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

COMPETENCY BASED CURRICULUM

WOOD WORK TECHNICIAN

(Duration: One Year)

CRAFTSMEN TRAINING SCHEME (CTS)

NSQF LEVEL: 2.5

SECTOR – WOOD AND CARPENTRY

CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE

Kolkata-700091

WOOD WORK TECHNICIAN

(Engineering Trade)

(Revised in August 2025)

Version: 3.0

CRAFTSMEN TRAINING SCHEME (CTS)

NSQF LEVEL – 2.5

Developed By

Ministry of Skill Development and Entrepreneurship

Directorate General of Training

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1. COURSE INFORMATION

During one-year duration of "Wood Work Technician" trade, a candidate is trained on Professional Skill, Professional Knowledge and Employability Skill related to job roles. In addition to this, a candidate is entrusted to undertake project work, extracurricular activities and on-the-job training to build up confidence. The broad components covered under Professional skill subject are as below: -

The trainee learns about elementary first aid, firefighting, environment regulation and housekeeping etc. The trainee identifies timber/ wood, apply measuring, marking and testing instrument and other holding and supporting hand tools. He will be able to use various saws and portable power saw machines for Ripping, cross cutting, Oblique sawing and curve cutting etc. He will be able to analyze the surface finish with exact sizing by planning operation and apply various shaving tools or portable power planning machine. The trainee can apply various paring tools and analyze and choose the positioning and employ holding device for chiseling with better finish. He will be able to identify and classify various types of joints, analyze and prepare correct joint at correct position, related with strength and appearance. He will be able to make small wooden job as per drawing with schedule sizes of timber or alternatives of timber i.e. FRP, MDF, FOAM using various hardware, analyze and use various carving tools and convert a wooden block/ piece into a decorative article. The trainee will be able to preserve wooden item through surface finishing with various processes such as painting, polishing, varnishing etc.

The trainee learns ripping, cross cutting, curve cutting etc. on band saw/ circular saw machine and grinding and setting of blade/ cutter. He can perform different operations on planning machine along with sharpening blades. (Range of operations – Surfacing, thickening, chamfering, edge bending etc.). The trainee can work on pedestal grinder (Range of operations – grinding of mushroom head, cutting edge of tools, drills, etc.). He can make holes of different sizes in correct location on woodwork; can perform different operations on wood turning lathe along with sharpening of cutting tools. The trainee can do different operations on Tenon and mortise machine, Sanding machine. He will be able to prepare different types of pattern, core box, core print etc. for moulding application with proper allowances and colour codes. Can produce component involving different operations of fitting and sheet metal work and check for functionality. The trainee will be able to prepare various roof truss, door and windows frame and shutters, assembling & fixing (wooden/ aluminium or PVC), Paint various door, windows frame, stair and furniture (wooden or aluminium), Prepare various type of wooden floor, partition wall etc. He will able to check, identify, analyze and repair the wooden job.

The trainee also undergoes two weeks project work at the end of year which gives them more practical exposure and helps to build up confidence level.

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 economy/ Labour market. The vocational training programmes are delivered under the aegis of Directorate General of Training (DGT). Craftsman Training Scheme (CTS) with variants and Apprenticeship Training Scheme (ATS) are two pioneer programmes of DGT for strengthening vocational training.

Wood Work Technician trade under CTS is one of the popular courses delivered nationwide through a network of ITIs. The course is of one-year duration. It mainly consists of Domain area and Core area. The Domain area (Trade Theory & Practical) impart professional skills and knowledge, while Core area (Employability Skills) impart requisite core skill, knowledge and life skills. After passing out of the training programme, the trainee is awarded National Trade Certificate (NTC) by DGT which is recognized worldwide.

Trainees broadly need to demonstrate that they are able to:

- Read and interpret technical parameters/ documentation, plan and organize work processes, identify necessary materials and tools.
- Perform task with due consideration to safety rules, accident prevention regulations and environmental protection stipulations.
- Apply professional knowledge & employability skills while performing the job and modification & maintenance work.
- Check the system specification and application software as per requirement of the design of job.
- Document the technical parameter related to the task undertaken.

2.2 PROGRESSION PATHWAYS

- Can join industry as Wood Work Technician and will progress further as Senior Technician, Supervisor and can rise to the level of Manager.
- Can become Entrepreneur in the related field.
- Can join Apprenticeship programme in different types of industries leading to National Apprenticeship certificate (NAC).
- Can join Crafts Instructor Training Scheme (CITS) in the trade for becoming instructor in ITIs.

- Can join Advanced Diploma (Vocational) courses under DGT as applicable.

