

TCET DEPARTMENT OF MECHANICAL ENGINEERING (MECH) Credit Based Grading Scheme(Revised - 2012) - University of Mumbai CBGS-2012(R)



Semester Plan

TCET/FRM/IP-02/10 Semester: III

(Theory) Program MECH Revision: A

Course: CAMD

Class: SE MECH -B

Sr. No.	Prerequisite/ Bridge course:	Duration (Week /Hrs)	Modes of Learning	Recommended Sources
1	Prerequisite Course: Engineering Drawing	4 hours	Self Learning/ Revision	Textbooks: 1. Engineering Drawings - By N.D.Bhatt.

## **Class Room Teaching**

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Book Reference	Remarks
1	1	L 2.1	Preparation of 2-D drawings of standard machine elements nuts, bolts.	Laptop , Projector, chalk , Board	19-07-2017/	1,6	
2	1	L 3.1	Preparation of 2-D drawings of standard machine elements keys, cotter, screws, spring	Laptop , Projector, chalk , Board	26-07-2017/	1,6	
3	1	L 3.2	Conventional representation of threaded parts, Types of threads; thread designation, Conventional representation of machine components and materials, Designation of standard components	Laptop , Projector, chalk , Board	27-07-2017/	1,6	
4	1	L 4.1	Solid Geometry: Intersection of surfaces and interpenetration of solids	Laptop , Projector, chalk , Board	02-08-2017/	9,10	
5	1	L 4.2	Intersection of prism with prism; cylinder or cone,	Laptop , Projector, chalk , Board	03-08-2017/	9,10	
6	1	L 5.1	Intersection of cylinder with prism; cylinder or cone,	Laptop , Projector, chalk , Board	09-08-2017/	9,10	
7	1	L 5.2	Primary auxiliary views	Laptop , Projector, chalk , Board	10-08-2017/	9,10	
8	2	L 6.1	Geometric Dimensioning and Tolerancing (GD&T) : Dimensioning with tolerances indicating various types of fits,	Laptop , Projector, chalk , Board	16-08-2017/	1,6	
9	2	L7.1	Geometric Dimensioning and Tolerancing (GD&T) : Dimensioning with tolerances indicating various types of fits,	Laptop , Projector, chalk , Board	24-08-2017/	1,6	
10	2	L 8.1	Details and assembly drawing: Types of assembly drawings, part drawings,	Laptop , Projector, chalk , Board	30-08-2017/	1,6	
11	2	L 8.2	Details and assembly drawing:drawings for catalogues and instruction manuals, patent drawings, drawing standards	Laptop , Projector, chalk , Board	31-08-2017/	1,6	

