



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

COMPETENCY BASED CURRICULUM

ARCHITECTURAL DRAUGHTSMAN

(Duration: Two Years)

CRAFTSMEN TRAINING SCHEME (CTS)
NSQF LEVEL - 5



SECTOR – CONSTRUCTION

ARCHITECTURAL DRAUGHTSMAN

(Engineering Trade)



CRAFTSMEN TRAINING SCHEME (CTS)

Skill India
NSQF LEVEL - 5

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Developed By

Ministry of Skill Development and Entrepreneurship
Directorate General of Training
CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE
EN-81, Sector-V, Salt Lake City,
Kolkata – 700 091

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List of Expert members participated for finalizing the course curriculum of Architectural Draughtsman trade held on 10th January' 2018 at CSTARI, Kolkata.

S No.	Name & Designation Sh/Mr./Ms.	Organization	Remarks
1.	B.V.S. Sessa Chari, Director	CSTARI, Kolkata	Chairman
2.	Avijit Banerjee, DGM	Shapoorji Pallonji & co. Pvt. Ltd., Kolkata	Member
3.	Sutanu Bhattacharya, Director	SBA spectra Consultant Pvt. Ltd.	Member
4.	Nabarun Biswas, Architect Director	AB Consultants (P) Ltd.	Member
5.	Sikha Paul, Architect	ABODE Consultant	Member
6.	Raja Dey, Jt. Director (Arch)	HQ Chief Engineer, Ministry of Defrnce, MES, Shillong-711103	Member
7.	D. Brahmeswari, TO	RVTI, Bangalore	Member
8.	Arpana Singh, TO	NVTI, Noida	Member
9.	Polly Biswas, TO	RVTI, Indore	Member
10.	Suriya Kumari K. ,TO	RVTI, Kolkata	Member
11.	Soma Das (Talukdar), VI	RVTI, Kolkata	Member
12.	Himanish Bhattacharya, VI	RVTI, Kolkata	Member
13.	N. Nath, ADT	CSTARI, Kolkata	Member
14.	B.K. Nigam, TO	CSTARI, Kolkata	Member
15.	R.N. Manna, TO	CSTARI, Kolkata	Member

MEMBERS OF SECTOR MENTOR COUNCIL		
S No	Name and Representing organization	Remarks
1	Mr. G.M. Rao, Chairman GMR Infrastructure IBC Knowledge Park, Phase 2, "D" Block, 9th Floor, 4/1, Bannerghatta Road, Bangalore - 560 029,Karnataka	Nominated by Federation of Indian Chambers of Commerce and Industry (FICCI)
2	Mr. Jasmeet Singh, Head-Customer Experience Program JCB India, 23/7 Mathura Road Ballabgarh, Faridabad, Haryana 121004	Nominated by Federation of Indian Chambers of Commerce and Industry (FICCI)
3	Mr. C.S. Gupta, Secretary Indian Plumbing Association E - 117, L.G.F. Greater Kailash - 3 Masjid Moth, NEW DELHI – 110 048	
4	Mr. Ajit Gulabchand, Chairman HCC Chairman Construction SSC Hindustan Construction Co. Ltd. Hincon House, 247 Park LBS Marg, Vikhroli (W), Mumbai - 400083	
5	Mr. Satish Gottipati M/s Precca Solutions India Pvt. Ltd. Plot No 6, D. No. 2-9/5/6 Venkat Sai Gateway, Green Land Colony, Hyderabad- 500032	Nominated by Federation of Indian Micro and Small & Medium Enterprises (FISME)
6	Dr. Anjan Dutta, Professor Dept. of Civil Engg. Indian Institute of Technology Guwahati Guwahati 781039, Assam, India	Nominated by Indian Institute of Technology, Guwahati
7	Dr. Mahendra Singh, Professor Indian Institute of Technology Roorkee Roorkee, Uttarakhand, India - 247667	Nominated by Indian Institute of Technology, Roorkee
8	Pr. S.C. Dutta, Professor Indian Institute of Technology Bhubaneswar Bhubaneswar-751 013	Nominated by Indian Institute of Technology, Bhubaneswar
9	Dr. Rajesh Deoliya, Principal Scientist CSIR-CBRI Extension Centre Zone 6, II nd Floor India Habitat Centre, Lodhi Road, New Delhi 110003	Nominated by Central Building Research Institute (CBRI), Roorkee
10	Dr. N. Dhang, Professor D/o Civil Engineering Indian Institute of Technology Kharagpur Kharagpur , India - 721302	Chairman

11	Dr. P. Sitapati Rao, Additional Director General National Academy of Construction NAC Grounds, Cyberabad, Hyderabad-500084, Andhra Pradesh, India	Nominated by National Academy of Construction, Hyderabad
12	Dr. Koshy Varghese, Professor D/o Civil Engg, Indian Institute of Technology Madras, IIT P.O., Chennai 600 036	Nominated by Indian Institute of Technology, Madras
13	Shri M.C. Sharma, Jt. Director (TTC)	Mentor
14	Shri.R.N. MANNA, TO	Representative of CSTARI
15	Shri. GOPALKRISHNAN, TO	Representative of NIMI
16	Smt. ARPANA SINGH, TO, NVTI NOIDA	Champion Master Trainer
17	Shri. S.RANA, TO, ATI, Kolkata	Member
18	Shri.S.R. VHATKAR, TO, ATI, Kolkata	Member
19	Shri, T.K. BHATTACHARYA, TO, ATI, Hyd	Member
20	Shri.P.K. MADAVI, TO, CTI, Chennai	Member
21	Smt. Surya Kumari, TO, RVTI Kolkata	Member
22	Shri. C.T. SHANTILAL, VI, ATI, Calicut	Member
23	Shri Devasari Ganesh,TO, RVTI Mumbai	Member
24	Shri K.N. Babu, TO, RVTI, Bangalore	Member
25	Shri. D.K. Chattopadhyay, TO, ATI Kolkata	Member
26	Shri. Chockalingam, TO, CTI, Chennai	Member
27	Smt. Brahmeswari, TO, RVTI(W), Bangalore	Member
28	Shri. K V Suresh, Principal, ITD, Kerala	Member
29	Shri. Musthfa V M, Sr. Instructor, ITD, Kerala	Member
30	Shri. Madhusudhanan C, Sr. Instructor, ITD, Kerala	Member
31	Shri. Suresh S, Sr. Instructor, ITD, Kerala	Member
32	Shri. R Sundar, ATO, Govt. ITI, Channai	Member
33	Smt. Amrutha, VI, RVTI(W), Bangalore	Member
34	Smt. Hari Chandana Devi, VI, RVTI(W), Panipat	Member
35	Ms. Aswathy Prabhakaran, VI, RVTI(W), Bangalore	Member
36	Shri. Sugesh K, Jr. Instructor, ITD, Kerala	Member

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1. COURSE INFORMATION

During the two years duration a candidate is trained on subjects viz. Professional Skill, Professional Knowledge, Workshop Science & Calculation and Employability Skills. In addition to this a candidate is entrusted to make/do project work and Extra Curricular Activities to build up confidence. The practical skills are imparted in simple to complex manner & simultaneously theory subject is taught in the same fashion to apply cognitive knowledge while executing task. The practical part starts with Architectural symbols, simple geometrical drawing and finally ends with designing Doors, Windows, Stairs, designing of Residential / office building in CAD, 3D in sketch-up software, Working drawing, Rendering in Photoshop, Preparation of 3D model and BOQ using BIM software like Revit, etc. The broad components covered under Professional Skill subject are as below:

Semester-I: This semester starts with Importance of trade training and professional prospects, Importance of safety and general precautions. The practical training starts with Free hand sketching, Lettering, basic drawing (consisting geometrical figure, Architectural symbols & representations). Later the drawing skills imparted on drawing of projections, drawing of stone and brick masonry, foundation, Carpentry Joints, Doors, Windows, Lintels, Arches. Trainees are introduced with CAD in the first semester and then they are entrusted to practice drawings with CAD.

Semester -II: In this semester drawing of Damp proof Course (DPC), Projection of Solids in inclined positions, Section of solids, Residential building Design, Stairs, Floors and flooring, Surface Development, Final site plan with landscape are being taught in the practical. From this semester trainees make drawings in CAD. Apart from practical components the trainees are being taught of History of architecture - Egyptian architecture, Greek architecture, Roman architecture and Indian architecture and related theory to practical in theory class.

Semester -III: Design of single/ double storied Residential building /Post office/ farm house, project in 3D sketch up, drawing of Special doors & windows, Roof and roof coverings, final design of plans rendered with furniture layout, Final site plan with landscape elements rendered, working drawing showing all dimensions of rooms and column grids with door window schedule and details, all four elevations with floor heights, lintel heights, sill heights and details, Section through staircase or toilet with complete details in the practical and related theory to practical in theory class are being taught in this semester.

Semester -IV: Project like small scale residential apartment/primary school/small office design, Joints in structure using CAD, Preparation of 3D model and BOQ using BIM software like Revit, etc. , Rendering in Photoshop, Compilation and final submission of Project work in the practical and related theory to practical, Climatic responsive design, Energy conservation, Green Architecture / sustainable architecture in theory class being taught in this semester.

Professional Knowledge subject is simultaneously taught in the same fashion to apply cognitive knowledge while executing task.

2. TRAINING SYSTEM

2.1 GENERAL

The Directorate General of Training (DGT) under Ministry of Skill Development & Entrepreneurship offers a range of vocational training courses catering to the need of different sectors of the economy/ labour market. The vocational training programs are delivered under the aegis of National Council of Vocational Training (NCVT). Craftsman Training Scheme (CTS) and Apprenticeship Training Scheme (ATS) are two pioneer programs of NCVT for propagating vocational training.

Architectural Draughtsman trade under CTS is one of the popular courses is delivered nationwide through network of ITIs, NVTIs and RVTIs. The course is of two years (04 semesters) duration. It mainly consists of Domain area and Core area. The Domain area (Trade Theory & Practical) impart professional skills and knowledge, while Core area (Workshop Calculation & science and Employability Skills) impart requisite core skill, knowledge and life skills. After passing out the training program, the trainee is awarded National Trade Certificate (NTC) by NCVT which is recognized worldwide.

Broadly candidates need to demonstrate that they are able to:

- Read & interpret technical parameters/documentation, plan and organize work processes, identify necessary materials and tools;
- Perform work with due consideration to safety rules, Govt. Bye laws and environmental protection stipulations;
- Apply professional knowledge, core skills & employability skills while performing the work.
- Produce sketches as per requirements of clients.
- Document the technical parameters related to the work undertaken.

2.2 CARRIER PROGRESSION PATHWAYS

- Can join Apprenticeship programme in industries leading to National Apprenticeship certificate (NAC).
- Can join Crafts Instructor Training Scheme (CITS) in the trade for becoming instructor in ITIs.
- Can take admission in diploma course in notified branches of Engineering by lateral entry.

