LESSON PLAN

ON

ENGINEERING DRAWING

1ST SEMESTER

SESSION: 2022-23

PREPARED BY

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PTGF IN CIVIL ENGINEERING

GOVERNMENT POLYTECHNIC, PURI

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DEPARTMENT OF CIVIL ENGINEERING

Discipline: **CIVIL ENGG.**	Semester: **1ST**	Name of the Teaching Faculty: - **Miss KUSMITA NAYAK**
Subject: **ENGINEERING DRAWING (PR. 03A)**	No. of days/per week class allotted: 06	Semester From date: 25.10.2022 To Date: 20.02.2023 No. of Weeks:15
PRE-REQUISITE	Basic knowledge about Engg. Drawings,Auto CAD	
COURSE OUTCOMES	1. Understand the importance of Engineering Drawing.	
	2. Demonstrate the use of different drawing instrument	
	3. Make free hand lettering and numbering.	
	4. Practice of dimensioning of drawing.	
	5. Undertake different geometric constructions, projections of straight line, planes and solids	
	6. Take up different orthographic projections	
	7. Draw sectional views, development of surface of different solids.	
	8. Develop the concept of building drawing.	
	9. Prepare 2D engineering drawing using Auto CAD software.	

Week	Class day	Practical topics	Delivery Method
1ST	1ST	**1. INTRODUCTION & DEMONSTRATION** 1.1 Identify various sizes of drawing boards, drawing sheets as pr BIS.	Whiteboard
	2ND	1.2 List the types of pencils, instruments, and scales (RF)	Whiteboard
	3RD	1.3 Demonstrate lying of drawing sheet, margin, standard layout and title block as per BIS, folding principle of drawings (blue prints, print outs etc).	Whiteboard
	4TH	**2. TYPES OF LINES, LETTERING & DIMENSIONING** 2.1 Demonstrate and explain the use of various types of lines.	Whiteboard
	5TH	2.2 Demonstrate the principle of single stroke, gothic lettering & numerals as per BIS.	
	6TH	**Drawing Practice**	
2ND	1ST	**3. SCALES** 3.1 Significance of scales in drawing; different scales.	Whiteboard
	2ND	3.2 Define and draw plain sale and diagonal sale	Whiteboard
	3RD	**Drawing Practice & ED Sheet Submission**	Whiteboard
	4TH	**4. CURVES** 4.1 Explain Conic sections with illustration, Explain terms like focus, vertex, directrix and eccentricity.	Whiteboard
	5TH	4.2 Draw conics sections by eccentricity method – Ellipse, Parabola and Hyperbola.	
	6TH	4.3 Draw Ellipse by concentric circle method sand arc of cicle method.	
3RD	1ST	4.4 Draw parabola by Rectangle Method and Tangent Method.	Whiteboard
	2ND	**Drawing Practice**	Whiteboard
	3RD	**Drawing Practice & ED Sheet Submission**	Whiteboard
	4TH	**5. OTHOGRAPHIC PROJECTIONS** 5.1 Demonstrate the principles of 1 st angle	Whiteboard
	5TH	3 rd angle projections with the help of models and draw symbols.	
	6TH	5.2 Draw projection of points.	
4TH	1ST	**Drawing Practice**	Whiteboard
	2ND	5.3 Draw projection of straight line (parallel to both planes, parallel to	Whiteboard

