RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT- 3	Sheet No.

Branch	Mechanical Engineering	Semester	IV

Course Code	401	Course Name	Machine drawing and Computer Aided Drafting

Course Outcome 1	**Describe Projection, Multi view representation and Sectional views.**	Teach Hrs	Marks
Learning Outcome 1	Describe concepts of projections and multi-view representation.	**1+4**	**05**
Contents	Projection: orthographic projection. First and third angle projection, superfluous view, choice of views, auxiliary views- views -full and partial, conversion of pictorial views in to orthographic views, conventional representation as per IS: 696.		
Method of Assessment	Paper pen test		
Learning Outcome 2	Explain Sectional views.	**3+7**	**10**
Contents	**Sectional Views** : Full section, half section, partial or broken section, revolved section, removed section, offset section. Sectioning conventions, section lines. Hatching procedure for different materials as per IS code 686 1972. Sectional views of assembled parts. Choosing from IC engine parts, couplings, clutches, brackets, bearing etc. (Use 1st angle projection)		
Method of Assessment	Drawing Examination		
Course Outcome 2	**Draw dimensioning, tolerance, machining and welding symbols**	Teach Hrs	Marks
Learning Outcome 1	Draw concepts of dimensioning and tolerance.	**2+5**	**10**
Contents	Types of dimensions (size and location) dimensioning terms and notations. (use of I.S.Code 696 &2709) general rules for dimensioning and practical hints on dimensioning systems of dimensioning. Dimension of cylinder holes arcs of circle narrow space, angles, counter sunk hole, screw threads taper etc. Application of tolerances. (Use I.S. Code 696)		
Method of Assessment	Assignment		
Learning Outcome 2	Draw different machining and welding symbols	**2+6**	**10**
Contents	Machining marks, finish marks, countersinking, counter boring spot facing, figures and notes for same. Representation of characteristics machining (circularity, angularity etc.) (Ref IS 969). Representation of riveted and welded joints, welding symbols, tolerance of forms and positions. Procedure of drawing fits, limits, size, tolerance, clearance etc. Procedure of drawing nut and bolt.		
Method of Assessment	Drawing Examination		
Course Outcome 3	**Prepare a Production drawing.**	Teach Hrs	Marks
Learning Outcome 1	Explain detailed drawings.	**1+4**	**10**
Contents	Detailed drawing, assembly drawing, scale, finish tolerances, notes etc. Title block, tool list, gauge list		
Method of Assessment	Paper Pen Test		
Learning Outcome 2	Draw given views of machine components and their	**9+21**	**40**

	assemblies on drawing sheets.		
Contents	Preparation of production drawing for pattern shop, forging shop, machine shop, preparation of assembly drawing from detailed drawing. Exploded views, sectional pictorial views, plummer block, flange coupling, stepped pulleys, foot-step bearing, universal coupling, connecting rod and piston of I.C. engines, cotter joint and knuckle joint. Preparation of detailed drawing from assembly drawings and assembled pictorial views, Interpretation of production drawing		
Method of Assessment	Drawing Examination		
Course Outcome 4	**Draw different components of a Pipe line.**	Teach Hrs	Marks
Learning Outcome 1	Draw symbols used in pipe drafting.	**2+1**	**05**
Contents	Symbols used in pipe line work as per IS code of practice.		
Method of Assessment	Drawing Examination.		
Learning Outcome 2	Draw various joints/bends/ pipe supports in pipe drafting.	**2+2**	**10**
Contents	C.I. flanged joint, socket and spigot joint, gland and stuffing box, expansion joint, pipe fitting typical pipe bends, pipe supports and accessories.		
Method of Assessment	Drawing Examination.		
Course Outcome 5	Construct individual and assembly drawing using a CAD Software.	Teach Hrs	Marks
Learning Outcome 1	Execute draw and modify commands used in CAD software.	**2+4**	**10**
Contents	Coordinate system, Draw command-line, arc, circle rectangle, polygon, point, ellipse, hatch. erase, copy, offset, array, trim, extend, break, join, chamfer, fillet, move, rotate, scale, stretch, lengthen. Dimensioning Tray settings: snap, grid, ortho, polar, osnap		
Method of Assessment	Lab work		
Learning Outcome 2	Execute format and construction commands used in CAD software.	**2+4**	**10**
Contents	Format commands: line type, point style, units, layers, drawing limit, dimension style, text and text styles, formatting dimension style and multi-leader style		
Method of Assessment	Lab work		
Learning Outcome 3	Construction of drawing using CAD.	**5+16**	**30**
Contents	Practice of assembly drawings using CAD, block, creating layout, insert layout, plotting/printing.		
Method of Assessment	Laboratory test by observation		