ARCHITECTURAL DRAUGHTSMAN

NSQF LEVEL- 4.5

SECTOR - CONSTRUCTION

COMPETENCY BASED CURRICULUM

CRAFT INSTRUCTOR TRAINING SCHEME (CITS)

GOVERNMENT OF INDIA
Ministry of Skill Development & Entrepreneurship
Directorate General of Training
CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE
EN-81, Sector-V, Salt Lake City, Kolkata – 700091

ARCHITECTURAL DRAUGHTSMAN

(Engineering Trade)

SECTOR – CONSTRUCTION

(Revised in 2024)

Version 2.1

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Developed By
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1. COURSE OVERVIEW

The Craft Instructor Training Scheme is operational since inception of the Craftsmen Training Scheme. The first Craft Instructor Training Institute was established in 1948. Subsequently, 6 more institutes namely, Central Training Institute for Instructors (now called as National Skill Training Institute (NSTI), NSTI at Ludhiana, Kanpur, Howrah, Mumbai, Chennai and Hyderabad were established in 1960 by DGT. Since then the CITS course is successfully running in all the NSTIs across India as well as in DGT affiliated institutes viz. Institutes for Training of Trainers (IToT). This is a competency based course for instructors of one year duration. “Architectural Draughtsman” CITS trade is applicable for Instructors of “Architectural Draughtsman” CTS Trade.

The main objective of Crafts Instructor training Programme is to enable Instructors explore different aspects of the techniques in pedagogy and transferring of hands-on skills so as to develop a pool of skilled manpower for industries, also leading to their career growth & benefiting society at large. Thus promoting a holistic learning experience where trainee acquires specialized knowledge, skills & develops attitude towards learning & contributing in vocational training ecosystem.

This course also enables the instructors to develop instructional skills for mentoring the trainees, engaging all trainees in learning process and managing effective utilization of resources. It emphasizes on the importance of collaborative learning & innovative ways of doing things. All trainees will be able to understand and interpret the course content in right perspective, so that they are engaged in & empowered by their learning experiences and above all, ensure quality delivery.

2. TRAINING SYSTEM

2.1 GENERAL

CITS courses are delivered in National Skill Training Institutes (NSTIs) & DGT affiliated institutes viz., Institutes for Training of Trainers (IToT). For detailed guidelines regarding admission on CITS, instructions issued by DGT from time to time are to be observed. Further complete admission details are made available on NIMI web portal http://www.nimionlineadmission.in. The course is of one-year duration. It consists of Trade Technology (Professional skills and Professional knowledge), Training Methodology and Engineering Technology/ Soft skills. After successful completion of the training programme, the trainees appear in All India Trade Test for Craft Instructor. The successful trainee is awarded NCIC certificate by DGT.

2.2 COURSE STRUCTURE

Table below depicts the distribution of training hours across various course elements during a period of one year:

S No.	Course Element	Notional Training Hours
1.	**Trade Technology**	
	Professional Skill (Trade Practical)	480
	Professional Knowledge (Trade Theory)	270
2.	**Training Methodology**	
	TM Practical	270
	TM Theory	180
	Total	**1200**

Every year 150 hours of mandatory OJT (On the Job Training) at nearby industry, wherever not available then group project is mandatory.

3	On the Job Training (OJT)/ Group Project	150
4	Optional Courses	240

Trainees can also opt for optional courses of 240 hours duration.

2.3 PROGRESSION PATHWAYS

- Can join as an Instructor in a vocational training Institute/ technical Institute.
- Can join as a supervisor in Industries.

2.4 ASSESSMENT & CERTIFICATION

The CITS trainee will be assessed for his/her Instructional skills, knowledge and attitude towards learning throughout the course span and also at the end of the training program.

a) The Continuous Assessment (Internal) during the period of training will be done by **Formative Assessment Method** to test competency of instructor with respect to assessment criteria set against each learning outcomes. The training institute has to maintain an individual trainee portfolio in line with assessment guidelines. The marks of internal assessment will be as per the formative assessment template provided on www.bharatskills.gov.in

b) The **Final Assessment** will be in the form of **Summative Assessment Method**. The All India Trade Test for awarding National Craft Instructor Certificate will be conducted by DGT at the end of the year as per the guidelines of DGT. The learning outcome and assessment criteria will be the basis for setting question papers for final assessment**.** The external examiner during final examination will also check the individual trainee's profile as detailed in assessment guideline before giving marks for practical examination.

