

**SYLLABUS OF SEMESTER SYSTEM
FOR THE TRADE OF**

**ARCHITECTURAL
DRAUGHTSMANSHIP**

Under

**Craftsmen Training Scheme (CTS)
(One year/Two Semesters)**

**Redesigned in
2014**

**By
Government of India
Ministry of Labour & Employment (DGE&T)**

FORMAT FOR CTS

- 1. Cover Page**
- 2. Title**
- 3. General Information**
- 4. Week wise contents of TT and TP (In tabular form)**
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- 7. Tools and Equipments list - broad specification**
- 8. List of the consumable**
- 9. Trade testing and certification**
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GENERAL INFORMATION

- 1. Name of the trade** : **ARCHITECTURAL DRAUGHTSMANSHIP
(Engineering Trade)**
- 2. N.C.O. Code No.** : **3118.10, 3118.20**
- 3. Duration of training** : **Twelve months (Two semesters of six
Months each)**
- 4. Entry Qualification** : **Passed class X under 10+2 system with
minimum of 40% independently in Science
and Mathematics**
- 5. Unit Strength** : **20 trainees/unit (Two Units-each unit of 20
trainees)**
- 6. Space Norms** : a) **Class room: 40 sq.mt**
b) **Drawing hall: 100 sq.mt**
c) **Computer lab: 80 sq.mt**
- 7. Power Norms** : a) **Class room: 1kw (6000 lumen)**
b) **Drawing hall: 4 kw (25000 lumen)**
c) **Computer lab:**
- 8. Job role** : **At the end of course the trainee will be able to:**
- **Work in architectural firm as draftsman**
 - **Work in interior office as interior designer**
 - **Work as site supervisor**
 - **Work in showroom dealing in architectural materials**
 - **Work in offices dealing in civil work like making of structure drawings.**
 - **Work in manufacturing units of architectural materials like tiles, modular kitchen, and readymade doors etc.**
- 9. Instructor's Qualification** : **Training officer/Instuctor – 2 nos**
Lab and studio attendant – 1 no

**10. Instructor's/Trainer's
Qualification**

**: Degree in Architecture from recognized
Engg./Architecture College/University with
1 years post qualification experience
respectively.**

Or

**Diploma in Architecture from recognized
board of technical education with 3 years
post qualification experience in relevant
field**

Or

**NTC/NAC in the relevant trade with 3
years post qualification experience in the
relevant field.**

**(The degree/diploma holder instructors
must be provided with orientation
programme having duration of six months
in Training Methodology within two year of
their appointment.)**

Week wise content index of first semester

S.No	Week No.	Contents Heading Practical/Theory		Duration
1.	01 - 03	Brick masonry/GP	Brick masonry/GP	2 weeks
2.	04 - 05	Stone masonry	Stone masonry	2 weeks
3.	06 - 07	Foundation	Foundation	2 weeks
4.	08	Color wheel/ Color schemes	Concrete masonry	1 weeks
5.	09 - 10	Joints(wood)	Carpentry Joints	2 weeks
6.	11	Damp proof course	Damp proof course	1 weeks
7.	12	Lintels	Lintels	1 weeks
8.	13 - 14	Arches	Arches	2 weeks
9.	15 - 17	Doors	HOA – elements and features /Indian architecture/ Egyptian Architecture	3 weeks
10.	18 - 21	Windows	Greek Architecture/ Roman Architecture	4weeks
11.	22 - 23	Project work / site visit	-----	2 weeks
12.	24	Revision	-----	1 weeks
13.	25-26	Exam	-----	2 weeks

Week wise content index of second semester

S.No	Week No.	Contents Heading Practical/Theory		Duration
1.	01	Introduction to design	Basic elements of design	1 weeks
2.	02 - 05	Preliminary drg. in CAD	Aesthetic components of design	4 weeks
3.	06 - 09	Stairs	Factors considered in Architectural design/ Floors	4weeks
4.	10 - 11	Floors and flooring	Flooring	2 weeks
5.	12 - 13	Roof and roof coverings	Roof and roof coverings	2 weeks
6.	14 - 15	Basement construction details	Anti termite treatment	2 weeks
7.	16 - 20	Final design	Fire protection/ Rain water harvesting	5weeks
8.	21 - 23	Project work / site visit	-----	2 weeks
9.	24	Revision	-----	1 weeks
10.	25-26	Exam	-----	2 weeks