2.3 COURSE STRUCTURE

Table below depicts the distribution of training hours across various course elements during a period of two-years (04 semesters): -

S No.	Course Element	Notional Training Hours
1.	Professional Skill (Trade Practical)	2410
2.	Professional Knowledge (Trade Theory)	504
3.	Workshop Calculation & Science	168
4.	Employability Skills	110
5.	Library & Extracurricular activities	168
6.	In-plant Training/ Project work	320
7.	Revision & Examination	480
	Total	4160

2.4 ASSESSMENT & CERTIFICATION

The trainee will be tested for his skill, knowledge and attitude during the period of the course and at the end of the training program as notified by the Government of India (GoI) from time to time. The employability skills will be tested in the first two semesters itself.

a) The **Internal Assessment** during the period of training will be done by **Formative Assessment Method** by testing for assessment criteria listed against learning outcomes. The training institute has to maintain an individual trainee portfolio as detailed in assessment guideline. The marks of internal assessment will be as per the template (Annexure – II).

b) The final assessment will be in the form of summative assessment method. The All India Trade Test for awarding NTC will be conducted by NCVT at the end of each semester as per the guideline of Government of India. The pattern and marking structure is being notified by Govt. of India from time to time. **The learning outcome and assessment criteria will be the basis for setting question papers for final assessment. The 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 REGULATION

The minimum pass percentage for practical is 60% & minimum pass percentage of theory subjects is 40%. For the purposes of determining the overall result, 25% weightage is applied to the result of each semester examination.

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. Due consideration should 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 the following:

- Job carried out in labs/workshop
- Record book/ daily diary
- Answer sheet of assessment
- Viva-voce
- Progress chart
- Attendance and punctuality
- Assignment
- Project work

Evidences of internal assessments are to be preserved until forthcoming semester 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 produce work which demonstrates attainment of an acceptable standard of craftsmanship with occasional guidance, and due regard for safety procedures and practices	<ul style="list-style-type: none"> • Demonstration of good skill in the use of hand tools, machine tools and workshop equipment. • Below 70% tolerance dimension achieved while undertaking different work with those demanded by the component/job. • A fairly good level of neatness and consistency in the finish. • Occasional support in completing the project/job.
(b) Weightage in the range of 75%-90% to be allotted during assessment	
For this grade, a candidate should produce work which demonstrates attainment of a reasonable standard of craftsmanship, with little guidance, and regard for safety procedures and practices	<ul style="list-style-type: none"> • Good skill levels in the use of hand tools, machine tools and workshop equipment. • 70-80% tolerance dimension achieved while undertaking different work with those demanded by the component/job. • A good level of neatness and consistency in the finish. • Little support in completing the project/job.
(c) Weightage in the range of more than 90% to be allotted during assessment	
For performance in this grade, the	<ul style="list-style-type: none"> • High skill levels in the use of hand tools,

candidate, with minimal or no support in organization and execution and with due regard for safety procedures and practices, has produced work which demonstrates attainment of a high standard of craftsmanship.

- machine tools and workshop equipment.
- Above 80% tolerance dimension achieved while undertaking different work with those demanded by the component/job.
- A high level of neatness and consistency in the finish.
- Minimal or no support in completing the project.



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3. JOB ROLE

Architectural Draughtsman; 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 or monochrome. May prepare model of constructions work. May work as Draughtsman Civil.

Reference NCO Code-2015: 3118.0100



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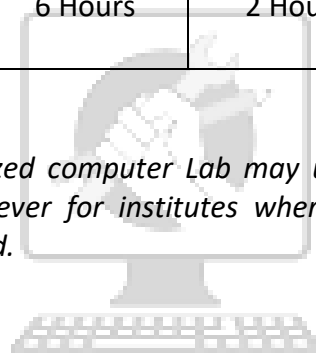
4. GENERAL INFORMATION

Name of the Trade	Architectural Draughtsman
NCO - 2015	3118.0100
NSQF Level	Level-5
Duration of Craftsmen Training	2 Years (4 Semesters each of six month duration)
Entry Qualification	Pass in 10 th Class under 10+2 system of Education with science and mathematics.
Unit Strength	20 (Max. supernumeraries seats: 6)
Space Norms	80 sq. m
Power Norms	6 KW
Instructors Qualification for	
1. Architectural Draughtsman Trade	<p>Degree in Architecture from recognized University/ Engineering College with one year experience in the relevant field.</p> <p style="text-align: center;">OR</p> <p>Diploma in Architecture from recognized board of technical education with two years experience in the relevant field.</p> <p style="text-align: center;">OR</p> <p>NTC/NAC passed in the trade with three years post qualification experience in the relevant field.</p> <p>Desirable: - Preference will be given to a candidate with CIC (Craft Instructor Certificate) in the trade.</p> <p>Out of two Instructors required for the unit of 2 (1+1), one must have Degree/Diploma and other must have NTC/NAC qualifications.</p>
2. Workshop Calculation & Science	<p>Degree in Engineering with one year experience.</p> <p style="text-align: center;">OR</p> <p>Diploma in Engineering with two years experience.</p> <p>Desirable: Craft Instructor Certificate in RoD & A course under NCVT.</p>
3. Employability Skill	<p>MBA OR BBA with two years experience OR Graduate in Sociology/ Social Welfare/ Economics with Two years experience OR Graduate/ Diploma with Two years experience and trained in Employability Skills from DGT institutes.</p> <p style="text-align: center;">AND</p>

	Must have studied English/ Communication Skills and Basic Computer at 12 th / Diploma level and above. OR Existing Social Studies Instructors duly trained in Employability Skills from DGT institutes				
Tools and Equipment	As per Annexure-I				
Distribution of training on Hourly basis: (Indicative only)					
Total Hrs /week	Trade Practical	Trade Theory	Workshop Cal. & Sc.	Employability Skills	Extra-Curricular Activity
40 Hours	28 Hours	6 Hours	2 Hours	2 Hours	2 Hours

Note:

Institutes having centralized computer Lab may utilize the same infrastructure for computer related training. However for institutes where such facility is not available a separate computer Lab is required.



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5. NSQF LEVEL COMPLIANCE

NSQF level for **Architectural Draughtsman** trade under CTS: Level 5.

As per notification issued by Govt. of India dated- 27.12.2013 on National Skill Qualification Framework total 10 (Ten) Levels are defined.

Each level of the NSQF is associated with a set of descriptors made up of five outcome statements, which describe in general terms, the minimum knowledge, skills and attributes that a learner needs to acquire in order to be certified for that level.

Each level of the NSQF is described by a statement of learning outcomes in five domains, known as level descriptors. These five domains are:

- a. Process
- b. Professional knowledge
- c. Professional skill
- d. Core skill
- e. Responsibility

The Broad Learning outcome of **Architectural Draughtsman** trade under CTS mostly matches with the Level descriptor at Level- 5.

The NSQF level-5 descriptor is given below:

Level	Process Required	Professional Knowledge	Professional Skill	Core Skill	Responsibility
Level 5	Job that requires well developed skill, with clear choice of procedures in familiar context	Knowledge of facts, principles, processes and general concepts, in a field of work or study.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	Desired mathematical skill, understanding of social, political and some skill of collecting and organizing information, communication.	Responsibility for own work and learning and some responsibility for other's works and learning

6. LEARNING/ ASSESSABLE OUTCOME

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

6.1 GENERIC LEARNING OUTCOME

1. Recognize & comply safe working practices, environment regulation and housekeeping.
2. Work in a team, understand and practice soft skills, technical English to communicate with required clarity.
3. Demonstrate knowledge of concept and principles of basic arithmetic, algebraic, trigonometric, statistics, co-ordinate system and apply knowledge of specific area to perform practical operations.
4. Read and apply engineering drawing for different application in the field of work.
5. Understand and explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity & quality.
6. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.
7. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.
8. Understand and apply basic computer working, basic operating system and uses internet services to get accustomed & take benefit of IT developments in the industry.
9. Understand and apply management of workers, communications and team management skills.

6.2. SPECIFIC LEARNING OUTCOME

Semester-I

10. Draw different types of architectural symbols
11. Draw different types free hand sketches.
12. Draw different type of letterings.
13. Draw different types of plane geometry.
14. Draw orthographic projections.
15. Draw different sizes of Bricks and Brick Masonry.
16. Draw different types of Stone Masonry.
17. Draw different types of Foundation.
18. Draw different Carpentry Joints.
19. Draw different types of Wooden Doors and Windows.
20. Draw different types of Lintels.
21. Draw different types of Arches.
22. Drafting in CAD.

Semester-II

23. Draw details of Damp proof Course (DPC) and Water Proofing Treatment at different locations.
24. Draw plan, elevation and side view of Solids in inclined positions and Section of Solids.
25. Illustrate design procedure of Residential Building.
26. Draw plan, elevation and section through toilet of the residential building and the site plan with landscape.
27. Draw typical vertical section of an external wall of two storied load bearing structure and RCC framed structure.
28. Draw Plan, elevation and Construction Details of different types of stairs.
29. Draw different types of flooring details.
30. Produce final project work applying advance CAD commands and File management.
31. Surface Development of geometrical solids.

Semester-III

32. Illustrate Design-Concept and visualization of design. Topic: Residential (single/ double storied), Post office, Farm house.
33. Draw sanction drawing with local authority bye laws.
34. Preliminary drawing of the Design project in AUTOCAD.
35. Read and Interpret structural drawing.
36. Draw 3 D model by sketch up software along with rendering, walkthrough, animated view.
37. Draw details of different types of doors.
38. Draw details of different types of windows.
39. Draw details of roofs and roof covering.
40. Prepare final design drawings in AUTOCAD.
41. Draw working drawing set to the site to execution.

Semester-IV

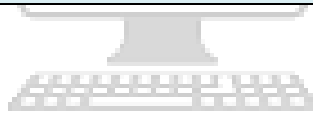
42. Draw the Anthropometrics & ergonomics of commercial building.
43. Draw Standard sizes of outdoor movements like swimming pool, basketball court, badminton court, play area etc.
44. Prepare design and the site plan with landscape of Residential Apartment/primary school in AUTOCAD.
45. Draw joints in structures (viz. Details of construction joints at various positions, Details of expansion joints in walls, roof).
46. Prepare 3D model and BOQ using BIM software (REVIT ARCHITECTURE).
47. Perform rendering in Photoshop (Convert the drawings in pdf and then render it in photoshop with necessary details).
48. Prepare Working drawing – viz. Kitchen layout, Electrical layout, Plumbing Layout, DWV details

