Semester	**:**	**II**			
Course No.	**:**	**FMPE-122**	**Credit Hrs.**	**:**	**2(0+2)**
Course Title	**:**	**Engineering Drawing**			

SYLLABUS

Objectives : (i) To develop student's ability to visualize, interpret and communicate technical designs through graphical representation, ensuring accuracy and uniformity in documentation.

(ii) To enhance student's skills to create detailed assembly drawing of machine components, emphasizing standard conventions, tolerances and specifications required for manufacturing and assembly.

PRACTICAL

Introduction to engineering drawing, practice of different layout drawings; Drawing instruments and their use; Introduction to lines, letterings, single stroke letters and gothic letters; Dimensioning, dimension line, extension line, arrow head, continuous and progressive dimensioning; Introduction of drawing scales, representative fraction; Practice on orthographic projections, reference planes, points and lines in space; Drawing for orthographic projection of points by first angle projection method; Third angle methods of projection; Projection of planes; Projection of solids: polyhedral, cylinder, cone; Projection of solids: Prism and pyramids; Development of surfaces of geometrical solids; Drawing the section of solids: cylinder, cone and sphere; Introduction to isometric scale, isometric view and isometric drawing; Isometric projection of geometrical solids; Preparation of working drawing from models and isometric views; Sectional drawing of simple machine parts; Nomenclature, thread profile, multi start threads, left and right hand threads; Conventional representation of threads; Forms of screw threads like metric thread, Whitworth thread; Square thread: acme thread, knuckle thread, buttress thread; Square headed and hexagonal nuts and bolts; Different types of lock nuts, studs, machine screws, cap screws and woods screws; Processes for producing leak proof joints; Drawing of different types of rivet heads and riveted joints and foundation bolts; Drawing of stud screws, set screws, butt, hexagonal and square; Drawing of keys, taper, rank taper, hollow saddle etc.; Symbols for different types of welded joints.

TEACHING SCHEDULE

PRACTICAL [FMPE-122]

Exercise No.	Exercise Title
1	Study of engineering drawing-meaning, layout; Study of Drawing instruments and their use: Introduction to engineering drawing, practice of different layout drawings, Drawing instruments and their use
2	Study of lines and their representation; Study of lettering methods: Introduction to lines, letterings, single stroke letters and gothic letters
3	Study of dimensioning methods and drawing scales: Dimensioning, dimension line, extension line, arrow head, continuous and progressive dimensioning, Introduction of drawing scales, Representative fraction
4	Study of Projection methods, Study of orthographic projection; Study of Projection of Points: Practice on orthographic projections, reference planes, points and lines in space; Drawing for orthographic projection of points by first angle projection method; Third angle methods of projection
5	Study of Projection of lines
6-7	Study of Projection of planes
8-10	Study of Projection of solids: polyhedral, cylinder, cone
11-12	Study of Projection of solids: Prism and pyramids
13-15	Study of Development of surfaces of geometrical solids
16-18	Study of Drawing the section of solids: cylinder, cone and sphere
19	Study of Introduction to isometric scale, isometric view and isometric drawing
20-21	Study of Isometric projection of geometrical solids
22-23	Preparation of working drawing from models and isometric views
24	Study of Sectional drawing of simple machine parts; Nomenclature Thread profile, multi-start threads, left and right-hand threads; Conventional representation of threads
25-26	Study of forms of screw threads: metric thread, Whitworth thread, Square thread: acme thread, knuckle thread, buttress thread
27	Study of Square headed and hexagonal nuts and bolts
28	Study of different types of lock nuts, studs, machine screws, cap screws and woods screws
29	Study of Drawing of stud screws, sets crews, butt, hexagonal and square
30	Study of Processes for producing leak proof joints; Drawing of different types of rivet heads and riveted joints and foundation bolts
31	Study of drawing of keys, taper, rank taper, hollow saddle etc.
32	Study of symbols for different types of welded joints

Suggested Readings [FMPE-122]:

1. Bhatt, N.D. 2010. Elementary Engineering Drawing. Charotar Publishing House Pvt. Ltd., Anand.
2. Bhatt, N.D. and Panchal, V.M. 2013. Machine Drawing. Charotar Publishing House Pvt. Ltd., Anand.
3. Narayana, K. L. and Kannaiah, P. 2010. Machine Drawing. Scitech Publications (India) Pvt. Ltd., Chennai.