Syllabus for the trade of Architectural Draughtsmanship under CTS

First Semester (Semester code no. – ARCH 01)

Duration: six months

Syllabus for TP 01 and TT 01

Week no	Trade Practical 01 (Building construction + Graphic presentation)	Trade Theory 01 (Building construction + History of architecture)
01	<ul style="list-style-type: none"> ● Importance of safety and general precautions observed in the institute and in the section ● Importance of the trade in the development of the country's infrastructure ● Recreational, medical facilities and other extra curricular activities of the institute ● All necessary guidance to be provided to the new comers to become familiar, with the working of training institute 	<ul style="list-style-type: none"> ● Familiarization with the institute ● Importance of trade training ● Introduction to the trade and professional prospects
02 - 03	<p>Brick masonry</p> <ul style="list-style-type: none"> ● Sizes of brick and brick tiles ● English and Flemish bond- for half brick thick. and one brick thick. wall <p>GP</p> <ul style="list-style-type: none"> ● Lettering – basics, vertical and inclined, forms and proportions, types of lettering strokes, composition, fonts (Gothic, Roman etc), writing sentence 	<p>BC – Brick masonry</p> <ul style="list-style-type: none"> ● Sizes of brick and brick tiles ● Principle of brick masonry construction ● English and Flemish bond ● Opening in masonry ● Hollow brick masonry <p>GP</p> <ul style="list-style-type: none"> ● Importance of lettering, writing of letters and figures, sizes, proportion, etc. as per IS code
04 - 05	<p>Stone masonry</p> <ul style="list-style-type: none"> ● Coarsed and uncoarsed rubble masonry ● Coarsed and uncoarsed random rubble masonry ● Ashlar - chamfered masonry <p>GP</p> <ul style="list-style-type: none"> ● Sketches of landscape/ monuments with water colors, pencil colors, crayons 	<p>BC - Stone masonry</p> <ul style="list-style-type: none"> ● Technical terms ● Principles of stone masonry ● Classification of stone masonry ● Coarsed rubble, uncoarsed rubble masonry ● Coursed and uncoarsed random rubble ● Ashlar - chamfered masonry <p>GP</p> <ul style="list-style-type: none"> ● Free hand sketching
06 - 07	<p>Foundation</p> <ul style="list-style-type: none"> ● Types of foundation (pile, raft, spread, mat, column, retaining wall) 	<p>BC – Foundation</p> <ul style="list-style-type: none"> ● Definition ● Types of foundation (pile, raft, spread,

		mat, column, retaining wall) <ul style="list-style-type: none"> ● Depth of foundation ● Footing and foundation sizes minimum required
08	GP <ul style="list-style-type: none"> ●Color wheel - primary, secondary, tertiary colors ●Color schemes - monochromatic, tones and shades in any creative pattern 	Concrete masonry <ul style="list-style-type: none"> ●Openings in concrete masonry ●Reinforced concrete masonry ●Mortar for concrete masonry GP <ul style="list-style-type: none"> ●Definition of color ●Qualities of color ●Color wheel ●Properties of color
09 - 10	Joints(wood) <ul style="list-style-type: none"> ● Detail sketches of various types of carpentry joints GP <ul style="list-style-type: none"> ●Composition of pattern using different textures using different grade of pencils (H, HB, B, 2B etc) 	Carpentry Joints <ul style="list-style-type: none"> ●Technical terms ●Classification of joints (lengthening spliced or longitudinal joints, bearing joints, angle or corner joints, oblique – shouldered joints, widening or side joints) and its uses in wood work GP <ul style="list-style-type: none"> ●Methods of pencil use ●Pencil grades
11	DPC <ul style="list-style-type: none"> ●Detail at plinth level, on terrace and basement floor 	Damp proof course <ul style="list-style-type: none"> ●Sources of dampness ●Effects of dampness ●Prevention ● Damp proof treatments in building
12	Lintels <ul style="list-style-type: none"> ●Wooden lintel, stone lintel, brick lintel, steel lintel, RCC lintel, chajjas 	Lintels <ul style="list-style-type: none"> ●Purpose and types (wooden lintels, brick lintel, stone lintel, reinforced brick lintel, reinforced concrete lintel, steel lintel)
13 - 14	Arches <ul style="list-style-type: none"> ●Semicircular arch, flat arch, segmental arch, pointed arch, two centered arch, corbelled arch, brick arch, stone arch, concrete arch 	Arches <ul style="list-style-type: none"> ●Types of arches (flat arch, semi circular arch, segmental arch, relieving arch, Dutch of French arch) ●Technical terms ●Classification of arches ●Materials used for construction
15 - 16	Doors <ul style="list-style-type: none"> ●Details Paneled door, flush door, batten and ledged door Visit to any Construction site for better exposure to details	Doors <ul style="list-style-type: none"> ● Size of doors ●Door frame ●Types of doors HOA – elements and features Indian architecture <ul style="list-style-type: none"> ● Stupas and its characteristic features and typical examples ● Northern Indian style elements (Lingaraja temple, Sun temple)