7. LEARNING OUTCOME WITH ASSESSMENT CRITERIA

GENERIC LEARNING/ ASSESSABLE OUTCOME	
LEARNING / ASSESSABLE OUTCOME	ASSESSMENT CRITERIA
1. Recognize & comply safe working practices, environment regulation and housekeeping.	1.1 Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements and according to site policy.
	1.2 Recognize and report all unsafe situations according to site policy
	1.3 Identify and take necessary precautions on fire and safety hazards and report according to procedures.
	1.4 Identify, handle and store / dispose off dangerous goods and substances according to site policy and procedures following safety regulations and requirements.
	1.5 Identify and observe site policies and procedures in regard to illness or accident.
	1.6 Identify safety alarms accurately.
	1.7 Report supervisor/ Competent of authority in the event of accident or sickness of any staff and record accident details correctly according to site accident/injury procedures.
	1.8 Identify and observe site evacuation procedures according to site policy.
	1.9 Identify Personal Protective Equipment (PPE) and use the same as per related working environment.
	1.10 Identify basic first aid and use them under different circumstances.
	1.11 Identify different fire extinguisher and use the same as per requirement.
	1.12 Identify environmental pollution & contribute to the avoidance of instances of environmental pollution.
	1.13 Take opportunities to use energy and materials in an environmentally friendly manner.
	1.14 Avoid waste and dispose waste as per procedure.
	1.15 Recognize different components of 5S and apply the same in the working environment.
2. Work in a team, understand and practice soft skills, technical English to communicate with required clarity.	2.1 Obtain sources of information and recognize information.
	2.2 Use and draw up technical drawings and documents.
	2.3 Use documents and technical regulations and occupationally related provisions.
	2.4 Conduct appropriate and target oriented discussions with higher authority and within the team.
	2.5 Present facts and circumstances, possible solutions & use English

	special terminology.
	2.6 Resolve disputes within the team.
	2.7 Conduct written communication.
3. Demonstrate knowledge of concept and principles of basic arithmetic, algebraic, trigonometric, statistics, co-ordinate system and apply knowledge of specific area to perform practical operations.	3.1 Semester examination to test basic skills on arithmetic, algebra, trigonometry and statistics.
	3.2 Their applications will also be assessed during execution of assessable outcome and also tested during theory and practical examination.
4. Read and apply engineering drawing for different application in the field of work.	4.1 Semester examination to test basic skills on engineering drawing.
	4.2 Their applications will also be assessed during execution of assessable outcome and also tested during theory and practical examination.
5. Understand and explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity & quality.	5.1 Semester examination to test the concept in productivity, quality tools and labour welfare legislation
	5.2 Their applications will also be assessed during execution of assessable outcome.
6. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.	6.1 Semester examination to test knowledge on energy conservation, global warming and pollution.
	6.2 Their applications will also be assessed during execution of assessable outcome.
7. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal	7.1 Semester examination to test knowledge on personnel finance, entrepreneurship.
	7.2 Their applications will also be assessed during execution of assessable outcome.

& societal growth.	
8. Understand and apply basic computer working, basic operating system and uses internet services to get accustomed & take benefit of IT developments in the industry.	8.1 Semester examination to test knowledge on basic computer working, basic operating system and uses internet services.
	8.2 Their applications will also be assessed during execution of assessable outcome.
9. Understand and apply Management of Workers, Communication, Coordination and Team Management skills.	9.1 Semester examination to test knowledge on management of work. Communication, Co ordination and Management skill.
	9.2 Their applications will also be assessed during execution of assessable outcome. Like, planning, scheduling, engineering, designing, procurement & contracting, execution.



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SPECIFIC LEARNING/ ASSESSABLE OUTCOME	
LEARNING / ASSESSABLE OUTCOME	ASSESSMENT CRITERIA
SEMESTER-I	
10. Draw different types of Architectural symbols.	10.1 set and fix drawing paper on the drawing board (a) prepare Layout of drawing sheet, (b) prepare a Title block, (c) mark and fold on the designated drawing Sheet
	10.2 Draw architectural symbols for materials, doors and windows
	10.3 Draw architectural symbols for trees, plants, shrubs.
	10.4 Draw architectural symbols for plumbing fittings
	10.5 Draw architectural symbols for electrical fittings and fixtures
11. Draw different types free hand sketches.	11.1 Sketch any types of trees, plants and shrubs
	11.2 Sketch any one structure of monument.
	11.3 Draw any landscape drawing with pencil rendering.
	11.4 Sketch any objects like cube, cone, sphere, cylinder, prism, pyramid
	11.5 Perform any one structure of different composition of patterns
12. Draw different type of letterings.	12.1 Read and interpret different types of lettering commonly used in drawings.
	12.2 Draw Gothic Lettering in Freehand. (a) Sketch Roman Lettering in Freehand. (b) Draw Architectural Lettering in Freehand.
13. Draw different types of plane geometry	13.1 Draw a line parallel to any given point
	13.2 Perform different methods to divide a line into any equal parts
	13.3 Draw different methods of bisecting an angle, line or arc.
	13.4 Draw geometrical constructions using different methods for triangle, rectangle, square, circle, pentagon, hexagon, heptagon, octagon, ellipse.
14. Draw orthographic projection	14.1 Draw projections of lines in simple positions
	14.2 Draw projections of lamina in simple positions
	14.3 Draw projections of solids like cube, pyramid, prism, cone, cylinder in first angle position
	14.4 Draw projections of solids like cube, pyramid, prism, cone, cylinder in third angle position

15. Draw different sizes of Bricks and Brick Masonry.	15.1	Draw isometric view of traditional brick showing frog.
	15.2	Drew different types of bats and closers in isometric view
	15.3	Perform drawing of English bond for one brick thick and one and half brick thick with plan, elevation and isometric view (a) Perform drawing of Flemish bond for one brick thick and one and half brick thick with plan, elevation and isometric view
	15.4	Prepare drawing for different types of bonds like zig zag bond, diagonal bond, stretcher bond, header bond, monk wall bond, herring bone bond, Dutch bond, garden all bond
16. Draw different types of Stone Masonry.	16.1	Draw coursed and uncoursed rubble masonry.
	16.2	Draw random Rubble Masonry.
	16.3	Draw different types of ashlar masonry.
	16.4	Draw composite masonry with stone facing with brick, stone facing with concrete.
17. Draw different types of Foundation.	17.1	Analyze data for creating foundation drawing of specific project.
	17.2	Sketch different types of Pile Foundation.
	17.3	Draw details of Raft Foundation.
	17.4	Perform sketch of Spread Foundation.
	17.5	Sketch grillage foundation.
18. Draw different Carpentry Joints.	18.1	Sketch Lengthening Spliced or longitudinal Joints.
	18.2	Draw types of Bearing joint commonly used.
	18.3	Draw various types of widening or side joints.
	18.4	Draw types of Corner Joints.
	18.5	Sketch types of oblique- shouldered joints
19. Draw different types of Wooden Doors and Windows.	19.1	Interpret the purpose and utility of doors.
	19.2	Draw details of a door frame.
	19.3	Draw details of Flush Door.
	19.4	Sketch details of Battened and ledged Door.
	19.5	Draw parts of wooden paneled door.
	19.6	Determine scope of windows in building.
	19.7	Draw details of Casement windows.
	19.8	Sketch of Louvered or Venetian Window.
	19.9	Draw details of ventilator
20. Draw different types of Lintels.	20.1	Understand purpose of Lintels and Chajja.
	20.2	Draw Wooden Lintel in place.
	20.3	Draw Brick lintel in position. (a) Draw Reinforced Lintel

	20.4 Draw Stone lintel.
	20.5 Draw RCC lintel in position.
21. Draw different types of Arches.	21.1 Determine utility of Arches.
	21.2 Draw various parts of Arch with technical leveling.
	21.3 Draw a Flat Arch.
	21.4 Draw Semi-circular arch.
	21.5 Draw Segmental Arch.
	21.6 Drawing of pointed Arch.
	21.7 Draw two Centre Arch.
22. Drafting in CAD	22.1 Understanding the basic starting procedures in CAD
	22.2 Analyzing the basic CAD commands
	22.3 Draft a plan and elevation of a 3 seater sofa / 1 seater sofa
	22.4 Draft a plan of chair
	22.5 Draft elevation of door
	22.6 Drafting plan of interiors of bed room/living room with all furniture layout
SEMESTER-II	
23. Draw details of Damp proof Course (DPC) and Water Proofing Treatment at different locations.	23.1 Identify sources of dampness in different locations.
	23.2 Identify effects of dampness. (i) Draw Damp Proof Treatment in Basement. (ii) Draw Damp Proof Treatment in Plinth Level / Ground Floors. (iii) Draw Damp Proof Treatment in Upper Floors. (iv) Draw Damp Proof Treatment in cavity wall.
	23.3 Discover sources of water seepage in roof.
	23.4 Identify effects of water seepage.
	23.5 Draw detail of water proofing treatment at roof using PCC.
	23.6 Draw detail of water proofing treatment at roof using bitumen.
24. Draw plan, elevation and side view of Solids in inclined positions and Section of Solids.	24.1 Draw plan, elevation and side elevation of inclined solids cube.
	24.2 Draw plan, elevation and side elevation of inclined solids pyramid.
	24.3 Draw plan, elevation and side elevation of inclined solids prism.
	24.4 Draw plan, elevation and side elevation of inclined solids cone.
	24.5 Draw plan, elevation and side elevation of inclined solids cylinder.
	24.6 Check the drawings to confirm their correctness.

	24.7 Draw sectional plan, elevation and side elevation of solids/ inclined solids cutting by a horizontal section plane.
	24.8 Draw sectional plan, elevation and side elevation of solids/ inclined solids cutting by a vertical section plane.
	24.9 Draw sectional plan, elevation and side elevation of solids/inclined solids cutting by a section plane inclined to HP
	24.10 Draw sectional plan, elevation and side elevation of solids/ inclined solids cutting by a section plane inclined to VP.
	24.11 Draw the true shape of the cutting surface.
25. Illustrate design procedure of Residential Building.	25.1 Illustrate Client's requirements.
	25.2 Analyze the physical condition of proposed site.
	25.3 Analyze the environmental condition of proposed site.
	25.4 Follow the Building Bye-laws according to local administration.
	25.5 Analyze design Principles of a residential Building.
	25.6 Determine Circulation space in building.
	25.7 Identify the Entry and Exit requirements of Residential Building.
	25.8 Analyze requirement of Car Parking.
	25.9 Check the drawings to confirm their correctness.
	25.10 Calculate estimated cost.
26. Draw plan, elevation and section through toilet of the residential building and the site plan with landscape.	26. 1. Analyze the requirement of no. of bed room of the Residential Buildings.
	26. 2. Analyze the requirement of area/ type of drawing and dining hall.
	26. 3. Analyze the requirement of no. and area of toilet.
	26. 4. Analyze the requirement of area and type of kitchen.
	26. 5. Analyze the requirement of area and location of verandah.
	26. 6. Draw ground Floor Plan of a single storied Residential Building.
	26. 7. Draw roof Plan of the Residential Building.
	26. 8. Draw front and side elevation of the Residential Building.
	26. 9. Draw section through entrance, balcony, toilet, doors and windows of the Residential Building.
	Check the drawings to confirm their correctness.
27. Draw typical vertical section of an external wall of two storied load bearing structure and RCC framed structure.	27. 1. Draw typical vertical section of an external wall of two storied load bearing structure.
	27. 2. Draw typical vertical section of an external wall of two storied RCC framed structure.
	27. 3. Check the drawings to confirm their correctness.
28. Draw Plan, elevation	28. 1. Draw plan and section of a straight stair.

and Construction Details of different types of stairs.	28. 2. Draw plan and section of an open well stair.
	28. 3. Draw plan and section of a quarter turn stair.
	28. 4. Draw plan and section of a bifurcated stair
	28. 5. Draw plan and section of a circular stair.
	28. 6. Draw detailed part section of a stair showing its various components.
	28. 7. Draw detailed part section of a wooden stair.
	28. 8. Draw detailed plan and section of a dog legged RCC stair.
	28. 9. Draw plan and section MS. spiral stair.
	28. 10. Check the drawings to confirm their correctness.
29. Draw different types of flooring details.	29.1 Draw Flooring details of Ground Floor over PCC floor slab using different floor finish material.
	29.2 Draw Flooring details of Basement Floor over RCC Basement Slab using different floor finish material.
	29.3 Draw flooring details of RCC Upper Floor using different floor finish material.
	29.4 Draw flooring details of wooden suspended Floor using different floor suitable finish material.
	29.5 Draw flooring details of wooden double Floor using different floor suitable finish material.
30. Produce final project work applying advance CAD commands and File management.	30.1 Application of advance CAD commands e.g. layers, block, insert, group, divide, measure, design center, text gradient, dimension style, leader, layouts, model space view ports.
	30.2 Determine the location of the drawing files to be saved.
	30.3 Draft all Final Floor Plans of the Residential Building in AUTO CAD.
	30.4 Draft Front Elevation and one side elevation of building.
	30.5 Draw two numbers of Through Sections showing Staircase, Toilet, Kitchen Balcony, Habitable room and Car Parking in AUTO CAD.
	30.6 Site Plan with rendering.
	30.7 Draw Key/ Location Plan.
	30.8 Check the drawings to confirm their correctness.
31. Surface Development of geometrical solids.	31.1 Develop surface of different prisms and pyramids in simple position cutting by horizontal plane.
	31.2 Develop surface of different prisms and pyramids in simple position cutting by vertical plane.
	31.3 Develop surface of different prisms and pyramids in simple position cutting by plane inclined to HP.
	31.4 Develop surface of different prisms and pyramids in simple position cutting by a plane inclined to VP.
	31.5 Develop surface of different prisms and pyramids inclined to VP cutting by horizontal plane.