		one and perpendicular to other,	
	3RD	**Drawing Practice**	Whiteboard
	4TH	Parallel to one and inclined to other and inclined to both reference planes	Whiteboard
	5TH	**Drawing Practice**	
	6TH	5.4 Draw plane figure such as squares, rectangles, triangles,	
5TH	1ST	**Drawing Practice**	Whiteboard
	2ND	Circle, Pentagon and hexagon (perpendicular to one plane and inclined to other)	Whiteboard
	3RD	**Drawing Practice**	Whiteboard
	4TH	5.5 Draw projections of solids such as prism, cylinder, cone, tetrahedron	Whiteboard
	5TH	**Drawing Practice**	
	6TH	Pyramid in simple position (with axis parallel to one reference plane and perpendicular to other reference plane).	
6TH	1ST	**Drawing Practice**	Whiteboard
	2ND	**Drawing Practice & ED Sheet Submission**	Whiteboard
	3RD	**ED Sheet Submission**	Whiteboard
	4TH	**Viva - Voce**	Whiteboard
	5TH	**Viva - Voce**	
	6TH	**6. SECTION & DEVELOPMENTS** 6.1 Draw the sectional projection & development of prism,	
7TH	1ST	6.1 Draw the sectional projection & development of prism,	Whiteboard
	2ND	**Drawing Practice**	Whiteboard
	3RD	**Drawing Practice**	Whiteboard
	4TH	Cylinder, cone and pyramid in simple position by a cutting plane perpendicular to one reference plane and inclined to other reference plane.	Whiteboard
	5TH	**Drawing Practice**	
	6TH	**Drawing Practice**	
8TH	1ST	Cone and pyramid in simple position by a cutting plane perpendicular to one reference plane and inclined to other reference plane.	Whiteboard
	2ND	**Drawing Practice**	Whiteboard
	3RD	**Drawing Practice**	Whiteboard
	4TH	6.2 Draw true shape of the cutting sections.	Whiteboard
	5TH	**Drawing Practice**	
	6TH	**Drawing Practice**	
9TH	1ST	**ED Sheet Submission**	Whiteboard
	2ND	**ED Sheet Submission**	Whiteboard
	3RD	**Viva - Voce**	Whiteboard
	4TH	**Viva - Voce**	Whiteboard
	5TH	**Viva - Voce**	Whiteboard
	6TH	**7. ISOMETRIC PROJECTIONS** Draw isometric view & Isometric projection of prism,	
10TH	1ST	Pyramid, cone	Whiteboard
	2ND	Cylinder with axis horizontal	Whiteboard
	3RD	And vertical with construction of isometric scales.	Whiteboard
	4TH	**Drawing Practice**	Whiteboard
	5TH	**Drawing Practice**	Whiteboard
	6TH	**ED Sheet Submission**	
11TH	1ST	**Viva - Voce**	Whiteboard
	2ND	**8. BUILDING DRAWING** 8.1 Explain terms related to building drawing.	Whiteboard
	3RD	8.2 Draw plan, elevation of single room building with verandah (Flat	Whiteboard

		roof according to given line plan and specification).	
	4TH	8.2 Draw plan, elevation of single room building with verandah (Flat roof according to given line plan and specification).	Whiteboard
	5TH	**Explain with neat sketch**	Whiteboard
	6TH	**Drawing Practice**	
12TH	1ST	**Drawing Practice**	Whiteboard
	2ND	**Drawing Practice**	Whiteboard
	3RD	**Drawing Practice**	Whiteboard
	4TH	**ED Sheet Submission**	Whiteboard
	5TH	**ED Sheet Submission**	Whiteboard
	6TH	**Viva - Voce**	
13TH	1ST	**9. PRACTICES ON AUTO CAD** 9.1 Introduction-Settings, Limits etc	Whiteboard
	2ND	9.1 Introduction-Settings, Limits etc	Whiteboard
	3RD	9.1 Introduction-Settings, Limits etc	Whiteboard
	4TH	9.2 Auto CAD commands Draw commands (Line, circle, are polygon, ellipse, rectangle).	Whiteboard
	5TH	Edit command	Whiteboard
	6TH	Dimension commands	
14TH	1ST	Modify Commands for two dimensional drafting only.	Whiteboard
	2ND	9.3 Exercise for practice using Auto CAD.	Whiteboard
	3RD	9.3.1 Orthographic projections of lines,	Whiteboard
	4TH	Planes sand solids as per chapter 5.0	Whiteboard
	5TH	9.3.2 Isometric projection as per Chapter 7.0	Whiteboard
	6TH	**PRACTICE CLASS**	
15TH	1ST	**PRACTICE CLASS**	Whiteboard
	2ND	**Viva - Voce**	Whiteboard
	3RD	**PRACTICE CLASS**	Whiteboard
	4TH	**PRACTICE CLASS**	Whiteboard
	5TH	**PRACTICE CLASS**	Whiteboard
	6TH	**PRACTICE CLASS**	

LEARNING RESOUCES

1. A Text book of Engineering Drawing — N.D. Bhatt.
2. A Text Book of Engineering Graphics & Auto CAD — K Venugopal

WEBSITE RESOUCES:

01. https://www.youtube.com/watch?v=Lng0hVDvsu0&list=PLOzRYVm0a65dtbpo_DP7acjsLYdmWT99r&index=1 (NPTEL)

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