

**COMPUTER-AIDED MACHINE DRAWING LAB**

<b>Course Code</b>	<b>23ME3352</b>	<b>Year</b>	II	<b>Semester</b>	I
<b>Course Category:</b>	Professional Core	<b>Branch:</b>	ME	<b>Course Type</b>	Lab
<b>Credits:</b>	1.5	<b>L-T-P:</b>	0-0-3	<b>Prerequisites</b>	Engineering Graphics
<b>Continuous Internal Evaluation:</b>	30	<b>Semester End Evaluation:</b>	70	<b>Total Marks:</b>	100

**Course outcomes**

<b>COs</b>	<b>Statements</b>	<b>Blooms Level</b>
CO1	Demonstrate the conventional representations of materials and machine components.	L3
CO2	Model riveted, welded and key joints using CAD system.	L6
CO3	Create solid models and sectional views of machine components.	L6
CO4	Generate solid models of machine parts and assemble them.	L5
CO5	Translate 3D assemblies into 2D drawings.	L6

**Contribution of Course outcomes towards achievement of programme outcomes & Strength of correlations (High:3, Medium: 2, Low:1)**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1		1		3					3			3	1
CO2	1		1		3					3			3	1
CO3	1		1		3					3			3	1
CO4	1		1		3					3			3	1
CO5	1		1		3					3			3	1

<b>Syllabus</b>	
<b>Course Content</b>	<b>MAPPED COs</b>
<p>A</p> <p><b>The following are to be done by any 2D software package</b></p> <p><b>Conventional representation of materials and components:</b></p> <p><b>Detachable joints:</b> Drawing of thread profiles, hexagonal and square-headed bolts and nuts, bolted joint with washer and locknut, stud joint, screw joint and foundation bolts.</p> <p><b>Riveted joints:</b> Drawing of rivet, lap joint, butt joint with single strap, single riveted, double riveted double strap joints.</p> <p><b>Welded joints:</b> Lap joint and T joint with fillet, butt joint with conventions.</p> <p><b>Keys:</b> Taper key, sunk taper key, round key, saddle key, feather key, woodruff key.</p> <p><b>Couplings:</b> rigid – Muff, flange; flexible – bushed pin-type flange coupling, universal coupling, Oldham’s coupling.</p>	<p>CO1, CO2</p>
<p>B</p> <p><b>The following exercises are to be done by any 3D software package:</b></p> <p><b>Sectional views:</b></p> <p>Creating solid models of complex machine parts and sectional views.</p> <p><b>Assembly drawings:(Any four of the following using solid model software)</b></p> <p>Lathe tool post, tool head of shaping machine, tail-stock, machine vice, gate valve, carburetor, piston, connecting rod, eccentric, screw jack, plumber block, axle bearing, pipe vice, clamping device, Geneva cam, universal coupling.</p>	<p>CO3, CO4, CO5</p>

<b>Learning Resources</b>
<p><b>Text Books</b></p> <ol style="list-style-type: none"> <li>1. Machine Drawing by K.L.Narayana, P.Kannaiah and K.Venkat Reddy, New Age International Publishers, 3/e, 2014</li> <li>2. Machine drawing by N.Sideswar, P. Kannaiah, V.V.S.Sastry, TMH Publishers. 2014.</li> </ol>
<p><b>Reference Books</b></p> <ol style="list-style-type: none"> <li>1. Cecil Jensen, Jay Helsel and Donald D.Voisinet, Computer Aided Engineering Drawing, Tata McGraw-Hill, NY, 2000.</li> <li>2. James Barclay, Brain Griffiths, Engineering Drawing for Manufacture, Kogan Page</li> </ol>

Science, 2003.

3. N.D.Bhatt, Machine Drawing, Charotar Publishers, 50/e, 2014.

**Online Learning Resources:**

- <https://eedocs.wordpress.com/wp-content/uploads/2014/02/machinedrawing.pdf>
- <https://archive.nptel.ac.in/courses/112/105/112105294/>
- [https://www.edx.org/learn/engineering/dassault-systemes-solidworks-solidworks-cad-fundamentals?index=product&queryID=c90b35a82a6ef58b0d6f89679c63f6a1&position=2&linked\\_from=autocomplete&c=autocomplete](https://www.edx.org/learn/engineering/dassault-systemes-solidworks-solidworks-cad-fundamentals?index=product&queryID=c90b35a82a6ef58b0d6f89679c63f6a1&position=2&linked_from=autocomplete&c=autocomplete)
- [https://www.youtube.com/watch?v=0bQkS3\\_3Fq4](https://www.youtube.com/watch?v=0bQkS3_3Fq4)