	31.6	Develop surface of different prisms and pyramids inclined to VP simple position cutting by vertical plane.
SEMESTER-III		
32. Illustrate Design-Concept and visualization of design. Topic: Residential (single/double storied) Post office, Farm house	32.1	Make Bubble diagram showing the through circulated areas one way, two way.
	32.2	Elements of schematic drawing. Its standard sizes and area required around for movement
	32.3	Follow the Building Bye-laws according to local administration.
	32.4	Analyze requirement of Car Parking.
	32.5	Presentation drawing show the details of furniture layout, entrance exit ,north point, split lvls, built-up area, carpet area, common area.
33. Draw sanction drawing with local authority bye laws.	33.1	Draw sanction drawing showing floor plans site plan, location plan, plumbing details, rainwater harvest ,schedule of areas, schedule of openings ,architects signature, client signature, north point.
	33.2	Check the drawings to confirm their correctness.
34. Preliminary drawing of the Design project in AUTOCAD.	34.1	Draw ground Floor Plan of a single storied Residential Building.
	34.2	Draw typical floor plan with staircase
	34.3	Draw roof Plan of the Residential Building.
	34.4	Draw front and side elevation of the Residential Building.
	34.5	Draw section through entrance, balcony, toilet, doors and windows of the Residential Building.
	34.6	Draw enlarged details at roof terrace.
	34.7	Draw rendered site plan with landscape.
	34.8	Check the drawings to confirm their correctness.
35. Read and Interpret structural drawing.	35.1	Draw R.C.C roof one way slab in plan.
	35.2	Draw one way slab section
	35.3	Draw two way slab, section.
	35.4	Draw single reinforced beam
	35.5	Draw double reinforced beam.
	35.6	Illustrate column foundation plan ,section detail.
	35.7	Prepare stairs waist slab reinforcement details.
36. Draw 3 D model by sketch up software along with rendering, walkthrough	36.1	Draw 3D animated view with help of sketch up software
	36.2	project submission with sky, trees presentation. (a) Import drawing from Auto CAD. (b) Tools. click drag-release © Extrude (push/pull) ,grouping ,layers, arc-2 point, shapes – rectangle ,move, orbit ,zoom, pan

animated view	(d) Auto fold, offset, make component, copy array (e) solid tools, paint bucket, follow me. mirror scale, rotate (f) sand box—terrain, smooove, drape, add detail, from contour, from scratch, shadow ,fog, flip edge, explode. (g) camera, walkthrough, animated view by setting time. (h) view, axes ,text light effects—omni, spot, sphere ,les light, print option, hide/unhide classifier, intersect faces.
37. Draw details of different types of doors.	37.1 Discover special doors as per special requirement,
	37.2 Draw details of revolving door.
	37.3 Draw details of sliding door.
	37.4 Draw details of louvered door/puja door.
	37.5 Identify the metal doors as per design.
	37.6 Draw details of rolling steel shutter.
	37.7 Draw details of aluminium swing door.
	37.8 Draw collapsible door, M.S door,
38. Draw details of different types of windows	38.1 Discover special windows
	38.2 Draw bay window.
	38.3 Draw details of dormer window, sky light .
	38.4 Draw aluminium sliding windows.
	38.5 Draw UPVC windows.
	38.6 Draw CRCA sheets/pressed steel windows.
39. Draw details of roofs and roof covering.	39.1 Draw details of lean to roof .
	39.2 Draw couple roof.
	39.3 Draw king post truss with details and technical terms.
	39.4 Draw queen post truss.
	39.5 Determine roof covering materials.
	39.6 Method of fixing AC/GI sheets to different types of purlins
	39.7 Method of fixing mangalore tiles .
40. Prepare final design drawings in AUTOCAD.	40.1 Draft all Final Floor Plans of the Residential Building in AUTO CAD.
	40.2 Draft Front Elevation and one side elevation of building.
	40.3 Draw two numbers of through Sections showing Staircase, Toilet, Kitchen Balcony, Habitable room and Car Parking in AUTO CAD.
	40.4 Check the drawings to confirm their correctness.
41. Draw working drawing set to the site to execution.	After friezing /finalizing scheme drawing with column position
	41.1 Centerline drawing with beam c/c dimensions.
	41.2 Draw detailed column footing with dimension.
	41.3 Draw Ground Floor Plan with Door Window schedule, I split

	levels with dimension.
	41.4 Draw First Floor Plan With Staircase design.
	41.5 Draw elevations in 1:50 scale.
	41.6 Draw detailed section through staircase , floor heights, lintel, sill heights .
	41.7 Draw enlarged stair design along with railing, balcony railing
	41.8 Draw compound wall detail.
SEMESTER-IV	
42. Draw the Anthropometrics & ergonomics of commercial building.	42.1 Draw the Furniture design, its standard sizes and area required around for movement and height of Office Layout
	42.2 sketch the office lay out for 50 number staff
	42.3 Draw the office cabin for Managing Director.
	42.4 Draw the reception lay out.
	42.5 Draw the working area lay out.
	42.6 Check the drawings to confirm their correctness.
43. Draw Standard sizes of outdoor movements like swimming pool, basketball court, badminton court, play area etc.	43.1 Analyze data for creating swimming pool and draw the layout of swimming pool along with safety measurements.
	43.2 Draw the basketball court / badminton court.
	43.3 Sketch the layout, the play area of primary school.
	43.4 Check the drawings to confirm their correctness.
44. Prepare design and site plan with landscape of Residential Apartment/primary school in AUTOCAD	44.1 Read and interpret design data after analyzing the requirement and area analysis.
	44.2 Illustrate Client's requirements. sketch the bubble diagram.
	44.3 Identify the Entry and Exit requirements of Residential Building.
	44.4 Analyze requirement of Car Parking. (a) Draw stilt /basement/car parking detailed drawing along with drainage, plumbing, water purification tanks. (b) Determine Circulation space and draw detailed drawing of floor plans of building.
	44.5 Check the drawings to confirm their correctness.
	44.6 Sketch the four side elevations.
	44.7 Draw section through staircase and toilet.
	44.8 Draw site plan with landscape layout.
45. Draw joints in structures (viz. Details of construction joints at various positions,	45.1 Location of construction joints for different members. (a) Draw construction joint installation at slabs, columns beams and walls after the days work.
	45.2 Illustrate with neat sketches of provision of joints in the following components of reservoir.

Details of expansion joints in walls, roof)	(a) draw details at junction between wall and floor (b) draw details of construction joint in the floor of reservoir
	45.3 Draw details of different types of joints in structure. (a) Isolation joint in detail (b) Contraction joint, Dummy joint. © Sliding joint,
	45.4 Draw plan showing location of contraction, expansion and isolation joints.
	45.5 Illustrate Expansion joints in walls and roofs, spacing of expansion joints, materials used in expansion joints brick masonry (a) Draw plan showing location of expansion joint between two building blocks. (b) section 'x-x' detail and enlarged detail at walls, roof, foundation of brick masonry walls (c) Draw plan showing expansion joint in verandah slab with blown up details
	45.6 Draw detailed layout of provision of expansion joint in framed structure at (a) roof level (b) first floor level (c) foundation level
	45.7 Check the drawings to confirm their correctness.
46. Prepare 3D model and BOQ using BIM software (REVIT ARCHITECTURE)	46.1 Create 3D model from 2D plan.
	46.2 Interpret the basic starting procedure like installation, Unit conversion etc.
	46.3 Explore the User Interface: Menu Bar and Toolbars, Options Bar, Type Selector, Properties Button, Design Bar, Project Browser, Status Bar, View Control Bar, Drawing Area etc.
	46.4 Place and modify walls
	46.5 Complex walls
	46.6 Draw scheme in revit architecture (Creating 3D model from 2D plane) (a) Place Door window and components with dimension and constraints. (b) Create floors and Roof & ceilings © Curtain walls (d) Stairs (e) Structural elements (f) Massing and site (Splitting, merging, topo surface etc), and conceptual models (g) Family creation (Doors & Windows, staircase, furniture etc)
	46.7 Creating and Documenting the Project: Create and name a project in which you will create the building model. (a) Add tags to the project and schedule doors and rooms.

	<p>(b) Create a colour scheme of the drawings with colours fill & Color Scheme Legend</p> <p>© Import and Export (Auto CAD files)</p> <p>(d) Manage Views (Plan region, plan view, ceiling plan, area plan & structural plan, Callout views)</p> <p>(e) Sections</p> <p>(f) Design options</p>
	<p>46.8 Generate surfaces and apply material to the model: Generate 3D model from 2D plan and apply material Decals</p>
	<p>46.9 Create Lighting, Camera view and rendering: (a) Render drawing. (b) place Camera & Lightings © Solar study and Walkthrough</p>
	<p>46.10 Prepare bill of Quantity : (a) Calculate Quantity of materials (b) Prepare Schedule (Bill of materials, Quantities etc)</p>
47. Perform rendering in Photoshop (Convert the drawings in pdf and then render it in photoshop with necessary details)	<p>47.1 Convert the floor plans in pdf and then render the drawing in photoshop with necessary details.</p>
	<p>47.2 Identify the basic features of Photoshop: Getting Started, Interface Layout, Palettes, Toolbox, Selection Tools, Alteration Tools, Drawing and Selection Tools, Assisting Tools, Color Boxes and Modes, Basic Image Editing and Saving.</p>
	<p>47.3 Import PDF Floor plans and render it with colours, textures and necessary details.</p>
	<p>47.4 Import an architectural elevation, section drawings and render in Photoshop.</p>
	<p>47.5 Complete the 3D view of a building with graphical representations (Sky, Trees, Human, Automobiles etc.,)</p>
48. Prepare Working drawing	<p>48.1 Draw kitchen layout details: include plan, section and all side elevations with proper dimensions and material specification.</p>
<ul style="list-style-type: none"> • Kitchen layout, • Electrical layout, • Plumbing Layout • DWV details 	<p>48.2 Draw the electrical layout of a working drawing floor plan with the proper symbols, dimensions, and notations.</p>
	<p>48.3 Draw Plumbing Layout drawing, shows the system of piping for fresh water going into the building and waste going out, water supply system, drainage system, Legends, Notes. Fixture units also should be marked along with the pipe. Pipes with different purposes will be displayed with different colors for ease of understanding. Drainage pipes should be shown with slope, manhole schedule which consist of each manhole name, Depth etc.</p>
	<p>48.4 Draw the plan and elevation of DWV details with the specification, location and schedules of the openings.</p>