		<ul style="list-style-type: none"> ● rock cut caves and its elements (badami, Ajanta and Ellora) ● South Indian temples - Syle and its elements (Mahabalipuram, Tanjavur, Madurai)
17	<ul style="list-style-type: none"> ● Glazed door, sliding door, revolving door 	Egyptian Architecture <ul style="list-style-type: none"> ● Characteristic features of the great pyramid of Cheops at Giza and great sphinx of chephren
18 - 19	Windows <ul style="list-style-type: none"> ● Casement window, louvered window, ventilator and its details 	Windows <ul style="list-style-type: none"> ● Size of window ● Classification of windows Greek Architecture <ul style="list-style-type: none"> ● Greek columns like Doric order, ionic order, Corinthian order ● Characteristic features of the temple of Parthenon at Athens, Olympia stadium at Athens
20 - 21	<ul style="list-style-type: none"> ● Glazed window, pivoted window and its details 	Roman Architecture <ul style="list-style-type: none"> ● Characteristic features of the temple of Saturn at Rome, the Pantheon at Athens, basilica of Trajan at Rome
22 - 23	Project work / site visit <ul style="list-style-type: none"> ● Project work on a single floor residence with furniture layout – plan, front elevation and section (Single line diagram to be made available) ● Site visit to any of the construction site / historical monument to observe the details 	
24	Revision	
25-26	Exam	

Syllabus for Workshop science and calculation

Week no	Workshop science and calculation (Building material ,Bye laws and maths)
01	<ul style="list-style-type: none"> ● Familiarization with the institute ● Importance of trade training ● Introduction to the trade and professional prospects
02	Mensuration: problems related to triangles, rectangles square, circle, regular polygons etc.
03	Applied trade problems – Conversion of scales (1:5, 1:10, 1:20, 1:100)
04	Conversion of Feet and inch to mts, cms, mms Hectares into acres, sqm in sqft
05 - 06	BM – Bricks <ul style="list-style-type: none"> ● Definition, classification, properties and uses of brick ● Characteristics of good brick
07 - 08	Stones <ul style="list-style-type: none"> ● Uses of stone

	<ul style="list-style-type: none"> ● Classification of rocks ● Characteristics of good building stones
09	Lime <ul style="list-style-type: none"> ● Definition, classification, properties and uses of lime
10	Surkhi <ul style="list-style-type: none"> ● Definition and uses Sand <ul style="list-style-type: none"> ● Definition, uses and classification
11	Cement <ul style="list-style-type: none"> ● Definition, composition, types, properties and uses
12	Mortar <ul style="list-style-type: none"> ● Definition, function, types, uses and proportion of mortar
13	Concrete <ul style="list-style-type: none"> ● Definition, proportions, properties and uses, Grades(M20, M15, M35 etc)
14	Timber <ul style="list-style-type: none"> ● Definition ● Characteristics of good timber ● Hard wood and soft wood ● Defects in timber ● Characteristics of common Indian timber (Sal, deodar, teak, chir, kail, neem)
15	Paint and polishing <ul style="list-style-type: none"> ● Paint – types, characteristics and procedure ● Polishing – types, characteristics and procedure (lacquer, melamine, deco, French polish, poly urethane polish)
16	Glass Introduction, types of glass and uses
17	Metal and steel – Types, properties and uses Aluminum – Properties and uses
18	Bye laws <ul style="list-style-type: none"> ● General terminology used in buildings (balcony, building line, chajjas, covered area, vertical and horizontal exit, FAR, fire tower, habitable room, loft, headroom, mezzanine floor, plinth, porch, set back lines)
19	FAR and ground coverage as per area of the plot Minimum set backs as per plot size
20	Minimum area requirement of parts of building – Plinth, habitable rooms, kitchen, bath rooms, WC, mezzanine, store, garage, basement, lighting and ventilation in rooms, ventilating shaft, height of floor, lift and exit requirements
21	Calculation of area Covered area, built up area, FAR, Plot area, ground coverage
22 - 23	-----
24	Revision
25-26	Exam

