

# SYLLABUS

**1<sup>st</sup> Year**

**Common for all Engineering trades under CTS  
(Not applicable for Draughtsman trade Group)**

**Duration: One Year**

S.no.	Syllabus	Time in Hrs
<b>I</b>	<b>Engineering Drawing – Introduction</b> Introduction to Engineering Drawing and Drawing Instruments – 1 Conventions 2 Viewing of engineering drawing sheets. 3 Method of Folding of printed Drawing sheet as per BIS SP: 46-2003	<b>1</b>
<b>II</b>	<b>Drawing Instrument</b> 1 Drawing board, T-square, Drafter (Drafting M/c), Set squares, Protector, Drawing Instrument Box (Compass, Dividers, Scale, Diagonal Scales etc.), pencils of different grades, Drawing pins/ Clips.	<b>1</b>
<b>III</b>	<b>Free hand drawing of –</b> 1 Lines, polygons, ellipse etc. 2 Geometrical figures and blocks with dimension 3 Transferring measurement from the given object to the free hand sketches. 4 Solid objects - Cube, Cuboids, Cone, Prism, Pyramid, Frustum of Cone with dimensions. 5 Free hand drawing of hand tools and measuring tools, simple fasteners (nuts, bolts, rivets etc.) trade related sketches	<b>10</b>
<b>IV</b>	<b>Lines</b> 1 Definition, types and applications in drawing as per BIS: 46-2003 2 Classification of lines (Hidden, centre, construction, extension, Dimension, Section) 3 Drawing lines of given length (Straight, curved) 4 Drawing of parallel lines, perpendicular line 5 Methods of Division of line segment	<b>2</b>
<b>V</b>	<b>Drawing of Geometrical figures:</b> Definition, nomenclature and practice of – 1 Angle: Measurement and its types, method of bisecting. 2 Triangle: different types 3 Rectangle, Square, Rhombus, Parallelogram. 4 Circle and its elements 5 Different polygon and their values of included angles. Inscribed and circumscribed polygons	<b>8</b>

S.no.	Syllabus	Time in Hrs
<b>VI</b>	<b>Lettering &amp; Numbering</b> 1 Single Stroke, Double Stroke, Inclined.	<b>6</b>
<b>VII</b>	<b>Dimensioning and its Practice</b> 1 Definition, types and methods of dimensioning (functional, non-functional and auxiliary) 2 Position of dimensioning (Unidirectional, Aligned) 3 Types of arrowhead 4 Leader line with text 5 Symbols preceding the value of dimension and dimensional tolerance.	<b>4</b>
<b>VIII</b>	<b>Sizes and layout of drawing sheets</b> 1 Selection of sizes 2 Title Block, its position and content 3 Item Reference on Drawing Sheet (Item list)	<b>2</b>
<b>IX</b>	<b>Method of presentation of Engineering Drawing</b> 1 Pictorial View 2 Orthographic View 3 Isometric View	<b>2</b>
<b>X</b>	<b>Symbolic representation – different symbols used in the trades</b> 1 Fastener (Rivets, Bolts and Nuts) 2 Bars and profile sections 3 Weld, Brazed and soldered joints 4 Electrical and electronics element 5 Piping joints and fitting	<b>6</b>
<b>XI</b>	<b>Projections</b> 1 Concept of axes plane and quadrant 2 Orthographic projections 3 Method of first angle and third angle projections (definition and difference) 4 Symbol of 1 <sup>st</sup> angle and 3 <sup>rd</sup> angle projection.	<b>15</b>
<b>XII</b>	<b>Orthographic projection from isometric projection</b>	<b>15</b>
<b>XIII</b>	<b>Reading of fabrication drawing</b>	<b>8</b>
	<b>Total</b>	<b>80</b>