SYLLABUS FOR ARCHITECTURAL DRAUGHTSMAN TRADE			
FIRST SEMESTER – 06 Months			
Week No.	Reference Learning Outcome	Professional Skills (Trade Practical) With Indicative Hours	Professional Knowledge (Trade Theory)
01	<ul style="list-style-type: none"> Recognize & comply safe working practices, environment regulation and housekeeping. 	Familiarization <ol style="list-style-type: none"> Importance of safety and general precautions observed in the institute and in the section. (10 hrs) Importance of the trade in the development of the country's infrastructure. (06 hrs) Recreational, medical facilities and other extracurricular activities of the institute. (06 hrs) All necessary guidance to be provided to the new comers to become familiar, with the working of training institute. (06 hrs) 	Orientation <p>Familiarization with the institute Importance of trade training Introduction to the trade and professional prospects Orientation of subjects Familiarization with engineering drawing, tools and equipment</p>
02	<ul style="list-style-type: none"> Draw different types of architectural symbols 	Architectural symbols <ol style="list-style-type: none"> Free hand lettering styles. (07 hrs) Architectural symbol for materials, doors, windows. (07 hrs) Architectural symbols for trees, plants, shrubs. (07 hrs) Architectural symbols for plumbing and electrical fittings and fixtures. (07 hrs) 	Architectural Symbols <p>Architectural signs and symbols and their uses in the drawings</p>
03	<ul style="list-style-type: none"> Draw different types free hand sketches. Draw different type of letterings. 	Sketching <ol style="list-style-type: none"> Free hand sketching of trees, plants and shrubs. (05 hrs) Free hand sketching of landscape and monuments. (05 hrs) Free hand sketching of objects. (05 hrs) Lettering – types of 	Sketching techniques <p>Elements of drafting, readability, clarity, accuracy and neatness Pencil grades Method of pencil uses Uses of different brush strokes Various types of lines used for sketching</p>

		<p>lettering, legibility, uniformity. (08 hrs)</p> <p>13. Purpose and uses of lines, curves, line weight, types of lines. (05 hrs)</p>	
04	<ul style="list-style-type: none"> Draw different types of plane geometry. 	<p>Plane geometry</p> <p>14. Draw a line parallel to any given point. (04 hrs)</p> <p>15. Divide a line into any number of equal parts different methods. (04 hrs)</p> <p>16. Bisect a line, arc or angle. (04 hrs)</p> <p>17. Geometrical constructions using different method – square, pentagon, triangle, hexagon, heptagon, octagon, ellipse. (06 hrs)</p> <p>Dimensioning</p> <p>18. Basic system of measurement, dimensional control, location, dimensioning of different objects like lines, circle, curves and angles Scale and proportion. (10 hrs)</p>	<p>Solids</p> <p>Definition of solids – cube, square prism, hexagonal prism, triangular prism, square prism, triangular pyramid, hexagonal pyramid, pentagonal pyramid, cylinder, sphere, cone.</p>
05-08	<ul style="list-style-type: none"> Draw orthographic projections. 	<p>Introduction to orthographic projections</p> <p>19. Types of projections. (06 hrs)</p> <p>20. Projection planes. (06 hrs)</p> <p>21. First angle projection. (06 hrs)</p> <p>22. Third angle projection. (06 hrs)</p> <p>23. Method of drawing orthographic projections. (06 hrs)</p> <p>Projections of lines and lamina</p> <p>24. Projections of lines in simple position. (12 hrs)</p> <p>25. Projection of lamina in simple position. (12hrs)</p> <p>Projection of solids in simple positions</p> <p>26. Drawing plan, elevation and side elevation of simple solids like cube, pyramid,</p>	<p>Types of projections</p> <p>Types of projections</p> <p>Projection planes</p> <p>First angle projection</p> <p>Third angle projection</p> <p>Isometric view</p> <p>Isometric view of geometrical solids</p>

		<p>prism, cone, cylinder in first angle projection. (30 hrs)</p> <p>27. Drawing projection of solids in third angle projection in simple positions. (28 hrs)</p>	
09-10	<ul style="list-style-type: none"> Draw different sizes of Bricks and Brick Masonry. 	<p>Brick masonry</p> <p>28. Sizes of brick and brick bats. (10 hrs)</p> <p>29. English and Flemish bond for one brick thick and one and half brick thick wall. (18 hrs)</p> <p>30. Different types of bonds (zig zag bond, diagonal bond, stretcher bond, header bond, monk wall bond, herring bone bond, Dutch bond, garden wall bond). (28 hrs)</p>	<p>Brick masonry</p> <p>Technical terms, Sizes of brick and brick tiles, Principle of brick masonry construction, English and Flemish bond for one brick thick and one and half brick thick wall, Different types of bonds and their uses in construction, Hollow brick masonry, AAC Block, Flyash brick</p>
11	<ul style="list-style-type: none"> Draw different types of Stone Masonry. 	<p>Stone masonry</p> <p>31. Coursed and un coursed rubble masonry. (06 hrs)</p> <p>32. Random rubble masonry. (06 hrs)</p> <p>33. Ashlar masonry. (06 hrs)</p> <p>34. Composite masonry (stone facing with brick backing, stone facing with concrete backing, stone facing with rubble backing). (10 hrs)</p>	<p>Stone masonry</p> <p>Technical terms Principles of stone masonry Rubble masonry Ashlar masonry Composite masonry</p>
12	<ul style="list-style-type: none"> Draw different types of Foundation. 	<p>Foundation</p> <p>35. Types of foundation – spread foundation, grillage foundation, pile foundation, raft or mat foundation. (28 hrs)</p>	<p>Foundation</p> <p>Purpose of foundation Causes of failure of foundation Types of foundation – spread foundation, grillage foundation, pile foundation, raft or mat foundation</p>
13	<ul style="list-style-type: none"> Draw different Carpentry Joints. 	<p>Carpentry Joints</p> <p>36. Lengthening, spliced or longitudinal joints. (04hrs)</p> <p>37. Bearing joints. (04 hrs)</p> <p>38. Framing joints. (05hrs)</p> <p>39. Angle or corner joints. (05 hrs)</p> <p>40. Widening or side joints. (05 hrs)</p> <p>41. Oblique-shouldered joints.</p>	<p>Carpentry Joints</p> <p>Technical terms Lengthening joints and their uses Bearing joints and their uses Framing joints and their uses Angle or corner joints and their uses Widening or side joints and their uses Oblique-shouldered joints and their</p>

		(05hHrs)	uses
14-16	<ul style="list-style-type: none"> Draw different types of Wooden Doors and Windows. 	<p>Doors 42. Details of paneled door, flush door, batten and ledged door. (44 hrs)</p> <p>Windows 43. Details of casement window, louvered window, ventilator. (40 hrs)</p>	<p>Doors Standard Sizes of doors Types of doors - paneled door, flush door, batten and ledged door</p> <p>Windows Standard Sizes of windows Details of casement window, louvered window, ventilator Fixtures and fasteners Types of joints (used in doors and windows)</p>
17	<ul style="list-style-type: none"> Draw different types of Lintels 	<p>Lintels 44. Details of Wooden lintel, stone lintel, brick lintel, steel lintel, RCC lintel, Chajjas. (28 hrs)</p>	<p>Lintels Purpose of lintel Types and uses of lintels – wooden lintel, stone lintel, brick lintel, steel lintel, RCC lintel, Chajjas</p>
18	<ul style="list-style-type: none"> Draw different types of Arches. 	<p>Arches 45. Details of semicircular arch, flat arch, segmental arch, pointed arch, two centered arch. (28 hrs)</p>	<p>Arches Technical terms Materials used for construction of arches Types of arches and their uses – flat arch, semicircular arch, segmental arch, semi elliptical arch, two centered arch, three centered arch.</p>
19-21	<ul style="list-style-type: none"> Drafting in CAD 	<p>CAD 46. Introduction to CAD. (03hrs) 47. Starting procedures of CAD – screen appearance, tool bar, menu bar, quick access tool bar, command tool bar, units, osnap settings, dimensioning. (04 hrs) 48. Basic CAD drafting commands - 1 – line, circle, arc, ellipse, copy, move, rotate, erase, undo, mirror, offset, fillet, polygon, trim, extend, explode. (05 hrs) 49. Basic CAD commands 2 – rectangle, array, scale, stretch, break, join, chamfer, spline, colors, line</p>	<p>Factors considered in architectural design Understanding the basic elements of design like point, line, plane, figure, form and space, light and color, texture.</p>

		<p>type, line weight, properties, match properties, hatch. (05 hrs)</p> <p>50. Draft a plan and elevation of a 3 seater sofa / 1 seater sofa basic CAD commands. (15 hrs)</p> <p>51. Draft plan of chair using Basic CAD commands. (15 hrs)</p> <p>52. Draft door elevation using basic CAD commands. (15 hrs)</p> <p>53. Draft interiors of bed room/living room using basic CAD commands. (22 hrs)</p>	
22-23	<p>Project work/Site Visit</p> <p>Broad Area:</p> <p>a) Project work on a single floor residence with :</p> <ul style="list-style-type: none"> • Floor Plans (Single line diagram to be made available). • Furniture Layout of the plan. • Front Elevation. <p>b) Site visit to any of the construction site/historical monuments to observe the details.</p>		
24-25	Revision		
26	Examination		

Note: -

1. Some of the sample project works (indicative only) are given against each semester.
2. Instructor may design their own project and also inputs from local industry may be taken for designing such new project.
3. The project should broadly cover maximum skills in the particular trade and must involve some problem solving skill.
4. If the instructor feels that for execution of specific project more time is required than he may plan accordingly to produce part/ sub-drawings in appropriate time i.e., may be in the previous semester or during execution of normal trade practical.
5. Introduction of CAD with basic command in Trade Theory and Practice on CAD with basic command in Trade Practical 2 hr. per week.
6. Expert lecture may be organized at regular interval and when required.
7. More emphasis to be given on video/real-life pictures during theoretical classes. Some real-life pictures/videos on the topics taught in this semester may be shown to the trainees to give a feel of industry & their future assignment.