Syllabus for Engineering Drawing

Week No.	Engineering Drawing
01	<ul style="list-style-type: none">● Familiarization with engineering, drawing, tools and equipments● Free hand drawing – free hand lettering
02 - 03	Simple geometrical construction with drawing instruments – plane geometry <ul style="list-style-type: none">● Divide a line in no of parts● Bisect and trisect an arc● Construction of ellipse in different methods● Construction of polygons (pentagon, hexagon, heptagon, octagon etc)
04	<ul style="list-style-type: none">● Introduction to projections
05 - 07	<ul style="list-style-type: none">● Projection of solids in simple positions (pyramid, prism, cylinder, cone, sphere, cube)
08 - 10	<ul style="list-style-type: none">● Projection of solids in Inclined positions (pyramid, prism, cylinder, cone, sphere, cube)
11 - 12	<ul style="list-style-type: none">● Isometric view of different types of geometrical solids and objects
13 - 16	<ul style="list-style-type: none">● Anthropometrics – furniture design, its standard sizes and area required around for movement and height (living, bed room, kitchen, dining, toilet)
17 - 19	One point perspective view of simple furniture(TV unit, table, sofa, book rack, chair etc)
20 - 21	Two point perspective of simple objects
22 - 23	-----
24	Revision
25-26	Exam

Syllabus for the trade of Architectural Draughtsmanship under CTS

First Semester (Semester code no. –ARCH 02)

Duration: six months

Syllabus for TP 02 and TT 02

Week no	Trade Practical TP02 in CAD (Building construction + Architectural design)	Trade Theory TT02 (Building construction + Architectural design)
01	<ul style="list-style-type: none"> ● Introduction to design ● Design topic – Residential ● Concept and visualization of design. Students should be able to understand the process of designing and the design project will go through out the semester ● Case study of similar project to be done 	<p>Basic elements of design</p> <ul style="list-style-type: none"> ● Understanding the basic elements of design like Point, line, linear elements, plane, volume
02 - 05	<ul style="list-style-type: none"> ● Preliminary drawing will be prepared by the students in AUTOCAD based on a single project of G+1 residential building after analyzing the requirement and area analysis ● Initial sketches / preliminary drawings in CAD <ol style="list-style-type: none"> a) Sketches of the plan b) Surrounding area and site landscaping c) Minimum front and 1 side elevation d) Section through toilet and stairs 	<p>Aesthetic components of design</p> <ul style="list-style-type: none"> ● Texture, color, direction, tone, proportion, scale, balance, symmetry
06 - 07	<p>Stairs</p> <ul style="list-style-type: none"> ● Plan and elevation of different types of stairs 	<p>Stairs</p> <ul style="list-style-type: none"> ● Technical terms used ● Materials used for different types of stairs ● Planning and design of a stair ● Details of construction of various stairs <p>Factors considered in Architectural design</p> <ul style="list-style-type: none"> ● Requirements ● Circulation (elements of circulation, path configuration, form of circulation spaces)
08 - 09	<ul style="list-style-type: none"> ● Construction details of dog legged stairs, baluster details, railing, nosing, tread and riser calculation 	<p>Floors</p> <ul style="list-style-type: none"> ● Components of floor ● Suspended floor ● Floor coverings ● Ground and basement floor

10 - 12	Floors and flooring <ul style="list-style-type: none"> ● Sub floor and floor finish details, types of brick floors, timber floors ● Construction details of mosaic, terrazzo, PVC, rubber, brick, granite or marble, wooden flooring 	Flooring <ul style="list-style-type: none"> ● Types and its laying process (terrazzo, concrete, granite, marble, tiles, rubber, wooden)
13 - 14	Roof and roof coverings <ul style="list-style-type: none"> ● Pitched roof details ● Flat roof details ● Lean to roof details 	Roof and roof coverings <ul style="list-style-type: none"> ● Technical terms ● Pitched roof , flat roof, lean to roof ● Materials used for roofing like asbestos sheet, terracotta tiles, AC sheets, corrugated sheets etc
15 - 16	Basement construction detail <ul style="list-style-type: none"> ● Basement wall construction and treatment to prevent seepage. ● Basement floor detail ● Basement roof detail 	Anti termite treatment <ul style="list-style-type: none"> ● Types of anti termite treatment ● Treatment to basement in ordinary soil ● Treatment to basement in damp soil
17 - 21	Final design <ul style="list-style-type: none"> ● All floor plans rendered with furniture layout ● Front elevation and one side elevation rendered ● Section through toilet/ staircase rendered ● Site plan with all landscape elements Note: Subject of drawing, scale, date, job no, address, ph no, north, sheet no. to be mentioned in all the sheets. Drawing produced should be well readable and self explanatory	Fire protection <ul style="list-style-type: none"> ● Definitions ● Fire resisting properties of materials ● Fire resistant construction ● Fire fighting equipments and detection(alarm, sprinklers systems etc) ● Means of escape, staircase, lifts etc Rain water harvesting <ul style="list-style-type: none"> ● Purpose, advantages, system set up and various process ● Today's need for rain water harvesting and its implications
22 - 23	Project work / On the job training <ul style="list-style-type: none"> ● On the job training in any of the Architect's office or project work 	
24	Revision	
25-26	Exam	

