

MACHINE DRAWING THROUGH CAD LABORATORY

III Semester: ME								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
AMEB07	Core	L	T	P	C	CIA	SEE	Total
		0	0	3	1.5	30	70	100
Contact Classes: Nil		Tutorial Classes: Nil		Practical Classes: 42			Total Classes: 42	
<p>OBJECTIVES: The course should enable the students to: The course should enable students to I. Understand Code of drawing practice as per BIS conventions for mechanical elements using AutoCAD. II. Practice the drawing methods for sectioning of joints, couplings, bearings, keys. III. Prepare assembly drawings, sectional views and bill of materials for selected assemblies.</p> <p>COURSE LEARNING OUTCOMES (CLOs): The students should enable to: 1. Sketch the conventional representation of the machine elements 2. Draw the different types of sectional views. 3. Understand of various fasteners. 4. Understand of various joints. 5. Draw the different types of couplings. 6. Draw the different types of bearings. 7. Creation of working drawings of Machine parts. 8. Create the Assembly drawings. 9. Ability to do part drawing. 10. Assemble the various parts of an engine.</p>								
Week-1	CONVENTIONAL REPRESENTATION							
Conventional representation of materials, common machine elements and parts such as screws, nuts, bolts, keys, gears, webs and ribs; Introduction to AutoCAD.								
Week-2	SECTIONAL VIEWS							
Types of sections, selection of section planes and drawing of sections and auxiliary sectional views, parts not usually sectioned.								
Week-3	DIMENSIONING							
Methods of dimensioning, general rules for sizes, and placement of dimensions for holes, centers, and curved and tapered features.								
Week-4	WORKING DRAWINGS							
Types of drawings—working drawings for machine parts.								

Week-5	MACHINE ELEMENTS
Drawing of machine elements and simple parts; Selection of orthogonal views and additional views for the following machine elements and parts with drawing proportion, popular forms of screw threads, bolts, nuts and stud bolts.	
Week-6	KEYS AND COTTER JOINTS
Keys, cotter joints, and knuckle joint.	
Week-7	RIVETED JOINTS
Riveted joints for plates.	
Week-8	COUPLINGS
Shaft couplings and spigot joint.	
Week-9	BEARINGS
Journal, pivot, and collar bearing.	
Week-10	ASSEMBLY DRAWINGS-ENGINE PARTS
Assembly drawings Assembly drawings for the following, using conventions and drawing proportions: Engine parts–stuffing box.	
Week-11	CONNECTING ROD AND ECCENTRIC
Eccentrics, I.C. engine connecting rod.	
Week-12	SCREW JACK
Screw jack.	
Week-13	TAIL STOCK AND MACHINE VICE
Machine vice and tailstock.	
Week-14	SAFETY VALVES
Rams-bottom Safety Valve, feed check valve.	
Text Books:	
<ol style="list-style-type: none"> 1. K.L. Narayana, P. Kannaiah, K. Venkata Reddy, “Machine Drawing”, New Age Publishers, 3rd Edition, 2012. 2. K.C. John, “Text book of Machine Drawing”, PHI Eastern Economy, 1st Edition,2010. 3. P.S Gill, “Machine Drawing”, S.K Kataria& Sons, 1stEdition,2013. 4. Junnarkar N.D, “Machine Drawing”, Pearson Education, 1st Edition,2007. 5. Basudeb Bhattacharya, “Machine Drawing”, Oxoford University Press, 1st Edition,2011. 6. N. D. Bhatt, V. M Pancahal, “Machine Drawing”, Charotar, 1st Edition,2014. 7. R. K. Dhavan, “A Text book of Machine drawing”, S.Chand Publication & Co, New Delhi,2nd Edition,2008. 	

Web References:

1. http://web.iitd.ac.in/~achawla/public_html/201/sheets/sheet5/sheet5.pdf
2. https://drive.google.com/file/d/0B_GCh7LMfHf6Z0VNWTNHU3pMSTg/view?pref=2&pli=1
3. <http://www.uiet.co.in/downloads/20140911122818-Machine20Drawing.pdf>
4. <http://listpdf.com/ma/machine-drawing-book-pdf.html>