2.4.1 PASS CRITERIA

Allotment of Marks among the subjects for Examination:

The minimum pass percent for Trade Practical, TM practical Examinations and Formative assessment is 60% & for all other subjects is 40%.There will be no Grace marks.

2.4.2 ASSESSMENT GUIDELINE

Appropriate arrangements should be made to ensure that there will be no artificial barriers to assessment. The nature of special needs should be taken into account while undertaking the assessment. While assessing, the major factors to be considered are approaches to generate solutions to specific problems by involving standard/non-standard practices.

Due consideration should also be given while assessing for teamwork, avoidance/reduction of scrap/wastage and disposal of scrap/waste as per procedure, behavioral attitude, sensitivity to the environment and regularity in training. The sensitivity towards OSHE and self-learning attitude are to be considered while assessing competency.

Assessment will be evidence based comprising of the following:

- Demonstration of Instructional Skills (Lesson Plan, Demonstration Plan)
- Record book/daily diary
- Assessment Sheet
- Progress chart
- Video Recording
- Attendance and punctuality
- Viva-voce
- Practical work done/Models
- Assignments
- Project work

Evidences and records of internal (Formative) assessments are to be preserved until forthcoming yearly examination for audit and verification by examining body. The following marking pattern to be adopted while assessing:

Performance Level	Evidence
(a) Weightage in the range of 60%-75% to be allotted during assessment	
For performance in this grade, the candidate should be well versed with instructional design, implement learning programme and assess learners which demonstrates attainment of an **acceptable standard** of crafts instructorship with **occasional guidance** and engage students by demonstrating good attributes of a trainer.	• Demonstration of **fairly good** skill to establish a rapport with audience, presentation in orderly manner and establish as an expert in the field. • Average engagement of students for learning and achievement of goals while undertaking the training on specific topic. • A fairly good level of competency in expressing each concept in terms the student can relate, draw analogy and summarize the entire lesson. • Occasional support in imparting effective training.
(b) Weightage in the range of 75%-90% to be allotted during assessment	
For performance in this grade, the candidate should be well versed with instructional design, implement learning programme and assess learners which demonstrates attainment of a **reasonable standard** of crafts instructorship with **little guidance** and engage students by demonstrating good attributes of a trainer.	• Demonstration of **good** skill to establish a rapport with audience, presentation in orderly manner and establish as an expert in the field. • Above average in engagement of students for learning and achievement of goals while undertaking the training on specific topic. • A good level of competency in expressing each concept in terms the student can relate, draw analogy and summarize the entire lesson. • Little support in imparting effective training.
(c) Weightage in the range of more than 90% to be allotted during assessment	
For performance in this grade, the candidate should be well versed with instructional design, implement learning programme and assess learners which demonstrates attainment of a **high standard** of crafts instructorship with **minimal or no support** and engage students by demonstrating good attributes of a trainer.	• Demonstration of **high** skill level to establish a rapport with audience, presentation in orderly manner and establish as an expert in the field. • Good engagement of students for learning and achievement of goals while undertaking the training on specific topic. • A high level of competency in expressing each concept in terms the student can relate, draw analogy and summarize the entire lesson. • Minimal or no support in imparting effective training.