Syllabus for Workshop Science and Calculation

Week no	Workshop science and calculation (Estimation and building services)
01 - 02	<ul style="list-style-type: none"> ● Introduction to Estimation ● Different methods of calculating quantities – centre line, In to in – out to out method
03 - 04	<ul style="list-style-type: none"> ● Types of estimate ● Performa's used in estimate ● Abstract cost ● Material statement ● Unit of measurement
05 - 07	<p>Preparation of Detailed estimate</p> <ul style="list-style-type: none"> ● Excavation ● Footings ● Super structure
08 - 10	<ul style="list-style-type: none"> ● Concrete works (lintel, beam, column, slab) ● Roofing – flat roof ● Flooring
11 - 12	<ul style="list-style-type: none"> ● Doors and windows ● Plastering and painting
13 - 14	<p>Rate analysis and Specifications</p> <ul style="list-style-type: none"> ● Specifications – importance, objectives ● Rate analysis of items (concrete, brick work, wood work, plastering, flooring) including rates of Labour and materials, sundries, contractors profit etc as per standards
15 - 16	<p>Sanitation and drainage</p> <ul style="list-style-type: none"> ● System of sewerage – one pipe system, two pipe system, single stack system, anti sypnonage pipe ● Types of traps ● Sanitary fitting – wash basin, urinals, sinks, WCs etc
17 - 18	<ul style="list-style-type: none"> ● Septic tank and storm water drainage ● Sewage treatment – primary treatment, secondary treatment
19 - 21	<p>Mechanical services</p> <ul style="list-style-type: none"> ● HVAC – window unit, split unit, duct able unit, chilled beam system ● Lifts and escalators ● Fire fighting services
22 - 23	-----
24	Revision
25-26	Exam

Syllabus for Engineering Drawing

Week no	Engineering Drawing in CAD
01 - 05	<ul style="list-style-type: none"> ●Engineering / working drawing will be prepared by the students in CAD based on the project mentioned above ● The Engineering /working drawing will be made on the basis of architectural design drawing ● The Engineering / working drawing will start once the design is finalized
06 - 08	Working drawing <ul style="list-style-type: none"> ●All floor plans showing all dimensions and column grids with door window schedule
09 - 10	<ul style="list-style-type: none"> ●All four Elevations with floor heights, lintel heights, sill heights and details if any
11 - 12	<ul style="list-style-type: none"> ●Section through staircase / toilet with complete details
13 - 14	<ul style="list-style-type: none"> ●Kitchen details with complete detailed plans with above and below counter, elevations with details of cupboard heights and design
15 - 16	<ul style="list-style-type: none"> ●Toilet details with complete detailed plan, all four elevations with fixture and fitting details
17 - 18	<ul style="list-style-type: none"> ●All floor Electrical plan with complete wiring and all fittings and switch board connections indicated in the drawing
19 - 21	<ul style="list-style-type: none"> ●Plumbing layout details <p>Note: Subject of drawing, scale, date, job no, drawing reference, name of the architect, checked by, address, ph no, north, sheet no to be mentioned in all the sheets. Drawing to be produced should be well readable and self explanatory</p>
22 - 23	-----
24	Revision
25-26	Exam

ARCHITECTURAL DRAUGHTSMANSHIP

LIST OF TOOLS AND EQUIPEMENTS

(Note: latest configuration to be achieved while procuring all Tools & Equipments)

