Format K1

Maharashtra State Board of Technical Education, Mumbai

TEACHING PLAN (TP)

Academic Year: **2025-26 (ODD)**
Institute Code and Name: 61303- PPCOE, **Semester**: First
Programme and Code: Electrical Engineering (EE) **Course and Code:** Engineering Graphics (EGR)
Course Code: 311006 **Scheme:** K
Name of Faculty: Ms. Jadhav N.S.
CLASS: FY EE

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COURSE LEVEL LEARNING OUTCOMES (COS)

- CO1 - Draw geometrical figures and engineering curves.
- CO2 - Apply principles of orthographic projections for drawing given pictorial views.
- CO3 - Draw isometric views of given component or from orthographic projections.
- CO4 - Use various drawing codes, conventions and symbols as per IS SP-46 in engineering drawing.
- CO5 - Draw free hand sketches of given engineering elements.

TEACHING-LEARNING & ASSESSMENT SCHEME

Course Code	Course Title	Abbr	Course Category	Learning Scheme					Credits	Paper Duration	Assessment Scheme										Total Marks
				Actual Contact Hrs/Week			SLH	NLH			Theory				Based on LL & TSL Practical				Based on SL		
				CL	TL	LL					FA-TH	SA-TH	Total		FA-PR		SA-PR		SLA		
											Max	Max	Max	Min	Max	Min	Max	Min	Max	Min	
311006	**Engineering Graphics**	**EGR**	**DSC**	**2**	**-**	**4**	**-**	**6**	**3**	**-**	**-**	**-**	**-**	**-**	**50**	**20**	**50@**	**20**	**-**	**-**	**100**

Total IKS Hrs for Sem.: 2 Hrs
Abbreviations: CL- Classroom Learning , TL- Tutorial Learning, LL-Laboratory Learning, SLH-Self Learning Hours, NLH-Notional Learning Hours,
FA - Formative Assessment, SA -Summative assessment, IKS - Indian Knowledge System, SLA - Self Learning Assessment Legends: @ Internal Assessment,
External Assessment, *# On Line Examination , @$ Internal Online Examination

SUGGESTED COS - POS MATRIX FORM

Course Outcomes (COs)	**Programme Outcomes (POs)**							**Programme Specific Outcomes (PSOs)**		
	PO-1 Basic and Discipline Specific Knowledge	**PO-2** Problem Analysis	**PO-3** Design/ Development of Solutions	**PO-4** Engineering Tools	**PO-5** Engineering Practices for Society, Sustainability and Environment	**PO-6** Project Management	**PO-7** Life Long Learning	**PSO- 1**	**PSO- 2**	**PSO- 3**
CO1	3	-	-	2	-	2	-			
CO2	3	-	-	2	-	2	-			
CO3	3	-	-	2	-	2	-			
CO4	3	-	-	2	-	2	-			
CO5	3	-	-	2	-	2	-			

Legends :- High:03, Medium:02,Low:01, No Mapping: - *PSOs are to be formulated at institute level

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Unit No. *(Allocated Hrs.)*	*CO* *Mention only Number*	*TLO* *Mention only Number*	*Unit Name and Learning Content Title / Details*	*No. of Lecture*	*Plan (From-To)*	*Actual Execution (From-To)*	*Teaching method/ Media*	*Remark*
I (03 Hrs)	CO1	TLO 1.1 TLO 1.2 TLO 1.3 TLO 1.4 TLO 1.5	**Unit I Basic Elements of Drawing (14 Marks)**					
			1.1 Drawing Instruments and supporting material: method to use them with applications.	01				
			1.2 Standard sizes of drawing sheets (ISO-A series)	-				
			1.3 I.S. codes for planning and layout	-				
			1.4 Letters and numbers (single stroke vertical)	-				
			1.5 Convention of lines and their applications.	01				
			1.6 Scale - reduced, enlarged & full size	-				
			1.7 Dimensioning techniques as per SP-46 (Latest edition) – types and applications of chain, parallel and coordinate dimensioning	01				
			1.8 Geometrical constructions.	-				
II (06 Hrs)	CO2	TLO 2.1 TLO 2.2 TLO 2.3	**Unit - II Engineering curves & Loci of Points (14 Marks)**					
			2.1 Concept and understanding of focus, directrix, vertex and eccentricity Conic sections.	01				
			2.2 Methods to draw an ellipse by Arcs of circle method & Concentric circles method.	01				
			2.3 Methods to draw a parabola by Directrix-Focus method & Rectangle method	01				
			2.4 Methods to draw a hyperbola by Directrix-Focus method.	01				
			2.5 Methods to draw involutes: circle & pentagon	01				

		TLO 2.4 TLO 2.5	2.6 Methods to draw Cycloidal curve: cycloid, epicycloid and hypocycloid	01				
			2.7 Methods to draw Helix & Archimedean spiral.	01				
			2.8 Loci of points on Single slider crank mechanism with given specifications.	01				
			Unit - III Orthographic Projections					
III (07 Hrs)	CO3	TLO 3.1 TLO 3.2 TLO 3.3 TLO 3.4	3.1 Introduction of projections-orthographic, perspective, isometric and oblique: concept and applications.(No question to be asked in examination)	03				
			3.2 Introduction to orthographic projection, First angle and Third angle method, their symbols. Conversion of pictorial view into Orthographic Views – object containing plain surfaces, slanting surfaces, slots, ribs, cylindrical surfaces. (use First Angle Projection)	04				
			Unit - IV Isometric Projections					
IV 08 Hrs)	CO4	TLO 4.1 TLO 4.2 TLO 4.3 TLO 4.4	4.1 Introduction to Isometric projection**.**	01				
			4.2 Isometric scale and Natural Scale**.**	01				
			4.3 Isometric view and isometric projection.	02				
			4.4 Ilustrative problems related to simple objects having plain, slanting, cylindrical surfaces and slots on slanting surfaces.	02				
			4.5 Conversion of orthographic views into isometric View/projection.	02				
			Unit - V Free Hand Sketches of Engineering Elements					
V (06 Hrs)	CO5	TLO 5.1 TLO 5.2	5.1 Free hand sketches of machine elements: Thread profiles, nuts, bolts, studs, set screws, washers, Locking arrangements.	03				
				03				

X. ASSESSMENT METHODOLOGIES/TOOLS

- **Formative assessment (Assessment for Learning)**
  - Models of objects for orthographic
  - Analytic rubrics
  - Making sketches
  - Term Work
- **Summative Assessment (Assessment of Learning)**
  - Submission of completed sheets
  - Tutorial Performance

(Name & Signature of Staff) **(Name & Signature of HOD)**