3. GENERAL INFORMATION

Name of the Trade	**Architectural Draughtsman -CITS**
Trade code	DGT/4037
Reference NCO 2015	3118.0100, 2356.0100
NOS Covered	CON/N9416, CON/N9433,CON/N9445, CON/N9446, CON/N9447, CON/N9448, CON/N9449, CON/N9450, CON/N9451, CON/N9452, ASC/N9411
NSQF Level	Level-4.5
Duration of Craft Instructor Training	One Year
Unit Strength (No. of Student)	25
Entry Qualification	Degree in Architecture from AICTE/ UGC recognized Engineering College/ University. OR 03 years Diploma in Architecture after class 10th from AICTE/ recognized board of technical education. OR Ex-serviceman from Indian Armed forces with 15 years of service in related field as per equivalency through DGR. OR 10th Class with 02-year NTC/NAC passed in the trade of "Architectural Draughtsman".
Minimum Age	16 years as on first day of academic session.
Space Norms	100 Sq.m
Power Norms	4.5KW
Instructors Qualification for	
1. ARCHITECTURAL DRAUGHTSMAN-CITS Trade	B.Voc/Degree in Architecture from AICTE/UGC recognized University with Two years' experience in relevant field. OR 03 years Diploma in Architecture from AICTE/ recognized Board/ University with five years' experience in relevant field. OR Ex-serviceman from Indian Armed forces with 15 years of service in related filed as per equivalency through DGR. Candidate should have undergone methods of instruction course or minimum 02 years of experience in technical training institute of Indian armed forces. OR NTC/ NAC passed in Architectural Draughtsman trade with seven years' experience in relevant field. **<u>Essential Qualification:</u>** National Craft Instructor Certificate (NCIC) in Architectural Draughtsman trade, in any of the variants under DGT.
2. Workshop	B.Voc/Degree in any Engineering discipline from AICTE/ UGC recognized

Calculation & Workshop Science	Engineering College/ university with two years' experience in relevant field. **OR** 03 years Diploma in any Engineering discipline AICTE /recognized board of technical education or relevant Advanced Diploma (Vocational) from DGT with five years' experience in relevant field. **OR** NTC/ NAC in any Engineering trade with seven years' experience in relevant field. **Essential Qualification:** National Craft Instructor Certificate (NCIC) in relevant trade OR NCIC in RoDA or any of its variants under DGT
3. Training Methodology	B.Voc/Degree in any discipline from AICTE/ UGC recognized College/ university with two years' experience in training/teaching field. OR Diploma in any discipline from recognized board / University with five years' experience in training/teaching field. OR NTC/ NAC passed in any trade with seven years 'experience in training/teaching field. **Essential Qualification:** National Craft Instructor Certificate (NCIC) in any of the variants under DGT/ B.Ed /ToT from NITTTR or equivalent.

4. JOB ROLE

Brief description of job roles:

Manual Training Teacher/Craft Instructor; instructs students in ITIs/Vocational Training Institutes in respective trades as per defined job role. Imparts theoretical instructions for the use of tools & equipment of related trades and related subjects. Demonstrate process and operations related to the trade in the workshop; supervises, assesses and evaluates students in their practical work. Ensures availability & proper functioning of equipment and tools in stores.

Draughtsman Architectural; Prepares drawings of buildings, parks, gardens, monuments etc. from sketches, designs or data for construction. Studies notes, sketches and other engineering data of buildings, parks, gardens, monuments, etc. to be constructed. Draws sketches of required construction according to directions of Architect to suit purpose and environment; alters them if directed and get them approved by him. Draws to scale drawings according to approved sketches showing plan, elevations, settings, arrangements etc. as necessary. May trace drawing and make blue prints. May prepare architectural designs, may prepare estimate schedules for material and labour. May prepare perspectives designs and render them in Colour of monochrome. May prepare model of constructions work. May work as Draughtsman Civil.

Reference NCO-2015:

a) 2356.0100 – Manual Training Teacher/Craft Instructor.
b) 3118.0100 – Draughts person, Architectural

Reference NOS:

i) CON/N9416
ii) CON/N9433
iii) CON/N9445
iv) CON/N9446
v) CON/N9447
vi) CON/N9448
vii) CON/N9449
viii) CON/N9450
ix) CON/N9451
x) CON/N9452
xi) ASC/N9411

5. LEARNING OUTCOMES

Learning outcomes are a reflection of total competencies of a trainee and assessment will be carried out as per the assessment criteria.