13 2 19 Preparation of details and assembly drawing of Clapper that we have and the projector, that and Milling tail stock, jigs and fictures 07-09-2017/ 1.6   14 2 L10. Cotter, Knuckle joint, Keys: Laptop, Projector, that B. Board 13-09-2017/ 1.6   15 2 L10. Coupling: simple, multi, theys: Laptop, Projector, that B. Board 14-09-2017/ 1.6   16 2 L11.1 Coupling: Simple, multi, theys: Laptop, Projector, that B. Board 20-09-2017/ 1.6   17 3 L11.2 Coupling: Simple, soil, they simple, multi, Baard 20-09-2017/ 1.6   18 3 L11.1 Coupling: Simple, soil, they simple, so	12	2	L 9.1	Introduction to unit assembly drawing, steps involved in preparing assembly drawing from details and vice-versa,	Laptop , Projector, chalk , Board	06-09-2017/	1,6	
14 2 L10.1 Cotter, Knuckle joint, Keys: keys-sunk, parallel woodrift, saddle, feather etc. Laptop., Projector, chak, Board 13-09-2017/ 1,6   15 2 L10.2 Coupling: Simple, mulft, fanged Protected flange coupling: Unhersal coupling Laptop., Projector, chalk, Board 20-09-2017/ 1,6   16 2 L11.1 Coupling: Othersa's coupling: Unhersal coupling Laptop., Projector, chalk, Board 20-09-2017/ 1,6   17 3 L11.2 Preparation of details and assembly drawings of Basined bearing. Laptop., Projector, chalk, Board 21-09-2017/ 1,6   18 3 L12.1 Preparation of ball and representation of ball and pearing. footstep bearing Laptop., Projector, chalk, Board 27-09-2017/ 1,6   19 4 L12.2 Classification of Pulleys, midting tox, expansion point Laptop., Projector, chalk, Board 04-10-2017/ 1,6   20 4 L13.1 Socket and spigot joint, Gland assembly drawing Si Vakes, L2. Engine parts: Pixes of vakes, Gate vake, Globe vake, Gate vaketh the mimum wews. 18-10-2017/ 1,6	13	2	L 9.2	Preparation of details and assembly drawings of Clapper block, Single tool post, Lathe and Milling tail stock, jigs and fixtures	Laptop , Projector, chalk , Board	07-09-2017/	1,6	
15 2 L10.2 Coupling: minple, muff, flanged Protected flange Laptop, Projector, chalk, Board 14-09-2017/ 1.6   16 2 L11.1 Coupling: Universal coupling Laptop, Projector, chalk, Board 20.09-2017/ 1.6   17 3 L11.2 Coupling: Simple, Solid, Bushed bearing, Simple, Solid, Bushed bearing, footsep bearing, chalk, Board 21-09-2017/ 1.6   18 3 L12.1 Preparation of ball and representation of ball and bearing, footsep bearing, footsep bearing, chalk, Board 27-09-2017/ 1.6   19 4 L12.2 Classification of Pulleys, pulleys: Flat bet, V-balk, Pope bet, Fast and loose pulleys. Laptop, Projector, chalk, Board 28-09-2017/ 1.6   20 4 L13.1 Schering, footsep bearing, footsep b	14	2	L 10.1	Cotter, Knuckle joint, Keys: keys-sunk, parallel woodruff, saddle, feather etc.	Laptop , Projector, chalk , Board	13-09-2017/	1,6	
16 2 L11.1 Coupling: Oldham's coupling. Universal coupling Laptop, Projector, chalk, Board 20-09-2017/ 21-09-2017/ 1.6   17 3 L11.2 Preparation of details and assembly drawings of Bearings: Simple, solid, Busteeb bearing Laptop, Projector, chalk, Board 21-09-2017/ 1.6   18 3 L12.1 Preparation of ball and roller bearing, Protector, roll R, Board 27-09-2017/ 1.6   19 4 L12.2 Classification of Pulleys, Pulleys: Flat bett, V-belt, rope bett, Fast and loose pulleys. Laptop, Projector, chalk, Board 28-09-2017/ 1.6   20 4 L13.1 Socket and splipt joint, Gland iont Laptop, Projector, chalk, Board 04-10-2017/ 1.6   21 5 L13.1 Socket and splipt joint, Gland iont Laptop, Projector, chalk, Board 04-10-2017/ 1.6   21 5 L13.1 Preparation of details and assembly drawings of Valves, L2. Engine parts: Types of valve, Introduction to L2. Engine parts: Piston, Connecting rod, Cross head, Crankshft, Carburctor, Fuel purp, Injector, and Spark pug 05-10-2017/ 1.6   23 6 L14.1 Reverse Engineering of a physical model measurement, sketch the minimum views s. Laptop, Projector, chalk, Board 18-10-2017/   24 6 L15.1 Reverse Engineering of a physical model isketch the minimum views s. Laptop, P	15	2	L 10.2	Couplings: simple, muff, flanged Protected flange coupling,	Laptop , Projector, chalk , Board	14-09-2017/	1,6	
17 3 L11.2 Preparation of details and assembly drawings of meaning: Simple, solid, Bushed bearing. Isource that assembly drawings of meaning. Simple, solid, Bushed bearing. Isource that, Board 21-09-2017/ 1,6   18 3 L12.1 L12.5. Conventional representation of ball and meaning. Footstep bearing. Footstep bearing. Classification of Pulleys. Projector, chalk, Board 27-09-2017/ 1.6   19 4 L12.2 Pulley: Flat bett, V-bett, rope bett, Fast and loose pulleys. Laptop, Projector, chalk, Board 28-09-2017/ 1.6   20 4 L13.1 Sock and spigot joints. Gland and suffing box, expansion joint Laptop, Projector, chalk, Board 04-10-2017/ 1.6   21 5 L13.1 Classification of details and assembly drawings of Valves, Incoduction to LC. Engine parts: Types of Valves, introduction to LC. Engine parts: Types of Valves, introduction to LC. Engine parts: Types of Valves, introduction to LC. Engine parts: Pyston, Concenting rod, Crass head, Crankshaft, Carburettor, Fuel pump, injector, and Spark puig 05-10-2017/ 1.6   23 6 L14.1 Reverse Engineering of a physical model; disasembling of physical model; disasembling puig 1.6 1.6   24 6 L15.1 Reverse Engineering of a physical model; disasembling of physical model; disasembling of physical model; disasembling of physical model; disasembling of a physical model; disact the minimum wiews. 1.6   24 6 L15.1 Re	16	2	L 11.1	Couplings: Oldham's coupling, Universal coupling	Laptop , Projector, chalk , Board	20-09-2017/	1,6	