2.3 COURSE STRUCTURE

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

S No.	Course Element	Notional Training Hours
1	Professional Skill (Trade Practical)	840
2	Professional Knowledge (Trade Theory)	240
3	Employability Skills	120
Total		**1200**
On the Job Training (OJT)/ Group Project *		150
Optional Courses**		240
Grand Total		**1590**

** The trainee has to undergo 150 hours of mandatory OJT (On the Job Training) at nearby industry or wherever industry not available then group project has to be done with the supervision of the trade instructor for every year.*

*** Trainees of one-year or two-year trade can also opt for optional courses of up to 240 hours in each year for obtaining 10th/ 12th class certificate from NIOS along with ITI certification, or, short term courses for extra skills/knowledge.*

2.4 ASSESSMENT & CERTIFICATION

The trainee will be tested for his/ her skill, knowledge and attitude during the period of course through formative assessment and at the end of the training programme through summative assessment as notified by the DGT from time to time.

a) The **Continuous Assessment** (Internal) 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 individual *trainee portfolio* as detailed in assessment guideline. The marks of internal assessment will be as per the formative assessment template provided on www.cstaricalcutta.gov.in or www.bharatskills.gov.in

b) The final assessment will be in the form of summative assessment. The All India Trade Test for awarding NTC will be conducted by DGT as per the guidelines. The pattern and marking structure

are being notified by DGT from time to time. **The learning outcome and assessment criteria will be basis for setting question papers for final assessment. The examiner during final examination will also check** individual trainee's profile as detailed in assessment guideline before giving marks for practical examination.

2.4.1 PASS REGULATION

For the purposes of determining the overall result, weightage of 100% is applied for six months and one-year duration courses and 50% weightage is applied to each examination for two years courses. The minimum pass percentage for Trade Practical and Formative assessment are 60% & for all other subjects is 33%.

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 assessment. Due consideration should be given while assessing for teamwork, avoidance/reduction of scrap/wastage and disposal of scrap/wastage as per procedure, behavioral attitude, sensitivity to environment and regularity in training. The sensitivity towards Occupational Safety, Health and Environment (OSHE) and self-learning attitude are to be considered while assessing competency.
Assessment will be evidence based, comprising some of 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
- Computer based multiple choice question examination
- Practical Examination

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

Marks Allotted during Assessment	Performance Level	Evidence
Marks between 60% to 75%	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.	• Demonstration of good skill in the use of hand tools, machine tools and workshop equipment. • 60-70% accuracy 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.
Marks above 75% to 90%	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.	• Good skill levels in the use of hand tools, machine tools and workshop equipment. • 70-80% accuracy 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.
Marks Above 90%	For performance in this grade, the 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.	• High skill levels in the use of hand tools, machine tools and workshop equipment. • Above 80% accuracy 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.

3. JOB ROLE

Brief Description of Job Roles:

Carpenter, General; makes, assembles, alters and repairs wooden structures and articles according to sample or drawing using hand or power tools or both. Studies drawing on sample to understand type of structure or article to be made and calculates quantity of timber required. Selects timber to suit requirements. Marks them to size using square, scriber etc. Saws, chisels and planes wooden pieces to required sizes and makes necessary joints such as half lap, Tenon mortice, dovetail etc. using saws, planes, mortising, chisels, drills and other carpentry hand or power tools as required. Checks parts frequently with square, foot rule, measuring tape etc. to ensure correctness. Assembles parts and secures them in position by screwing, nailing or doweling. Checks assembled structure with drawing or sample; rectifies defects, if any, and finishes it to required specifications. Alters, repairs or replaces components in case of old structures or articles in similar manner. May glue parts together. May smoothen and finish surface with sandpaper and polish. May fix metal fittings to structure and polish. May fix metal fittings to structure or article made. May calculate cost of furniture. May sharpen his own tools.

Carpenter, Construction; Carpenter, Construction; Carpenter Building makes, assembles, alters and repairs doors, windows, frames and other wooden fixtures of building using hand or power tools or both. Studies drawings or samples and calculates quantity of timber required. Saws oversize pieces by power or hand tools or collects lumbers for making various components. Plans two sides of above pieces, marks off dimensions using tri-square, scriber, pencil etc., and reduces them to required sizes by adzing, sawing and planning. Marks off different members cuts them as required and shapes and makes Tenon and mortise, half lap and other joints by sawing, chiselling, drilling and filling. Checks pieces frequently while sizing and shaping to ensure correctness. Assembles framework step by step by gluing, cramping, dowelling, nailing and screwing as required. Examines finished article for accuracy. Fits metal rods, hinges etc., to wood work where necessary and rectifies defects in fittings if any. Sharpens his own tools. May erect scaffoldings if necessary.

Plan and organize assigned work and detect & resolve issues during execution in his own work area within defined limit. Demonstrate possible solutions and agree tasks within the team. Communicate with required clarity and understand technical English. Sensitive to environment, self-learning and productivity.