SYLLABUS FOR ARCHITECTURAL DRAUGHTSMAN TRADE			
SECOND SEMESTER – 06 Months			
Week No.	Reference Learning Outcome	Professional Skills (Trade Practical) With Indicative Hours	Professional Knowledge (Trade Theory)
27-28	<ul style="list-style-type: none"> Draw details of Damp proof Course (DPC) and Water Proofing Treatment at different locations. 	Damp proof Course (DPC) 54. Details at plinth level. (15 hrs) 55. Details at terrace level (Water Proofing Treatment). (14 hrs) 56. Details at basement level. (15 hrs) 57. Details of cavity wall. (12 hrs)	Damp proof Course (DPC) Definition Sources of dampness Prevention methods of dampness – integral treatment, surface treatment, membrane damp proofing, cavity wall construction Materials used in DPC – mastic asphalt, hot laid bitumen, metal sheets, PCC etc.
29-30	<ul style="list-style-type: none"> Draw plan, elevation and side view of Solids in inclined positions and Section of Solids. 	Projection of Solids in inclined positions 58. Drawing plan, elevation and side elevation of inclined solids like cube, pyramid, prism, cone, cylinder in first angle projections. (28 hrs) Section of solids 59. Drawing projection of solids in different section plane. (28 hrs)	Anti termite treatment Types of Anti termite treatment Treatment to basement in ordinary soil Treatment to basement in damp soil
31-32	<ul style="list-style-type: none"> Illustrate design procedure of Residential Building. 	Introduction to design 60. Design topic – Residential. (24 hrs) 61. Concept and visualization of design. (32hrs) (Students should be able to understand the process of designing and the design project will go throughout the semester)	Design principles – balance, proportion, perspective, movement, rhythm, harmony, unity, symmetry and contrast
33-34	<ul style="list-style-type: none"> Draw plan, elevation and section through toilet of the residential building and the 	Preliminary drawing 62. Drawing to be prepared by trainees in AUTOCAD based on single floor residential building after analyzing the requirement and area	Conceptual design ideas – site analysis, site planning, requirements, space designation, proportionately defined rooms, single line diagram,

	site plan with landscape.	analysis. (12 hrs) 63. Initial sketches/preliminary drawings manually. (10 hrs) 64. Sketches of the plan. (06 hrs) 65. Front elevation and one side elevation. (06 hrs) 66. Section through staircase or toilet. (16 hrs) 67. Site plan with landscaping. (06 hrs)	floor plan analysis, functional planning.
35	<ul style="list-style-type: none"> Draw typical vertical section of an external wall of two storied load bearing structure and RCC framed structure 	68. Load bearing wall. (12 hrs) 69. RCC framed structure. (16 hrs)	Pre fabricated panels RCC, GI Powder coated steel panels.
36-38	<ul style="list-style-type: none"> Draw Plan, elevation and Construction Details of different types of stairs. 	Stairs 70. Plan and elevation of different types of stairs – straight stairs, quarter turn stairs, open well stairs, bifurcated stairs, circular stairs. (26 hrs) 71. Construction Details of dog-legged stairs, baluster details, railing, nosing, tread and riser calculation. (26 hrs) 72. Details of wooden stairs. (16 hrs) 73. Details of MS spiral stairs. (16 hrs)	Stairs Technical terms General dimensions and arrangements Requirements of good stairs Ashlar masonry Classification of stairs – straight flight stairs, dog legged stairs, newel stairs, open well stairs, geometrical stairs, circular stairs, bifurcated stairs, spiral stairs Stairs of different materials – wooden stairs, stone stairs, metal stairs, reinforced concrete stairs
39-40	<ul style="list-style-type: none"> Draw different types of flooring details. 	Floors and flooring 74. Components of ground floor. (10 hrs) 75. Details of cement flooring. (10 hrs) 76. Details of stone / tile flooring. (12hrs) 77. Details of wooden suspended flooring. (12 hrs) 78. Details of wooden double floor. (12 hrs)	Floors and flooring Components of floor – sub floor, floor covering, construction of ground floor, selection of floorings Suspended floors Floor coverings Ground and basement floor
41-43	<ul style="list-style-type: none"> Produce final project work 	CAD 79. Advance CAD commands –	History of architecture (HOA)

	applying advance CAD commands and File management	<p>layers, block, insert, group, divide, measure, design center, text gradient, dimension style, leader, layouts, model space view ports, File management. (20 hrs)</p> <p>Final design</p> <p>80. Final floor plans showing living room, kitchen, bed rooms, toilet, logical order from the main entrance, basic area with furniture, garage and driveway, pedestrian ways, levels, north line, section line, scale, dwv schedule, statement of area etc. (30 hrs)</p> <p>81. Front elevation with all heights and levels mentioned. (17 hrs)</p> <p>82. One side elevation with all heights and levels mentioned(17 Hrs)</p> <p>Note: design elements to keep in consideration while designing the elevations</p>	<p>Egyptian architecture Characteristic features of Egyptian architecture Tombs mastabas pyramid – the great pyramid at cheops at giza the great sphinx of chephren</p> <p>Greek architecture Greek columns like doric order, ionic order, corintian order Characteristic features of the temple of Parthenon at Athens, Olympia stadium at athens</p>
44	28. Surface Development of geometrical solids.	<p>Surface Development</p> <p>83. Developing surface Development of solids. (28 hrs)</p>	<p>Roman architecture Characteristic features of the temples of Saturn at rome, the pantheon at Athens, basilica of Trajan at rome.</p>
45-46		84. Detailed section through staircase / toilet with all heights and levels mentioned. (All presentation drawing to be submitted as project spiral binding). (56 hrs)	<p>Indian architecture Stupas and its characteristic features and typical examples Typical Buddhist column or order Northern Indian style elements and characteristic features (lingaraja temple at orissa, sun temple at konark, temple of khajuraho)</p>
47		85. Final site plan with landscape elements. (28 hrs) (Note: subject of drawing, scale,	Central hindu style elements and characteristic features (rock cut temples at badami and Humpi, hoysaleswar

		date, job no, address, ph.no, north – south direction, sheet no. to be mentioned in all the sheets. Drawing produced should be well readable and self-explanatory.)	temple at halebid) South hindu or Dravidian style elements and characteristic features (shore temple at mahabalipuram, brihadesvar temple at tanjavur, temple of Madurai)
48-49	Project work / site visit <ul style="list-style-type: none"> • Project work on a single floor residence with furniture layout – plan, elevation and section (single line diagram to be made available) • Site visit to any of the construction site / study tour to historical monuments to observe the details 		
50-51	Revision		
52	Examination		

Note: -

1. Some of the sample project works (indicative only) are given against each semester.
2. Instructor may design their own project and also inputs from local industry may be taken for designing such new project.
3. The project should broadly cover maximum skills in the particular trade and must involve some problem solving skill.
4. If the instructor feels that for execution of specific project more time is required than he may plan accordingly to produce part/ sub-drawings in appropriate time i.e., may be in the previous semester or during execution of normal trade practical.
5. Guest faculty/expert trainer may be engaged to impart training 3D software.
6. More emphasis to be given on video/real-life pictures during theoretical classes. Some real-life pictures/videos on the topics taught in this semester may be shown to the trainees to give a feel of industry & their future assignment.

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SYLLABUS FOR ARCHITECTURAL DRAUGHTSMAN TRADE			
THIRD SEMESTER - 06 Month			
Week No.	Reference Learning Outcome	Professional Skills (Trade Practical) With Indicative Hours	Professional Knowledge (Trade Theory)
53-54	<ul style="list-style-type: none"> Illustrate Design-Concept and visualization of design. Topic: Residential (single/double storied), Post office, Farm house 	Introduction to design 86. Design topic Residential (single/ double storied)/Post office/ farm house. (36 hrs) 87. Concept and visualization of design. (20 hrs) (Students should be able to understand the process of designing and the design project will go throughout the semester.	Factors considered in architectural design Approaches to planning Open planning Closed planning
55-56	<ul style="list-style-type: none"> Draw sanction drawing with local authority bye laws. 	Case study 88. Case study of similar project to be done. A complete project report also to be submitted. (56 hrs)	Factors considered in architectural design Circulation – horizontal circulation, through circulation, vertical circulation, open court circulation
57-59	<ul style="list-style-type: none"> Preliminary drawing of the Design project in AUTOCAD. 	Preliminary drawing 89. Drawing to be prepared by trainees in AUTOCAD based on design project after analyzing the requirement and area analysis. (12 hrs) 90. Initial sketches/preliminary drawings manually. (15 hrs) 91. Sketches of the plan. (10 hrs) 92. Front elevation and one side elevation. (12 hrs) 93. Section through staircase or toilet. (20 hrs) 94. Site plan with landscaping. (15 hrs)	Environmental factors considered in architectural design Orientation of building Effects of wind Window positioning Space designation Proportionately defined rooms
60	<ul style="list-style-type: none"> Read and Interpret structural drawing 	95. RCC slab details (13 hrs) 96. Column foundation (15 hrs)	Reading and interpretation of structural drawing. One way slab, two way slab. Single reinforced beam. Double reinforced beam. Column foundation. Stair case Waist slab.

61-63	<ul style="list-style-type: none"> Draw 3 D model by sketch up software along with rendering, walkthrough, animated view. 	Introduction to 3D in sketch-up software 97. Setup, new document, open, save and close (10 hrs) 98. Styles colors and materials (20 hrs) 99. Layers (20 hrs) 100. Practice or project in sketch up (34 hrs)	-do-
64-65	37. Draw details of different types of doors.	Special doors 101. Details of revolving doors. (12 hrs) 102. Details of sliding doors. (14 hrs) 103. Details of metal doors. (12 hrs) 104. Details of rolling steel shutter doors or rolling grill doors. (18 hrs)	Special doors Louvered doors, collapsible doors, rolling steel shutter door, revolving door, sliding door, metal doors
66-67	38. Draw details of different types of windows	Special windows 105. Details of sliding windows. (10hrs) 106. Details of metal windows. (12 hrs) 107. Details of bay windows. (12 hrs) 108. Details of UPVC windows. (10 hrs) 109. CRCA sheets / Pressed steel windows. (12 hrs)	Special windows Bay windows, dormer windows, sliding windows, metal windows
68-69	39. Draw details of roofs and roof covering	Roof and roof coverings 110. Details of lean to roof. (10 hrs) 111. Details of couple or span roof. (10 hrs) 112. Details of king post truss. (10 hrs) 113. Details of queen post truss. (10 hrs) 114. Methods of laying and fixing AC sheets to different types of purlins. (16 hrs)	Roof and roof coverings Technical terms Classification of pitched roof – lean to roof, couple roof, closed couple roof, collar roof, scissor roof, king post truss, queen post truss
70-71	<ul style="list-style-type: none"> Prepare final design drawings in AUTOCAD. 	Final design 115. All floor plans rendered with furniture layout. (12 hrs) 116. Front elevation and one	Roof covering materials – wooden shingles, asbestos cement sheets, galvanized corrugated iron sheets, asphaltic

		<p>side elevation rendered. (12 hrs)</p> <p>117. Section through stairs/toilet rendered (12 hrs)</p> <p>118. Final site plan with landscape elements rendered. (20 hrs)</p> <p>(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)</p>	roofing sheets
72-73	<ul style="list-style-type: none"> Draw working drawing set to the site to execution. 	<p>Working drawing</p> <p>119. All floor plans working drawing showing all dimensions of rooms and column grids with door window schedule and details if any. (24 hrs)</p> <p>120. All four elevations with floor heights, lintel heights, sill heights and details if any. (16 hrs)</p> <p>121. Section through staircase or toilet with complete details. (16 hrs)</p>	
74-75	<p>Project work / site visit</p> <p>Broad Area:</p> <p>a) Compiling and final submission of Project work</p> <p>b) Site visit to any of the construction site to observe the details</p>		
76-77	Revision		
78	Examination		

Note: -

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- Instructor may design their own project and also inputs from local industry may be taken for designing such new project.
- The project should broadly cover maximum skills in the particular trade and must involve some problem solving skill.
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- Guest faculty/expert trainer may be engaged to impart training 3D software.

