



MARRI LAXMAN REDDY INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

COURSE CONTENT

CONVENTIONAL AND COMPUTER AIDED MACHINE DRAWING LABORATORY								
IV Semester: ME								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
2540378	Foundation	L	T	P	C	CIA	SEE	Total
		0	0	2	1	40	60	100
Contact Classes: Nil		Tutorial Classes: Nil		Practical Classes: 45		Total Classes: 45		
Prerequisites: Engineering Drawing and Computer Aided Drafting								

Course Overview: Introduces computer-aided machine drawing principles, standards, and CAD tools to create accurate part and assembly drawings, dimensions, fits, tolerances, and manufacturing-ready documentation for engineering applications using AutoCAD and industry practices.

Course objectives: The students will try to learn:

- The principles and standards of engineering and machine drawing.
- The skills in visualizing and creating orthographic views of machine components. train the student to conduct performance and heat balance test on IC Engines.
- The part modeling and assembly drawing using CAD tools.
- The symbols, tolerances, and fits used in machine drawing.
- The detailed drawings of mechanical parts and assemblies as per industry standards.

Course Outcomes:

- Interpret and apply BIS conventions for machine drawing.
- Apply the concepts of limits, fits, and tolerances in generating orthographic, sectional, and dimensioned drawings of machine components
- Design part models and assembly drawings using AutoCAD or other drafting software.
- Develop detailed production-ready drawings for various machine elements and assemblies.
- Visualize, model, and document complete assemblies as per standard practice.

List of Experiments:

Drawing of Machine Elements and Simple parts:

Selection of Views, additional views for the following machine elements and parts with every drawing proportion.

1. Screw threads, nuts and bolts, set screws.
2. Keys, cotter joints and knuckle joint.
3. Rivetted joints.
4. Shaft coupling, spigot and socket pipe joint.
5. Journal, pivot and collar and foot step bearings.



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Drawing of Machine Elements: Using Computer aided drafting in addition to conventional drawing

Assembly Drawings:

Drawing of assembled views for the part drawing of the following using conventions and easy drawing proportions.

1. Steam engine parts, Stuffing box, Cross head, Eccentric.
2. Machine tool parts: Tail stock, Tool Post, Machine Vices.
3. Other machine parts: Screw jack, Connecting rod, Plumber block, Fuel Injector.
4. Valves: Steam stop valve, spring loaded safety valve, feed check valve and air cock.

Assembly Drawings: Using Computer aided drafting in addition to conventional drawing

Note:

1. First angle projection to be adopted.
2. All the drawing components, Assembly to be drawn using any Computer aided drafting packages.

Text books:

1. Machine Drawing, N.D.Bhatt, Charotar Publication, 51st Edition, 2022.
2. Machine Drawing with Auto CAD, Goutham Pohit and Goutam Ghosh, Pearson, 2016.

Reference books:

1. Machine Drawing, Bhattacharyya, Oxford, 2011.
2. Machine Drawing, Ajeet Singh, Mc Graw Hill, 2nd Edition, 2012.

Note: External examination is conducted in conventional mode and internal evaluation to be done by both conventional as well as using computer aided drafting.

Electronic Resources:

1. https://eedocs.files.wordpress.com/2014/02/machinedrawing.pdf?utm_source=chatgpt.com
2. https://bharatskills.gov.in/pdf/E_Books/CITS/ED/English/Engineering%20Drawing%20%28Mechanical%29.pdf?utm_source=chatgpt.com

Materials Online:

1. Lab Manual