5.1 TRADE TECHNOLOGY

1. Explain the procedure for designing of residential and public building considering change in position of Sun and effect of climate change. (NOS: CON/N9416)
2. Develop an initial sketch of any type building, eco friendly to climate with help of CAD. (NOS: CON/N9446)
3. Demonstrate a final project drawing along with its different orthographic views. (NOS: CON/N9447)
4. Prepare a project report. (NOS: CON/N9448)
5. Execute a model of the project with the help of 3D modeling. (NOS:CON/N9449,)
6. Plan and prepare thematic drawing of energy efficient design (green building concept). (NOS: CON/N9450)
7. Evaluate the correctness and perfection of a drawing that shows detailed views of construction and expansion joints in different level. (NOS: CON/N9451,)
8. Assess the design of a false ceiling with respect to furniture, function of room. (NOS:CON/N9452)
9. Check the correctness percentage of a drawing for different types of partitions according to functional usage. (NOS: CON/N9445)
10. Analyze the design of panelling, exterior cladding. (NOS: CON/N9433)
11. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. (NOS: ASC/N9411)

6. COURSE CONTENT

SYLLABUS FOR ARCHITECTURAL DRAUGHTSMAN – CITS TRADE			
TRADE TECHNOLOGY			
Duration	**Reference Learning Outcome**	**Professional Skills (Trade Practical)**	**Professional Knowledge (Trade Theory)**
Practical 33 Hrs Theory 12 Hrs	Explain the procedure for designing of residential and public building considering change in position of Sun and effect of climate change.	**Design topics** 1. Residential - Duplex house 2. Group housing/ apartments/ row house (300-1000 sq. m. approx.) 3. Primary / play school (300-1000 sq. m. approx.) 4. Bank (300-1000 sq. m. approx.) 5. Luxury farmhouse with landscape, courtyard, swimming pool etc. (300-1000 sq. m. approx.) 6. Case study- similar building need to be studied in detail and report to be submitted.	**Orientation** • Movement of sun • Sun path diagram, change in angle with respect to change in weather
Practical 33 Hrs Theory 12 Hrs	Develop an initial sketch of any type building, eco-friendly to climate with help of CAD.	Requirements to be framed (as per client in case of live project) Concept to be worked on which the design will be based. 7. Initial sketches / preliminary drawings to be submitted in CAD	**Climatic zones of India** • Hot and dry • Warm and humid • Cold and cloudy • Composite
Practical 75 Hrs Theory 30 Hrs	Demonstrate a final project drawing along with its different orthographic views.	8. Final presentation drawings of the project (plan, elevation)	**Main consideration of design and planning** • Orientation • Effect of wind • Site topography • Comfort zone • Factors at site level • Factors at building level • Window positioning • Building material
		9. Final presentation drawings of the project	**Site planning** • identification and

		(sections and site plan) details with landscape	preparation • Factors involved in analysis of site -geology, topography • Soil - its classification, vegetation, wild life, climatic factor
Practical 20 Hrs Theory 10 Hrs	Prepare a project report.	10. A brief report of the project	**Climate and climatic control techniques** • Effect of vegetation on wind flow • effect of water body / ponds • Protection of walls from sun and rain • Walls and openings • Effect of roof treatment
Practical 35 Hrs Theory 24 Hrs	Execute a model of the project with the help of 3D modeling.	11. 3D modeling rendering on 3d software's like auto cad, Revit or 3d max(whichever available) Creating 3d model from 2d plane 12. Generation of surfaces 13. Material editor 14. Lighting 15. Rendering	**Contemporary Architecture** • Realization of character and style of modern architecture • Study of design concepts and contribution to architects Le Corbusier, louis I khan, Walter Gropius, Charles correa, F.L. wright, B.V. doshi, kanvinde, satishgujral, Laurie baker. (Questions must be restricted to above mentioned architects)
Practical 33 Hrs Theory 12 Hrs	Plan and prepare thematic drawing of energy efficient design (green building concept)	16. Create 3D model from 2D plan of any of the above project may be interior or exterior generation of surfaces, material editor, lighting and rendering	Green building and its concept of energy conservation
Practical 116 Hrs Theory 49 Hrs	Evaluate the correctness and perfection of a drawing that shows detailed views of construction and expansion joints in different level.	**Joints in structure** 17. Construction joints - wall, columns, slab details	**Joints in structure** • Need for joints in building • Construction joints - position, method of forming construction joint
		Expansion joint 18. Demonstrate various	• Expansion joints - need for expansion joint,

