

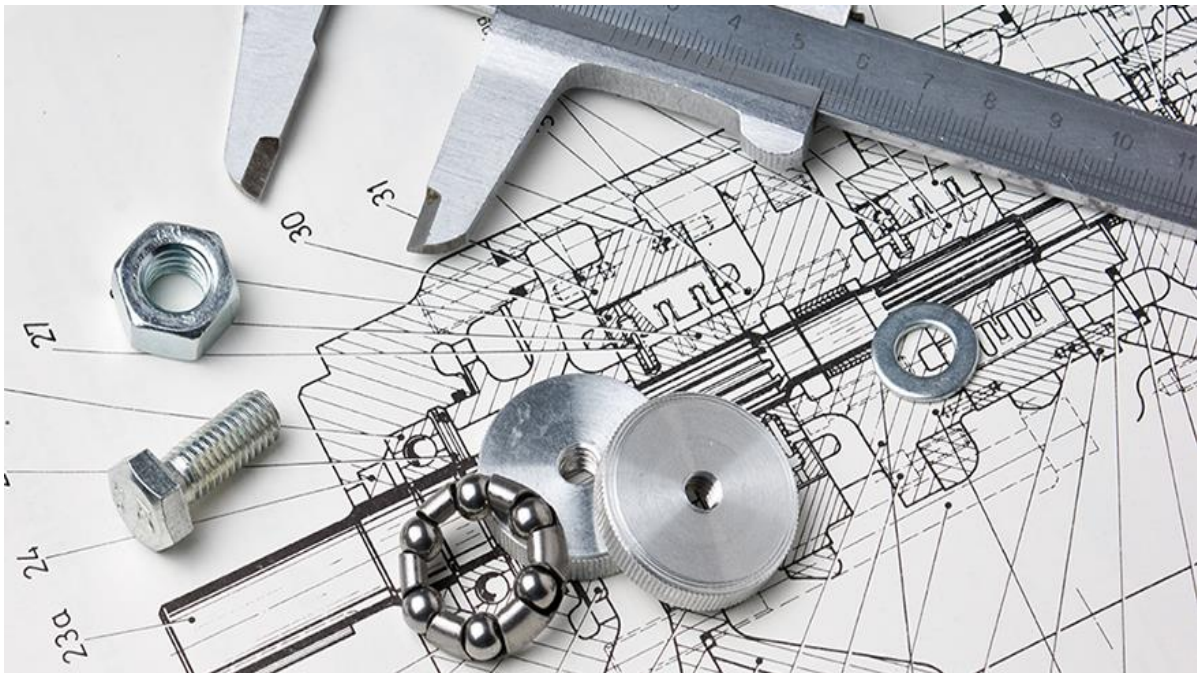


GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP
DIRECTORATE GENERAL OF TRAINING

COMPETENCY BASED CURRICULUM

ENGINEERING DRAWING

FOR CRAFTSMEN TRAINING SCHEME (CTS)



Designed in 2019

Developed By

CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE

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ENGINEERING DRAWING - I

(Common for CTS Engineering trades during 1st year)

(Not applicable for Draughtsman trade Group)

Sl. No.	Topic	Time in hrs.
1.	Engineering Drawing – Introduction Introduction to Engineering Drawing and Drawing Instruments – <ul style="list-style-type: none"> • Conventions • Viewing of engineering drawing sheets. • Method of Folding of printed Drawing sheet as per BIS SP: 46-2003 	1
2.	Drawing Instrument <ul style="list-style-type: none"> • 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. 	1
3.	Free hand drawing of – <ul style="list-style-type: none"> • Lines, polygons, ellipse etc. • Geometrical figures and blocks with dimension • Transferring measurement from the given object to the free hand sketches. • Solid objects – Cube, Cuboids, Cone, Prism, Pyramid, Frustum of Cone with dimensions. • Free hand drawing of hand tools and measuring tools, simple fasteners (nuts, bolts, rivets etc.) trade related sketches 	10
4.	Lines <ul style="list-style-type: none"> • Definition, types and applications in drawing as per BIS: 46-2003 • Classification of lines (Hidden, centre, construction, extension, Dimension, Section) • Drawing lines of given length (Straight, curved) • Drawing of parallel lines, perpendicular line • Methods of Division of line segment 	2
5.	Drawing of Geometrical figures: Definition, nomenclature and practice of – <ul style="list-style-type: none"> • Angle: Measurement and its types, method of bisecting. • Triangle: different types • Rectangle, Square, Rhombus, Parallelogram. • Circle and its elements • Different polygon and their values of included angles. Inscribed and circumscribed polygons 	8
6.	Lettering & Numbering – <ul style="list-style-type: none"> • Single Stroke, Double Stroke, Inclined. 	6
7.	Dimensioning and its Practice <ul style="list-style-type: none"> • Definition, types and methods of dimensioning (functional, non-functional and auxiliary) • Position of dimensioning (Unidirectional, Aligned) 	4

	<ul style="list-style-type: none"> • Types of arrowhead • Leader line with text • Symbols preceding the value of dimension and dimensional tolerance. 	
8.	<p>Sizes and layout of drawing sheets</p> <ul style="list-style-type: none"> • Selection of sizes • Title Block, its position and content • Item Reference on Drawing Sheet (Item list) 	2
9.	<p>Method of presentation of Engg. Drawing</p> <ul style="list-style-type: none"> • Pictorial View • Orthographic View • Isometric View 	2
10.	<p>Symbolic representation – different symbols used in the trades</p> <ul style="list-style-type: none"> • Fastener (Rivets, Bolts and Nuts) • Bars and profile sections • Weld, Brazed and soldered joints • Electrical and electronics element • Piping joints and fitting 	6
11.	<p>Projections</p> <ul style="list-style-type: none"> • Concept of axes plane and quadrant • Orthographic projections • Method of first angle and third angle projections (definition and difference) • Symbol of 1st angle and 3rd angle projection in 3rd angle. 	15
12.	Orthographic projection from isometric projection	15
13.	Reading of fabrication drawing	8
Total		80