18 3 L12.1 L.S. conventional representation of ball and roller bearing. Podestal bearing. footstep bearing footstep bearing footstep bearing bearing. footstep bearing bea	17	3	L 11.2	Preparation of details and assembly drawings of Bearings: Simple, solid, Bushed bearing	Laptop , Projector, chalk , Board	21-09-2017/	1,6	
19   4   L12.2   Classification of Pulleys, Pulleys: Flat belt, V-belt, rope belt, Fast and loose pulleys.   Laptop, Projector, chalk, Board   28-09-2017/   1,6     20   4   L13.1   Pipe joints: Flanged joints, Socket and spigot joint, Gland and stuffing box, expansion joint   Laptop, Projector, chalk, Board   04-10-2017/   1,6     21   5   L13.1   Neproprints: Types of Valves, Introduction to LC. Engine parts: Tokon, Connecting rod, Cross head, Crankshaft, Carburettor, Fuel pump, injector, and Spark plug   05-10-2017/   1,6     23   6   L14.1   Reverse Engineering of a physical model: wates flood easts and assembling of an physical model: measurement, sketch the minimum views s.   12-10-2017/   1,6     24   6   L14.1   Reverse Engineering of a physical model: measurement, sketch the minimum views required for each component, convert these sketch sets into 3-D model and create an assembling of an physical model: measurement, sketch the minimum views required for each component, convert these sketch sets into 3-D model and create an assembling drawing with actual dimensions   18-10-2017/   1,6     24   6   L15.1   Reverse Engineering of a physical model: measurement, sketch the minimum views required for each component, convert these sketches into 3-D	18	3	L 12.1	I.S. conventional representation of ball and roller bearing, Pedestal bearing, footstep bearing	Laptop , Projector, chalk , Board	27-09-2017/	1,6	
20 4 L13.1 Pipe joints: Flanged joints, Gland and stuffing box, expansion joint Laptop, Projector, chalk, Board 04-10-2017/ 1,6   21 5 L13.1 Preparation of details and assembly drawings of Valves, introduction to LC. Engine parts: Types of Valves, introduction to LC. Engine of the valve, Globe valve, Globe valve, Non return Valve, LC. Engine parts: Piston, Connecting rot, Cronstead, Crankshaft, Carburettor, Fuel pump, injector, and Spark plug 05-10-2017/ 1,6   23 6 L14.1 Reverse Engineering of a physical model; disasembling of any physical model; disasembling assembly drawing with actual dimensions 12-10-2017/ 1,6   24 6 L15.1 Reverse Engineering of a physical model; disasembling of any physical model; disasembling assembly drawing with actual dimensions 18-10-2017/ 1,6   24 6 L15.1 Reverse Engineering of a physical model; setten the minimum views required for each component, convert these sketches into 3-D model an	19	4	L 12.2	Classification of Pulleys, Pulleys: Flat belt, V-belt, rope belt, Fast and loose pulleys.	Laptop , Projector, chalk , Board	28-09-2017/	1,6	
21 5 L 13.1 Preparation of details and assembly drawings of Valves, I.C. Engine parts: Types of Valves, introduction to I.C. Engine parts: Piston, valve, Gate valve, Globe valve, Son return Valve, I.C. Engine parts: Piston, Connecting rod, Cross head, Crankshaft, Carburettor, Fuel pump, injector, and Spark plug 05-10-2017/ 1,6   23 6 L 14.1 Reverse Engineering of a physical model: disassembling of any physical model: disassembling of any physical model: disassembling of any physical model: disassembling assembly drawing vith actual dimensions Laptop , Projector, chalk , Board 12-10-2017/   24 6 L 15.1 Reverse Engineering of a physical model diminum views Laptop , Projector, chalk , Board 18-10-2017/   24 6 L 15.1 Reverse Engineering of a physical model diminum views Laptop , Projector, chalk , Board 1.6   24 6 L 15.1 Reverse Engineering of a physical model diminum views required for each component, convert these sketches into 3-D model and create an assembly drawing with actual dimensions Laptop , Projector, chalk , Board 1.6   Remark: Syllabus Coverage: Practice Session: 2 Content Beyond Syllabus:	20	4	L 13.1	Pipe joints: Flanged joints, Socket and spigot joint, Gland and stuffing box, expansion joint	Laptop , Projector, chalk , Board	04-10-2017/	1,6	
