

University of Mumbai			
CLASS: F.E (All Branches of Engineering)		Semester - II	
SUBJECT: Engineering Drawing			
Periods per week 01 Period of 60 min	Lecture	3	
	Practical	4	
	Tutorial	-	
		Hours	Marks
Evaluation System	Theory Examination	3	75
	Practical	2	50
	Oral Examination	--	--
	Term Work	-	25
	Total		150

Details of the Syllabus:-

Sr.No	Details	Hrs
01	Module 1 <ul style="list-style-type: none"> • Introduction: Drawing Instruments, symbolic lines, letterings, dimensioning systems as per I.S. conventions, geometrical constructions and tangential arcs. 	02
02	Module 2 Projections: <ul style="list-style-type: none"> • Projection of points and lines inclined to both the reference planes including HT and VT • Projection of right regular solids (cube, prism, pyramid, cylinder, and cone) inclined to both HP and VP (excluding spheres, hollow and composite solids) • Development of surface (excluding reverse development) 	05 06 03
03	Module 3 Sections: Section of solids (cube, prism, pyramid, cylinder, and cone) cut by plane perpendicular to at-least one reference plane (excluding curved cutting planes)	04
04	Module 4 Orthographic projections: <ul style="list-style-type: none"> • Multi-view orthographic projections of simple machine parts by first angle method as recommended by Indian standards • Sectional views of simple machine parts (full section and half section only). • Reading of orthographic projections (missing views) 	04 04 06

05	Module 5 Isometric projections: Isometric projections/ drawings of blocks (plain and cylindrical excluding spheres)	04
06	Module 6 <ul style="list-style-type: none"> • Engineering Curves: Parabola, Ellipse, Hyperbola, Cycloid and Involutes • Free hand sketches of fasteners Thread profile – IS conventions of external and internal threads, drilled hole, blind hole and tapped hole Bolts, Nuts, Set screws. Foundation bolts and locknuts. 	03 03

Term work :

Term work shall consist of the following:

PART I : Drawing sheet

Five Drawing sheets to be prepared on half imperial drawing sheet:

(To be completed in 30 Hrs.)

Sheet No 1: Curves (2 problems) and projections of lines (2 problems)

Sheet No 2: Projections of solids (2 problems)

Sheet No 3: Orthographic projections(1 problem) and sect. ortho. Projections (1 problem)

Sheet No 4: Reading of orthographic projections (2 problems)

Sheet No 5: Isometric view (2 problems) and free hand sketches of fasteners.

Homework : One sketch book, A-3 size, consisting of minimum 3 problems from each module. Duly signed sketch book is part of term-work.

PART II : Computer Aided Drawing (Auto- CAD)

Practice on Auto- Cad : Theory and practice to be completed during practical sessions.

Sr. No.	Topic	No. of Hours
1	Introduction to Auto- Cad	06
2	Fundamental of 2-D Constructions	04
3	Orthographic projections	06
4	Sectional orthographic projections	06
5	Reading of Orthographic projections	04
6	Fundamental of 3-D drawing Isometric view	04

Printout of problems solved in the practical class to be attached in the Term work (on Sr. No. 3,4,5 and 6)

Theory Examination:

1. Question paper will comprise of total 7 questions, each of 20 marks.
2. Only five questions need to be solved.
3. Question 1 will be compulsory and based on entire syllabus.
4. Remaining question will be mixed in nature (for example suppose Q.2 has part (a) from module 3 then part (b) will be from any module other than module 3).
5. In question paper weightage of each module will be proportional to number of respective lecture hours as mentioned in the syllabus.

Practical Examination:

Practical Examination will be based on Part II of the Term work(Practice on Auto-cad)

Term Work

Marks

The distribution of marks for term work shall be as follows:

1. Part I and Part II work (Drawing sheets, Sketch book and printouts)	10
2. Test (at least one)	10
3. Attendance (Theory and Practical)	05
Total	25 marks

The final certification and acceptance of TW ensures the satisfactory performance of laboratory work and minimum passing in the TW.

Recommended Books:

1. Elementary Engineering Drawing N.D. Bhatt, Charotar Publising house
2. Mastering Auto CAD, G Omura by Sybers (Autodesk Press), Wiley India
3. Understanding Auto CAD, Sham Tiekou, Autodesk Press, Wiley India
4. Machine Drawing, ics By N.D. Bhatt, Charotar Publising house
5. Engineering Drawing By M.B. Shah and B.C.Rana
6. Engineering Graphics with Auto- Cad 2007 by James D. Bethune, 1st Edition, Pearson Education.