6. *More emphasis to be given on video/real-life pictures during theoretical classes. Some real-life pictures/videos on the topics taught in this semester may be shown to the trainees to give a feel of industry & their future assignment.*



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SYLLABUS FOR ARCHITECTURAL DRAUGHTSMAN TRADE			
FOURTH SEMESTER – 06 Month			
Week No.	Reference Learning Outcome	Professional Skills (Trade Practical) With Indicative Hours	Professional Knowledge (Trade Theory)
79-81	<ul style="list-style-type: none"> • Draw the Anthropometrics & ergonomics of commercial building. • Draw Standard sizes of outdoor movements like swimming pool, basketball court, badminton court, play area etc. 	<p>Case study</p> <p>122. Case study of project like small scale residential apartment/primary school/small office design for 50 people to be done. (20 hrs)</p> <p>Anthropometrics of commercial building</p> <p>123. Furniture design, its standard sizes and area required around for movement and height (office layout, reception layout, cabin layout, swimming) (34 hrs)</p> <p>124. Standard sizes of outdoor movements like swimming pool, basketball court, badminton court, play area etc. (30 hrs)</p>	<p>Case study</p> <p>A complete project report also to be submitted with all plans and photographs and details of the given project</p>
82-84	<ul style="list-style-type: none"> • Prepare design and the site plan with landscape of Residential Apartment/primary school in AUTOCAD 	<p>Preliminary drawing</p> <p>125. Drawing to be prepared by trainees in AUTOCAD based on design project after analyzing the requirement and area analysis. (12 hrs)</p> <p>126. Initial sketches/preliminary drawings manually. (15 hrs)</p> <p>127. Sketches of the plan. (10 hrs)</p> <p>128. Front elevation and one side elevation. (12 hrs)</p>	<p>Climatic responsive design</p> <p>Study of climates in India Sun path diagram and orientation of building with respect to the climate. Positioning of windows and open spaces as per climatic need Fundamentals of climate responsive planning Passive solar design.</p>

		<p>129. Section through staircase or toilet. (20 hrs)</p> <p>130. Site plan with landscaping. (15 hrs)</p>	
85-87	<ul style="list-style-type: none"> Draw joints in structures (viz. Details of construction joints at various positions, Details of expansion joints in walls, roof) 	<p>Joints in structure</p> <p>131. Details of construction joints at various positions. (56 hrs)</p> <p>132. Details of expansion joints in walls, roof. (28 hrs)</p>	<p>Expansion joints and construction joints</p> <p>Need for expansion joints in building</p> <p>Construction joints – Contraction joints, isolation joints, dummy joints, sliding joints. position of construction joints</p> <p>Expansion joints in walls and roofs, spacing of expansion joints, materials used in expansion joints</p>
88-94	<ul style="list-style-type: none"> Prepare 3D model and BOQ using BIM software (REVIT ARCHITECTURE) 	<p>133. Preparation of 3D model and BOQ using BIM software like Revit, etc. (35 hrs)</p> <p>134. Creating 3D model from 2D plane. (35 hrs)</p> <p>135. Generation of surfaces. (30 hrs)</p> <p>136. Material editor. (30 hrs)</p> <p>137. Lighting and rendering. (32 hrs)</p> <p>138. Quantity calculation of materials. (34 hrs)</p>	-do-
95-96	<ul style="list-style-type: none"> Perform rendering in Photoshop (Convert the drawings in pdf and then render it in photoshop with necessary details) 	<p>Rendering in Photoshop</p> <p>139. Convert the floor plans, elevation, section and 3d views in pdf and then render the drawings in photoshop with necessary details. (56 hrs)</p>	<p>Green Architecture / sustainable architecture</p> <p>Green building and its importance</p> <p>Benefits of green building</p> <p>Fundamentals of green building</p> <p>Material and resources</p> <p>Water efficiency</p>
97-99	<ul style="list-style-type: none"> Prepare Working drawing Kitchen layout, Electrical layout, Plumbing Layout DWV details 	<p>140. Kitchen layout. (22 hrs)</p> <p>141. Electrical layout. (22 hrs)</p> <p>142. Plumbing Layout. (22 hrs)</p> <p>143. DWV details. (18 hrs)</p>	<p>Energy conservation</p> <p>Sustainable site selection</p> <p>Green building rating system – LEED/ GRIHA</p>

100-101	Project work / site visit Broad Area: <ol style="list-style-type: none"> Compiling and final submission of Project work Study tour to historical places to familiarize culture and heritage.
102-103	Revision
104	Examination

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- Guest faculty/expert trainer may be engaged to impart training 3D software.*
- More emphasis to be given on video/real-life pictures during theoretical classes. Some real-life pictures/videos on the topics taught in this semester may be shown to the trainees to give a feel of industry & their future assignment*



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9. SYLLABUS - CORE SKILLS

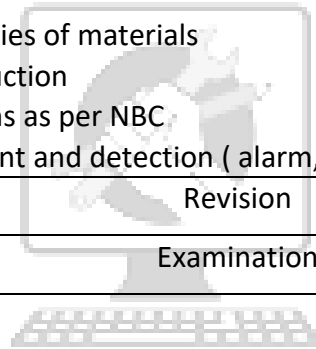
9.1 CORE SKILL – WORKSHOP CALCULATION & SCIENCE

Week No.	Workshop Calculation and Science
1st Semester	
Building materials and Mathematics	
01 - 02	<ul style="list-style-type: none"> Applied trade problems – conversion of scales (1:5, 1:10, 1:20, 1:25, 1:30, 1:50, 1:100, 1:200, 1:500)
03 - 05	<ul style="list-style-type: none"> Conversions of feet and inch to mts, cms, mm, hectares into acres, sqm. to sft, cum. to cft
06 - 07	<p>Bricks</p> <ul style="list-style-type: none"> Classification of bricks Properties and uses of bricks Characteristics of good brick Modular bricks
08 - 09	<p>Stones</p> <ul style="list-style-type: none"> Classification of rocks Properties and Uses of stone Characteristics of good building stone
10	<p>Lime</p> <ul style="list-style-type: none"> Definition, classification, properties and uses of lime
11	<p>Surkhi and sand</p> <ul style="list-style-type: none"> Definition and uses
12	<p>Cement</p> <ul style="list-style-type: none"> Definition, composition, types, properties and uses
13	<p>Mortar & Plastering</p> <ul style="list-style-type: none"> Definition, function, types, uses and proportion of mortar
14 - 15	<p>Concrete</p> <ul style="list-style-type: none"> Definition, proportions, properties and uses, grades (M20, M15, M35 etc)
16 - 17	<p>Timber</p> <ul style="list-style-type: none"> Structure of timber, varieties of Indian timber with characteristics and uses Defects in timber Requirement of good timber
18 - 23	<p>Mensuration</p> <ul style="list-style-type: none"> Problems related to triangles, rectangle, square, circle, regular polygon etc
24	Revision
25 - 26	Examination
2nd Semester	
Building materials and Bye laws	
01 – 03	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, verandah
04 - 05	<p>FAR – floor area ratio</p> <ul style="list-style-type: none"> • FAR and ground coverage as per area of the plot. • Minimum setbacks as per plot size <p>Area requirement</p> <ul style="list-style-type: none"> • Minimum area requirement of parts of building – plinth, lobby, verandah, balcony, habitable rooms, kitchen, bath rooms, WC, mezzanine, storage, garage, basement, lighting and ventilation in rooms, ventilating shaft, height of floor, lift and exit requirements
06-07	<p>Calculation of area</p> <ul style="list-style-type: none"> • Floor area calculation, covered area, built up area, carpet area, FAR, plot area, ground coverage • Related problems for the complete area calculation of residence as per bye laws
08 - 09	<p>Paint and polishing</p> <ul style="list-style-type: none"> • Paint – types, characteristics and procedure • Polishing – types, characteristics and procedure (lacquer, melamine, deco, French polish, poly urethane polish)
10	<p>Glass</p> <ul style="list-style-type: none"> • Definition, types and uses
11-12	<p>Metal and steel</p> <ul style="list-style-type: none"> • Types, properties and uses
13-14	<p>Aluminum, UPVC</p> <ul style="list-style-type: none"> • Definition, types and uses
15-18	<p>anthropometrics</p> <p>Interiors -Furniture design, its standard sizes and area required around for movement and height (living room, bed room, kitchen, dining, toilet)</p>
19-21	<p>Trigonometry</p> <p>Ratio, Tables, degree, grade and radian. Calculation of height and distance with help of trigonometric formulae. Application of trigonometry in determining the areas of polygons and solution of triangle</p>
22-23	<p>Survey</p> <ul style="list-style-type: none"> • Objective of surveying • Types of surveying. • Contours –Use of contour for alignment of road and placement of building. • Interpretation and reading of survey drawing. (Topic to be limited for the basic understanding of the trainees.)
24	Revision
25 - 26	Examination
3rd Semester	
Estimation and specifications	
01 – 02	Introduction to estimation

	<ul style="list-style-type: none"> • Different methods of calculating quantities – Centre line, in to in – out to out method
03 - 04	Types of estimation <ul style="list-style-type: none"> • Types of estimation • Performa's used in estimation • Abstract estimation • Material statement • Unit of measurement
05 - 06	Preliminary estimation 101) Problems related to preliminary estimation of building
07 - 14	Detailed estimation <ul style="list-style-type: none"> • Excavation • Footings • Super structure • Concrete works (lintel, beam, column, slab) • Roofing – flat roof • Flooring • Doors and windows • Plastering
15 - 18	Specifications <ul style="list-style-type: none"> • Importance of specifications • Objectives of specifications • Detailed specifications for various works
19 - 23	Rate analysis <ul style="list-style-type: none"> • Rate analysis of items (concrete, brick work, wood work, plastering, flooring, door and windows) including rate of labor and materials, sundries, contractors profit etc as per standards
24	Revision
25 - 26	Examination
4th Semester	
Bye laws, sanitation and mechanical services	
01 – 03	Water supply system <ul style="list-style-type: none"> • Technical terms • Quantity of water consumptions for various buildings like – residential, restaurants, schools, service station, swimming pools, hotel, etc • Water supply for WC, kitchen sink, bathtub, etc • Water distribution system in domestic buildings
04 – 06	Bye laws for high rise buildings <ul style="list-style-type: none"> • Minimum setbacks for high rise buildings other than residential • Parking standards • Basement regulation • Commercial centre max coverage, FAR and height • Exit requirements, ramps, corridors, lift and escalators, fire safety norms
07 – 09	Sanitation and fittings

	102) Technical terms 103) Methods of sanitation – conservancy method and water carriage method 104) Ablution fittings – wash basin, sink, bath tub, flushing cistern 105) Soil fittings – water closet, urinals, traps
10 – 13	Drainage <ul style="list-style-type: none"> • Plumbing systems – two pipe system, one pipe system, single stack system • Manhole, inspection chamber, gully trap, septic tank
14 – 17	Rain water harvesting <ul style="list-style-type: none"> • Purpose, advantage, system set up and various process • Today’s need for rain water harvesting and its implications
18 - 21	Mechanical services <ul style="list-style-type: none"> • HVAC – window unit, split unit, duct able unit, chilled beam system • Lifts and escalators
22 - 23	Fire protection <ul style="list-style-type: none"> • Definitions • Fire resisting properties of materials • Fire resistant construction • Firefighting provisions as per NBC • Firefighting equipment and detection (alarm, sprinkler system etc)
24	Revision
25 - 26	Examination



