

ME205 Machine Drawing

Credit: 3

Approval: Approved in 3rd Senate

Prerequisite: Graphics for Design

Students intended for: B.Tech

Elective or Core: Core

Semester: Odd/Even

Course objective: To provide the knowledge of design practices for common machine elements, assembly drawings and blue print reading.

Course contents

- **Introduction** to Engineering design process and drawings. Drawing standards. Computer aided drafting and use of software packages for engineering drawings
- **Detachable Fasteners:** Screw threads, approximate and conventional representations; Specifications; Threaded fasteners: Types, forms, standard, and specifications; Drawing of temporary connections; Foundation bolts; Locking Devices: Classification, principles of operation, standard types and their proportions; Shaft Couplings: Common types, standard proportions for some couplings; Pipe Joints, common pipe connections, Cotter and Knuckle Joint
- **Permanent Fastenings:** Rivets: Standard forms and proportions; Riveted Joints: Common types of joints, terminology, proportions and representation; Welds: Types of welds and welded joints, edge preparation, specifications, and representation of welds on drawings.
- **Assembly drawings** with sectioning and bill of materials. Assemblies involving machine elements like shafts, couplings, bearing, pulleys, gears, belts, brackets. Detailed part drawings from assembly drawings. Engine mechanisms-assembly. Machine Tool drawings including jigs and fixtures
- **Production drawings:** Limits, fits, and tolerances of size and form; Types and grade, use of tolerance tables and specification of tolerances, form and cumulative tolerances, tolerance dimensioning, general tolerances; Surface quality symbols, terminology and representation on drawings, correlation of tolerances and surface quality with manufacturing techniques.
- **Schematics, process and instrumentation diagrams**
- **Structural drawings** - examples for reading and interpretation

Suggested Books:

French, T. E., Vierch, C. J., and Foster, R. J., Engineering Drawing and Graphic Technology, 14th Ed., McGraw-Hill, 1993

Giesecke, F. E, and Lockhart, S.D, Technical Drawing, 13th Ed, Prentice-Hall, 2008

Sideswar, N., Machine Drawing, McGraw-Hill, 2004.

Lakshminarayanan, V., and Mathur, M. L., Text Book of Machine Drawing (with Computer Graphics), 12th Ed, Jain Brothers, 2007.

SP 46: 1988 Engineering Drawing Practice for Schools and Colleges, Bureau of Indian Standards, 1988.

Narayana K.L., Kannaiah, P., and Venkata Reddy K, Machine Drawing, 3rd Ed., New Age International Publishers, 2006.

Johan K. C., Text Book of Machine Drawing, PHI Learning Pvt, 2009.
