will be able to produce the final product by procuring the units from various sources/suppliers and still produce any useful product serving effectively. It is not necessary that all the components to be made locally only. Students are advised to visit body building and assembly unit.

Note: First angle projection to be adopted. The student should be able to provide working drawings of actual parts.

Text Books:

1. Machine Drawing- K.L. Narayana, P.Kannaiah&K.Venkata Reddy, New Age Publishers
2. Machine Drawing- Dhawan, S.Chand Publications

References:

1. Machine Drawing- P.S. Gill.
2. Machine Drawing- Luzzader
3. Machine Drawing – Rajput
4. Textbook of Machine Drawing-K.C.John,2009, PHI learning

Suggestions:

1. Student should buy a book mentioned under Text books and study all the exercises given at the end of each chapter to equip him/her with the required ammunition.
2. Student should visit an automobile shop while the unit is being disassembled / assembled. Student should go through the exercises given under assembly drawings refereeing to various books in the library to improve his assimilation capacity.



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