23   6   L 13.2   Preparation of details and assembly drawings Air cock; Blow off cock, Steam stop valve, Gate valve, Globe valve, Non return Valve, I.C. Engine parts: Piston, Connecting rod, Cross head, Crankshaft, Carburettor, Fuel pump, injector, and Spark plug   Laptop , Projector, chalk , Board   1,6     23   6   L 14.1   Reverse Engineering of a physical model minimum views .   Laptop , Projector, chalk , Board   12-10-2017/     24   6   L15.1   Reverse Engineering of a physical model statch the minimum views .   Laptop , Projector, chalk , Board   18-10-2017/     24   6   L15.1   Reverse Engineering of a physical model statch the minimum views required for each component, convert these sketches into 3-D model and create an assembly drawing with actual dimensions   Laptop , Projector, chalk , Board   18-10-2017/     1.6   No of (fectures planned)/(fecture taken):   Practice Session: 2   Content Beyond Syllabus:	21	5	L 13.1	Preparation of details and assembly drawings of Valves, I.C. Engine parts: Types of Valves, introduction to I.C. Engine	Laptop , Projector, chalk , Board	04-10-2017/	1,6	
23   6   L 14.1   Reverse Engineering of a physical model: disassembling of any physical model; disassembling of any physical model, measurement, sketch the minimum views .   Laptop , Projector, chalk , Board   1,6     24   6   L15.1   Reverse Engineering of a physical model: sketch the minimum views required for each component, convert these sketches into 3-D model and create an assembly drawing with actual dimensions   Laptop , Projector, chalk , Board   18-10-2017/   1,6     Remark:   Syllabus Coverage:   Practice Session: 2   Content Beyond Syllabus:		5	L 13.2	Preparation of details and assembly drawings Air cock; Blow off cock, Steam stop valve, Gate valve, Globe valve, Non return Valve, I.C. Engine parts: Piston, Connecting rod, Cross head, Crankshaft, Carburettor, Fuel pump, injector, and Spark plug	Laptop , Projector, chalk , Board	05-10-2017/	1,6	
24   6   L15.1   Reverse Engineering of a physical model: sketch the minimum views required for each component, convert these sketches into 3-D model and create an assembly drawing with actual dimensions   Laptop , Projector, chalk , Board   18-10-2017/   1,6     Remark:   Syllabus Coverage:   Practice Session: 2   Content Beyond Syllabus:	23	6	L 14.1	Reverse Engineering of a physical model: disassembling of any physical model ,measurement, sketch the minimum views.	Laptop , Projector, chalk , Board	12-10-2017/	1,6	
Remark:     Syllabus Coverage:     Practice Session: 2     Content Beyond Syllabus:       No. of (lectures planned)/(lecture taken):     Session: 2     Session: 2     Session: 2	24	6	L15.1	Reverse Engineering of a physical model: sketch the minimum views required for each component, convert these sketches into 3-D model and create an assembly drawing with actual dimensions	Laptop , Projector, chalk , Board	18-10-2017/	1,6	
No. of (lectures planned)/(lecture taken):	Remark:     Syllabus Coverage:     Practice Session: 2     Content Beyond Syllabus					labus:		
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Advanced course: Machine machines	Design,Theory of	20 Hours	Online course on Machine Design, Theory of Machines	Web sources: 1. NPTEL- https://onlinecourses.nptel.ac.in Textbook reference: 1.Machine Design-Bhandari 2. Theory of Machines-Ratan			
1. Machine Drawing by N.D. Bhatt.     2. A textbook of Machine Drawing by Laxminarayan and M.L. Mathur, Jain brothers Delhi     3. Machine Drawing by Kamat and Rao     4. Machine Drawing by M. B. Shah     5. A text book of Machine Drawing by R. B. Gupta, Satyaprakashan, Tech. Publication     6. Machine Drawing by K.I.Narayana, P. Kannaiah, K.Venkata Reddy     7. Machine Drawing by Sidheshwar and Kanheya     Autodesk Inventor 2011 for Engineers and Designers by ShamTickoo and SurinderRaina, Dreamtech Press     9. Engineering Drawing by N D Bhatt							
Digital Reference: 3.1 www.nptel.ac.in							
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Mr. Jayant Patil	Dr. Siddesh	SD	Dr. R R Sedamka	ar			
Date: 21.07.17	Date: 21.07.17		Date: 21.07.	17			
Note:							
1. Plan date and completion date should b	e in compliance						

2. Courses are required to be taught with emphasis on resource book, course file, text books, reference books, digital references etc.

Planning is to be done for 15 weeks where 1<sup>st</sup> week will be AOP, 2<sup>nd</sup> -13<sup>th</sup> for effective teaching and 14<sup>th</sup> -15<sup>th</sup> week for effective university examination oriented teaching, mock practice session and semester consolidation.
According to university syllabus where lecture of 4 hrs/per week is mentioned minimum 55 hrs and in case of 3 lectures per week minimum 45 lectures are to be engaged are required to be engaged during the semester and therefore accordingly semester planning for delivery of theory lectures shall be planned.

5. In order to improve score in NBA, faculty members are also required to focus course teaching beyond university prescribed syllabus and measuring the outcomes w.r.t learning course and programme objectives.

6. Text books and reference books are available in syllabus. Here only additional references w.r.t. non -digital/ digital sources can be written (if applicable)

7. Technology to be used in class room during lecture shall be written below the topic planned within the bracket.