		types of expansion joints and its usage in building with complete details along with sliding/ isolation joints	details of expansion joints fixing in roofs and walls • Distance between 2 expansion joints and materials used in expansion and construction joints • Sliding/ isolation joints
Practical 40 Hrs Theory 20 Hrs	Assess the design of a false ceiling with respect to furniture, function of room.	**False ceiling** 19. Design and detail a false ceiling of living room, bed room, dining, lounge of a designed residence (POP ceiling)	**False ceiling (suspended)** • Requirement of false ceiling • Material uses for false ceiling to suit different purpose like acoustical/ thermal/ ordinary/ lighting • Classification of false ceiling and related theory of acoustics • Construction details of false ceiling as per materials and design
Practical 40 Hrs Theory 20 Hrs	Check the correctness percentage of a drawing for different types of partitions according to functional usage.	**Partition** 20. Design and detail partition wall using aluminum and timber sections. Fixing detail of materials used for partitions	**Partition** • Partition material used like brick, glass, timber, acoustical, gypsum, semi glazed, PVC partition and construction details for the same
Practical 57 Hrs Theory 18 Hrs	Analyze the design of paneling, exterior cladding.	**Paneling** 21. Design and detail paneling of a conference, office or auditorium Draw plan, elevation and section and fixing detail 22. External cladding	**Paneling& cladding** • Requirement of paneling • Materials used for paneling • Types of paneling • Construction details of traditional paneling and modern paneling • Stone cladding • HPL cladding • Glass curtain wall
WORKSHOP CALCULATION & SCIENCE: 75 Hrs.			
Professional Knowledge WCS- 75 Hrs.	Demonstrate basic mathematical concept and principles to perform practical operations. Understand and	**WORKSHOP CALCULATION** Concept of Fraction, Numbers, Variable, Constant, percentage, ratio proportion. Fundamental Algebraic formulae for multiplication and factorization. Algebraic equations, simple & simultaneous equations, quadratic equations and their applications.	

	explain basic science in the field of study.	Concept on progressions. Mensuration: - Concept on basic geometrical definitions, basic geometrical theorems. Determination of areas, perimeters of triangles, quadrilaterals, polygons, circle, sector etc. Areas of irregular shaped surfaces. Simpson's rule, trapezoidal rule, applications. Determination of volumes ,surface areas of cylinders, prisms, pyramids cone spheres, frustums, Volume estimate related to civil work. Calculation related to swept volume, clearance volume. Trigonometry: Ratios, tables, degree, grade and radian. Calculation of height and distance with the help of trigonometric formulae. Application of trigonometry in determining the areas of polygons and solution of triangle. Trigonometric ratios of compound, multiple and sub-multiple angle and their uses. Related problems on stress, strain, factor of safety, torsion strength of different shafts. Determination of CG, MI of different solid sections. Problems on power transmission of shaft. Calculations involving Shear Force and Bending Moments diagrams of simply supported beams, cantilevers with point load and uniformly distributed load. Calculation of machining time for different turning, shaping, drilling, milling, grinding, etc. Graphs: basic concept, importance. Plotting of graphs of simple linear equation. Related problems on ohm's law, series-parallel combination. Statistics: Frequency tables, normal distribution, measure of central tendency – Mean, Median & Mode. Concept of probability. Charts like pie chart, bar chart, line diagram, Histogram and frequency polygon. **WORKSHOP SCIENCE:** Fundamental units, Scalar & Vector quantity. Difference system of units: F.P.S., C.G.S., M.K.S & S.I. Multiplication factors such as giga, mega, kilo, milli, micro etc. interrelation, calculation and applications. Dimensioning of physical quantities (MLT). **Engineering Materials:** – Classification properties and uses of ferrous metals, non-