No. of Unit / Batch: 2 units / batch

Strength : 20 trainees/unit

Furniture for Theory/ Practical / unit

SNo.	Name of the Item	Quantity
1.	Dual Desk	**12 No.
2.	Drawing Boards measuring 1250mm x900mm fixed over adjustable stand	**20+1Sets
2.	Draughtsman stool with back (revolving type)	**24 No.
3.	Students Lockers – with 8 compartments	3 No.
4.	Wooden Chest of Drawers	4 No.
5.	Steel book case (with lockable glass shutters)	1 No.
6.	Instructor's table with glass top	2 No.
7.	Revolving Chair for Class room	2 No.
8.	Instructor's revolving with arm chair	2 No.
9.	Visitor's revolving chair	2 No.
10.	Steel Almirah	2 No.
11.	Magnetic White Board	2 Nos.
12.	Pin-up board (with or without stand)	6 No.
13.	Working table size 1250x950	2nos
14.	Tracing Table with Plain glass 1250x900	1 no
15.	Air conditioner 2.0 tons (split unit) for theory and practical room	4 nos.

**Numbers may be increased depending on on-roll trainee's strength and additional unit (if any)

Furniture for CAD Lab / batch

S No.	Name of the Item	Quantity
1.	Personal Computer with LCD monitor & DVD re-writer along with Latest compatible OS	**20 No.
2.	Notebook PC	2 No.
3.	Drafting Software like AutoCAD, or equiv.	**20 No.
4.	3D modeling software like Max, Revit etc.	**20 No.
5.	Plotter (A0 size)	1 No.
6.	Laser Jet color printer (A4 size)	1 No.
7.	Inkjet/ Laser Jet Printer (A3 size)	1 No.
8.	Color Scanner/printer with Latest Configuration	1 No.
9.	700VA or higher Offline UPS	**20 No.

10.	Computer work station (module type)	**20 Nos.
11.	Printer Table (module type)	1 No.
12.	Operator's revolving chair	22 No.
13.	Instructor 's Lab table	1 No.
14.	Instructor's revolving chair with arm	3 No.
15.	Book shelf with glass shutters	1 No.
16.	Air conditioner 2.0 tons (split type) for CAD lab	4 No.
18.	LAN connectivity	As per requirement
19.	Internet connection	1 No.
20.	Visualizer	1 No.
21.	Vacuum Cleaner	1 No.

**it may be as per requirement i.e. equal to no of trainees.

Mouse & Keyboard should be treated as Raw Material.

Audio Visual Aids / batch

Sl no.	Name of the item	Quantity
1.	LCD Projector	1 No.
2.	Interactive Board	1 No.

ARCHITECTURE DRAUGHTSMANSHIP

LIST OF CONSUMABLES

No. of Unit / Batch: 2 units / batch

Strength ss: 20 trainees/ unit

Hand Tools (to be treated as consumables)

Sl No.	Name of the Item	Quantity
1.	Adjustable set square with beveled edge – 30 cm	20 + 1 sets
2.	Compass with Long arm & pen holder	20 + 1 No.
3.	Protractor – 15 cm	20 + 1 No.
4.	Graphic Pens	As per requirement
5.	Triangular Scale 30 cm (feet/inch,metric)	20 + 1 No.
6.	Clutch pencil – 0.5mm , 0.2 mm , 2mm.	20 + 1 No.
7.	Parallel Bar / T scale – 1250 mm long	20 +1 No.
8.	Plastic French curve with ink edge – set of 12	3sets
9.	Flexi curve- 80cm	4No.
10.	Furniture template 1:50, 1:100,1:200	20+1Nos.
11.	Circular and oval template	20+1Nos.
12.	Metric Tape-5M	20+1Nos.
13.	Calculator	05 nos
14.	Beam Compass with pen holder (rotring/steadler made)	02No.
13.	Pen Drive	As per requirement

Note:

1. All the hand tools mentioned under Sl.No. 1 to 7 would be issued to Trainees once during their course and to be treated as consumables.
2. The quantities of hand Tools may be increased accordingly based on the No. of Trainees on roll (including the Strength of Additional Unit, if any).
3. In addition to the list, small measuring tapes, Drawing Sheet, Tracing Paper, Butter Sheet, Color Pencils, Pencil (of various grades), Pencil Leads, Cello tape, Eraser and any other Raw Materials would be issued as per the requirement and will be considered as consumable items.
4. For faculty members Raw Materials like Pen Drive, Pocket Hard Disk, Memory Card, Re-writable CDs & DVD etc., may be provided.