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9.2 EMPLOYABILITY SKILL

1 st Semester	
1. English Literacy	
Duration : 20 Hrs Marks : 09	
Pronunciation	Accentuation (mode of pronunciation) on simple words, Diction (use of word and speech)
Functional Grammar	Transformation of sentences, Voice change, Change of tense, Spellings.
Reading	Reading and understanding simple sentences about self, work and environment
Writing	Construction of simple sentences Writing simple English
Speaking / Spoken English	Speaking with preparation on self, on family, on friends/ classmates, on know, picture reading gain confidence through role-playing and discussions on current happening job description, asking about someone's job habitual actions. Cardinal (fundamental) numbers ordinal numbers. Taking messages, passing messages on and filling in message forms Greeting and introductions office hospitality, Resumes or curriculum vita essential parts, letters of application reference to previous communication.
2. I.T. Literacy	
Duration : 20 Hrs Marks : 09	
Basics of Computer	Introduction, Computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down of computer.
Computer Operating System	Basics of Operating System, WINDOWS, The user interface of Windows OS, Create, Copy, Move and delete Files and Folders, Use of External memory like pen drive, CD, DVD etc, Use of Common applications.
Word processing and Worksheet	Basic operating of Word Processing, Creating, opening and closing Documents, use of shortcuts, Creating and Editing of Text, Formatting the Text, Insertion & creation of Tables. Printing document. Basics of Excel worksheet, understanding basic commands, creating simple worksheets, understanding sample worksheets, use of simple formulas and functions, Printing of simple excel sheets.
Computer Networking and Internet	Basic of computer Networks (using real life examples), Definitions of Local Area Network (LAN), Wide Area Network (WAN), Internet, Concept of Internet (Network of Networks), Meaning of World Wide Web (WWW), Web Browser, Web Site, Web page and Search Engines. Accessing the Internet using Web Browser, Downloading and Printing Web Pages, Opening an email account and use of email. Social media sites and its implication. Information Security and antivirus tools, Do's and Don'ts in Information Security, Awareness of IT - ACT, types of cyber crimes.

3. Communication Skills		Duration : 15 Hrs Marks : 07
Introduction to Communication Skills	<p>Communication and its importance</p> <p>Principles of Effective communication</p> <p>Types of communication - verbal, non verbal, written, email, talking on phone.</p> <p>Non verbal communication -characteristics, components-Para-language</p> <p>Body language</p> <p>Barriers to communication and dealing with barriers.</p> <p>Handling nervousness/ discomfort.</p>	
Listening Skills	<p>Listening-hearing and listening, effective listening, barriers to effective listening guidelines for effective listening.</p> <p>Triple- A Listening - Attitude, Attention & Adjustment.</p> <p>Active Listening Skills.</p>	
Motivational Training	<p>Characteristics Essential to Achieving Success.</p> <p>The Power of Positive Attitude.</p> <p>Self awareness</p> <p>Importance of Commitment</p> <p>Ethics and Values</p> <p>Ways to Motivate Oneself</p> <p>Personal Goal setting and Employability Planning.</p>	
Facing Interviews	<p>Manners, Etiquettes, Dress code for an interview</p> <p>Do's & Don'ts for an interview.</p>	
Behavioral Skills	<p>Problem Solving</p> <p>Confidence Building</p> <p>Attitude</p>	
2nd Semester		
4. Entrepreneurship Skills		Duration : 15 Hrs Marks : 06
Concept of Entrepreneurship	<p>Entrepreneur - Entrepreneurship - Enterprises:-Conceptual issue</p> <p>Entrepreneurship vs. management, Entrepreneurial motivation.</p> <p>Performance & Record, Role & Function of entrepreneurs in relation to the enterprise & relation to the economy, Source of business ideas, Entrepreneurial opportunities, The process of setting up a business.</p>	
Project Preparation & Marketing analysis	<p>Qualities of a good Entrepreneur, SWOT and Risk Analysis. Concept & application of PLC, Sales & distribution Management. Different Between Small Scale & Large Scale Business, Market Survey, Method of marketing, Publicity and advertisement, Marketing Mix.</p>	
Institutions Support	<p>Preparation of Project. Role of Various Schemes and Institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non financing support agencies to familiarizes with the Policies /Programmes</p>	

	& procedure & the available scheme.
Investment Procurement	Project formation, Feasibility, Legal formalities i.e., Shop Act, Estimation & Costing, Investment procedure - Loan procurement - Banking Processes.
5. Productivity	
Duration : 10 Hrs Marks : 05	
Benefits	Personal / Workman - Incentive, Production linked Bonus, Improvement in living standard.
Affecting Factors	Skills, Working Aids, Automation, Environment, Motivation - How improves or slows down.
Comparison with developed countries	Comparative productivity in developed countries (viz. Germany, Japan and Australia) in selected industries e.g. Manufacturing, Steel, Mining, Construction etc. Living standards of those countries, wages.
Personal Finance Management	Banking processes, Handling ATM, KYC registration, safe cash handling, Personal risk and Insurance.
6. Occupational Safety, Health and Environment Education	
Duration : 15 Hrs Marks : 06	
Safety & Health	Introduction to Occupational Safety and Health importance of safety and health at workplace.
Occupational Hazards	Basic Hazards, Chemical Hazards, Vibroacoustic Hazards, Mechanical Hazards, Electrical Hazards, Thermal Hazards. Occupational health, Occupational hygienic, Occupational Diseases/ Disorders & its prevention.
Accident & safety	Basic principles for protective equipment. Accident prevention techniques - control of accidents and safety measures.
First Aid	Care of injured & Sick at the workplaces, First-Aid & Transportation of sick person.
Basic Provisions	Idea of basic provision legislation of India. safety, health, welfare under legislative of India.
Ecosystem	Introduction to Environment. Relationship between Society and Environment, Ecosystem and Factors causing imbalance.
Pollution	Pollution and pollutants including liquid, gaseous, solid and hazardous waste.
Energy Conservation	Conservation of Energy, re-use and recycle.

Global warming	Global warming, climate change and Ozone layer depletion.
Ground Water	Hydrological cycle, ground and surface water, Conservation and Harvesting of water.
Environment	Right attitude towards environment, Maintenance of in -house environment.
7. Labour Welfare Legislation	
	Duration : 05 Hrs Marks : 03
Welfare Acts	Benefits guaranteed under various acts- Factories Act, Apprenticeship Act, Employees State Insurance Act (ESI), Payment Wages Act, Employees Provident Fund Act, The Workmen's compensation Act.
8. Quality Tools	
	Duration : 10 Hrs Marks : 05
Quality Consciousness	Meaning of quality, Quality characteristic.
Quality Circles	Definition, Advantage of small group activity, objectives of quality Circle, Roles and function of Quality Circles in Organization, Operation of Quality circle. Approaches to starting Quality Circles, Steps for continuation Quality Circles.
Quality Management System	Idea of ISO 9000 and BIS systems and its importance in maintaining qualities.
House Keeping	Purpose of House-keeping, Practice of good Housekeeping.
Quality Tools	Basic quality tools with a few examples.

LIST OF TOOLS & EQUIPMENT		
ARCHITECTURAL DRAUGHTSMAN		
S No.	Name of items	Quantity
A. THEORY ROOM & DRAWING HALL FOR 20 TRAINEES AND ONE INSTRUCTOR		
1.	Dual Desk	**12 No.
2.	Drawing Boards measuring 1250mm x900mm fixed over adjustable stand	**20+1Sets
3.	Draughtsman stool with back (revolving type)	**20 No.
4.	Students Lockers – with 8 compartments	3 No.
5.	Chest of Drawers	4 No.
6.	Steel book case (with lockable glass shutters)	1 No.
7.	Instructor’s table with glass top	2 No.
8.	Revolving Chair for Class room	2 No.
9.	Instructor’s revolving with arm 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	2 nos
14.	Air conditioner 2.0 tons (split / window unit) for theory and practical room	4 no
**Numbers may be increased depending on on-roll trainee’s strength and additional unit (if any).		
B. COMPUTER LAB FOR 20 TRAINEES AND ONE INSTRUCTOR		
15.	Personal computer with LCD monitor and DVD re writer along with latest compatible OS	** 21 Sets
16.	Note book PC	2 Sets
17.	Plotter (A0 size)	1 no
18.	Multi-function Laser color printer A4 size	1 no
19.	Inkjet/laser jet color printer A3 size	1 no
20.	A3 color scanner with latest configuration	1 no
21.	700VA or higher offline UPS	21 no
22.	Computer work station (module type)	21no
23.	Printer table (module type)	3 no
24.	Operators revolving/normal chair with or without arms	21 no
25.	Instructors table with glass top	1 no
26.	Instructors revolving chair with arms	3 no

27.	Book shelf with glass shutter	1 no
28.	Air conditioner 2.0 tons (split / window type) for CAD lab	4 no
29.	LAN connectivity	As per requirement
30.	Internet connection	As per requirement
31.	Visualizer	1 no
32.	Vacuum cleaner	2 no
33.	LCD projector with screen / LED display with inbuilt computer with screen	1 no
34.	Interactive board	1 no
35.	CAD software / CAD with in built BIM	21 users
**it may be as per requirement i.e. equal to no. of trainees. Mouse & Keyboard should be treated as Raw Material.		
C. LIST OF CONSUMABLES FOR 20 TRAINEES AND ONE INSTRUCTOR		
36.	Adjustable set square with beveled edge – 30 cm	20 + 1 sets
37.	Compass with Long arm & pen holder	20 + 1 Nos.
38.	Protractor – 15 cm	20 + 1 Nos.
39.	Graphic Pens	As per requirement
40.	Triangular Scale 30 cm (feet-inch, metric)	20 + 1 Nos.
41.	Clutch pencil – 0.5mm , 0.2 mm , 2mm.	20 + 1 Nos.
42.	Parallel Bar / T scale – 1250 mm long	20 +1 Nos.
43.	Plastic French curve with ink edge – set of 12	3 sets
44.	Flexi curve- 80cm	4 Nos.
45.	Furniture template 1:50, 1:100,1:200	20+1 Nos.
46.	Circular and oval template	20+1 Nos.
47.	Metric Tape-5M	20+1 Nos.
48.	Calculator	05 Nos
49.	Beam Compass with pen holder (rotring/steadler made)	02 Nos.
50.	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, Poster colours, painting brushes, Pencils (of various grades), Pencil Leads, Cello tape, Eraser, Drafting pens (like Rotering Isograph),

Mounboards 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.*

TOOLS & EQUIPMENT FOR EMPLOYABILITY SKILLS		
S. No.	Name of the Equipment	Quantity
1.	Computer (PC) with latest configurations and Internet connection with standard operating system and standard word processor and worksheet software	10 Nos.
2.	UPS - 500Va	10 Nos.
3.	Scanner cum Printer	1 No.
4.	Computer Tables	10 Nos.
5.	Computer Chairs	20 Nos.
6.	LCD Projector	1 No.
7.	White Board 1200mm x 900mm	1 No.

Note: - Above Tools & Equipments are not required, if Computer LAB is available in the institute.

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