		ferrous metals, alloys etc. Properties and uses of non-metals such as wood, plastic, rubber, ceramics industrial adhesives. **Heat & Temperature**: - Concepts, differences, effects of heat, different units, relation, specific heat, thermal capacity, latent heat, water equivalent, mechanical equivalent of heat. Different Temperature measuring scales and their relation. Transference of heat, conduction, convection and radiation. Thermal Expansion related calculations. **Force and Motion**: - Newton's laws of motion, displacement, velocity, acceleration, retardation, rest & motion such as linear, angular. Force – units, different laws for composition and resolution of forces. Concept on centre of gravity and equilibrium of forces in plane. Concept of moment of inertia and torque. **Work, power & energy**: – Definitions, units, calculation & application. Concept of HP, IHP, BHP and FHP – related calculations with mechanical efficiency. S.I. unit of power and their relations. Vector representation of work. **Friction: -** Definitions, effects of friction, Laws of static & dynamic friction, types of friction problems on horizontal and inclined applied forces. Angle of repose. Bodies on rough inclined plane: Explanation and related problems. Introduction on corrosion, causes and prevention. Lubrication process: Types of Lubricants, etc. **Stress & Strain: -** Concepts of stress, strain, modulus of elasticity. Stress-strain curve. Hook's law, different module of elasticity like Young's modulus, modulus of rigidity, bulk modulus and their relations. Poisson's ratio. Principle of super position, stresses in varying cross-sections stress in composite bars. **Simple machines: -** Concept of Mechanical Advantage, Velocity Ratio, Efficiency and their relations. Working principles of inclined plane, lever, screw jack, wheel and axle, differential wheel and axle, worm and worm wheel, rack and pinion. Gear train. **Heat Treatment: -** Introduction, different methods of Heat Treatment and their purposes. Iron-carbon diagram and **T**ime-**T**emperature-**T**ransformation (TTT) diagram. **Electricity:-** Basic definitions like emf, current, resistance, potential

		difference, etc. Uses of electricity. Difference between ac and dc. Safety devices. Difference between conductors and semiconductors and resistors, Materials used for conductors, semiconductors and resistors. Ohm's Law. Series, parallel and series-parallel combination of resistances. Concept, definitions and units of electrical work, power and energy with related problems.

SYLLABUS FOR CORE SKILLS
1. Training Methodology (Common for all trades) (270 Hrs + 180 Hrs)

Learning outcomes, assessment criteria, syllabus and Tool List of Core Skills subjects which is common for all the CITS trades, provided separately inwww.bharatskills.gov.in./ dgt.gov.in

7. ASSESSMENT CRITERIA

LEARNING OUTCOME	ASSESSMENT CRITERIA
TRADE TECHNOLOGY (TT)	
1. Explain the procedure for designing of residential and public building considering change in position of Sun and effect of climate change. (NOS: CON/N9416)	Prepare a report with respect to Case Study of similar building
	List the factors to be considered in case of building plan
	Identify the essential parts of a primary or play school
	Plan area measurement of a land for establishment of an apartment
	Develop a free hand sketch for luxury farm house
2. Develop an initial sketch of any type building, eco-friendly to climate with help of CAD. (NOS: CON/N9446)	Draw bubble drawing/ Flow chart as per requirement of client and scheduled area, flexi design supports green building aspect
	Draw preliminary drawing of layout plan
	Draw Line diagram
	Draw Circulation activity along with furniture arrangement,
	Design Land scape drawing
3. Demonstrate a final project drawing along with its different orthographic views. (NOS: CON/N9447)	Draw final presentation drawing shows the detail along with comfort zone, factors at site level i.e., topography, geological conditions.
	Develop Plan (window positioning, orientation).
	Draw elevation with rendering.
4. Prepare a project report. (NOS: CON/N9448)	Prepare a official format of project report
	List the main features of a project report
	Put the data s in relevant place on it.
5. Execute a model of the project with the help of 3D modelling. (NOS: CON/N9449)	Sketch the 3d conceptual drawings as necessary to project
	Draw Lounge detail (Entrance)
	Draw Room interior in 3D
	Draw3D modelling of exterior with material rendering, lighting.
6. Plan and prepare thematic drawing of energy efficient design (green building concept) (NOS: CON/N9450)	Sketch thematic project with energy efficiency (Any topic choice).
	Draw plan and section.
7. Evaluate the correctness and perfection of a drawing that shows detailed views of construction and expansion joints in different level. (NOS:CON/N9451,	Draw construction joints at Brickwall.
	Draw construction joints at Column RCC.
	Draw construction joints at Slab & Bean.
	Plan detail at roof level.
	Draw Sliding joints/ isolating joint.
	Draw expansion joints in building at levels (Brick/ RCC framed

MEP/N9410)	structure) at Chajja, compound wall.
8. Assess the design of a false ceiling with respect to furniture, function of room. (NOS: CON/N9452)	Design and draw false ceiling with details at Living room.
	Design and draw false ceiling with details at Bed room.
	Design and draw false ceiling with details at Lounge (Entrance/ Reception).
	Draw Acoustical/ Thermal/ Air condition/ lighting details in enlarged scale.
9. Check the correctness percentage of a drawing for different types of partitions according to functional usage. (NOS: CON/N9445)	Draw different types of partitions of different materials.
	Draw brick partition.
	Draw concrete partition.
	Terracotta clay blocks.
	Draw & design glass partition.
	Draw block partition.
	Draw Gypsum partition (Acoustical).
	Draw PVC partition (moulded & fabricated sizes).
	Draw Timber partition.
	Design aluminium partition.
10. Analyze the design of panelling, exterior cladding. (NOS: CON/N9433)	Draw panelling of different materials.
	Draw Wooden panelling (Plan, elevation, section and fixing details) Tradition/ ornamental panelling.
	Draw Batten panelling.
	Design & Draw gypsum panelling at auditorium.
	Draw composite paneling at conference hall.
	Draw details of External cladding/ sustainable stone cladding / HPL board.
	Draw Glass – Curtain wall.
11. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. (NOS:ASC/N9411)	Solve different mathematical problems
	Explain concept of basic science related to the field of study

8. INFRASTRUCTURE

LIST OF TOOLS AND EQUIPMENT -ARCHITECTURAL DRAUGHTSMAN (CITS)			
For Batch Of 25 Candidates			
S No.	**Name of the Tool &Equipment**	**Specification**	**Quantity**
A. Hand Tools			
1.	Adjustable set square with beveled edge	30 cm	26 sets
2.	Parallel Bar / T scale	1250 mm long	26 Nos.
3.	Compass with Long arm & pen holder		26 Nos.
4.	Protractor	15 cm	26 Nos.
5.	Graphic Pens		As per requirement
6.	Triangular Scale	30 cm	26 Nos.
7.	Clutch pencil	0.5mm, 0.2 mm, 2mm.	26 Nos.
8.	Pen Drive		As per requirement
B. Tools, Instrument & General Shop Outfit			
9.	Dual Desk		15 Nos.
10.	Draughtsman stool with back (revolving type)		26 Nos.
11.	Students Lockers - with 8 compartments		3 Nos.
12.	Chest of Drawers		4 Nos.
13.	Steel book case (with lockable glass shutters)		1 No.
14.	Theory room / Studio table		1 No.
15.	Instructor's table		1 No.
16.	Revolving Chair for Class room		2 Nos.
17.	Instructor's revolving with arm chair		2 Nos.
18.	Visitor's revolving chair		2 Nos.
19.	Steel Almirah		2 Nos.
20.	Magnetic White Board		2 Nos.
21.	Pin-up board (with or without stand)		6 Nos.
D. FURNITURE			
22.	Computer work station (module type)	CPU: 32/64 Bit i3/i5/i7 or latest processor, Speed: 3 GHz or Higher. RAM:-4 GB DDR-III or Higher, Wi-Fi Enabled. Network Card: Integrated Gigabit Ethernet, with USB Mouse, USB Keyboard and Monitor (Min. 17 Inch. Licensed Operating System and Antivirus compatible with trade related software.	26 Nos.
23.	Printer Table (module type)		1 No.
24.	Operator's revolving chair		27 Nos.
25.	Instructor 's Lab table		2 Nos.

26.	Instructor's revolving chair with arm		2 Nos.
27.	Book shelf with glass shutters		1 No.
28.	Air conditioner 1.5 / 2.0 tons (preferably split type) for CAD lab		As required
29.	Air conditioner 1.5 / 2.0 tons (preferably split type) for theory class room/Practical room		As required.
30.	LAN connectivity		As per requirement
31.	Internet connection		1 No.
32.	Visualizer		1 No.
33.	Vacuum Cleaner		1 No.
34.	LCD Projector		1 No.
35.	Interactive Board		1 No.


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