Reference NCO-2015:

i) 7115.0100–Carpenter, General
ii) 7115.0200–Carpenter, Construction

Reference NOS:

i) FFS/N9427
ii) FFS/N9401
iii) FFS/N9402
iv) FFS/N9403
v) FFS/N9428
vi) FFS/N9429
vii) FFS/N9404
viii) FFS/N9405
ix) FFS/N9406
x) FFS/N9407
xi) FFS/N2217
xii) FFS/N9410
xiii) FFS/N9431
xiv) FFS/N9432
xv) FFS/N9411
xvi) FFS/N9433
xvii) CSC/N9401
xviii) CSC/N9402

4. GENERAL INFORMATION

Name of the Trade	**WOOD WORK TECHNICIAN**
Trade Code	DGT/1022
NCO – 2015	7115.0100, 7115.0200
NOS Covered	FFS/N9427, FFS/N9401, FFS/N9402, FFS/N9403, FFS/N9428, FFS/N9429 FFS/N9404, FFS/N9405, FFS/N9406, FFS/N9407, FFS/N2217, FFS/N9410 FFS/N9431, FFS/N9432, FFS/N9411, FFS/N9433, CSC/N9401, CSC/N9402
NSQF Level	2.5
Duration of the Trade	One Year
Entry Qualification	Passed 8th class examination
Minimum Age	14 years as on first day of academic session.
Eligibility for PwD	LD, CP, LC, DW, AA, DEAF, HH, AUTISM, ID, SLD
Unit Strength (No. Of Student)	24 (There is no separate provision of supernumerary seats)
Space Norms	120 Sq. m
Power Norms	8 KW
Instructors Qualification for	
1. Wood Work Technician Trade	B.Voc/Degree in Wood Science & Technology/ Manufacturing Science and Engineering/Mechanical Engineering from AICTE/UGC recognized Engineering College/ university with **one year of teaching or industry experience** in the Wood work field. **OR** 03 years Diploma in Mechanical Engineering from AICTE/ recognized board of technical education or relevant Advanced Diploma (Vocational) from DGT with **two years of teaching or industry experience** in Wood work field. **OR** NTC/NAC passed in the trade of “Wood Work Technician”/"Carpenter" with **three years of teaching or industry experience** in Wood work field. **Essential Qualification:** Regular/ RPL variants of National Craft Instructor Certificate (NCIC) in Wood Work Technician trade under DGT. ***NOTE: - Out of two Instructors required for the unit of 2(1+1), one must have Degree/Diploma and other must have NTC/NAC qualifications.***
2. Workshop Calculation & Science	B.Voc/Degree in Engineering from AICTE/UGC recognized Engineering College/ university with **one-year of teaching or industry experience.** **OR**

	03 years Diploma in Engineering from AICTE / recognized board of technical education with **two years of teaching or industry experience.** **OR** NTC/ NAC in any one of the engineering trades with **three years of teaching or industry experience.** **Essential Qualification:** Regular / RPL variants of National Craft Instructor Certificate (NCIC) in any one of the engineering trade or RoDA.
3. Engineering Drawing	B.Voc/Degree in Engineering from AICTE/UGC recognized Engineering College/ university with **one-year of teaching or industry experience.** **OR** 03 years Diploma in Engineering from AICTE / recognized board of technical education with **two years' teaching or industry experience.** **OR** NTC/ NAC in any one of the engineering/ Draughtsman group of trades with **three years of teaching or industry experience**. **Essential Qualification:** Regular / RPL variants of National Craft Instructor Certificate (NCIC) in any one of the engineering trades or RoDA.
4. Employability Skill	MBA/ BBA / Any Graduate/ Diploma in any discipline with **Two years of teaching or industry experience with short term ToT Course** in Employability Skills conducted by DGT institutions. (Must have studied English/ Communication Skills and Basic Computer at 12th / Diploma level and above) **OR** Existing Social Studies Instructors in ITIs with short term ToT Course in Employability Skills conducted by DGT institutions.
5. Minimum Age for Instructor	21 Years
List of Tools and Equipment	As per Annexure – I

5. LEARNING OUTCOME

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

5.1 LEARNING OUTCOME:

Sl. No.	NOS CODE	Learning Outcome	Duration		
			Practical	Theory	Total
1.	FFS/N9427	Identify timber / wood / Plywood, apply measuring, marking and testing instrument, Cutting Saws, shaving tools, paring Tools, Screwing Tools, abrading tools and other holding and supporting devices with following safety precautions.	50	10	60
2.	FFS/N9401	Identify and apply portable power saw and Mitre saw and Jig saw machines for Ripping, cross cutting, oblique sawing and curve cutting, Mitring etc.	25	5	30
3.	FFS/N9402	Analyze the surface finish with exact sizing by planning operations, with identifying and applying various shaving tools or portable power planning machine.	25	5	30
4.	FFS/N9403	Identify and apply various paring tools, analyze and choose the positioning and employ holding device for chiselling with better finish.	25	5	30
5.	FFS/N9428	Identify and classify various types of joints, analyze and prepare correct joint at correct position, related with strength and appearance.	75	15	90
6.	FFS/N9429	Make small wooden job as per drawing with schedule sizes of timber or alternatives of timber i.e., FRP, MDF, FOAM, WPC using various hardware.	95	25	120
7.	FFS/N9404	Analyze and identify various carving tools and convert a wooden block/ piece into a decorative article.	25	5	30

8.	FFS/N9405	Demonstrate Seasoning, Conversion and preservation of Timber, wooden item through surface finishing with various processes such as Painting, polishing & varnishing etc.	40	5	45
9.	FFS/N9406	Demonstrate ripping, cross cutting, curve cutting etc. on band saw/ circular saw machine and grinding and setting of blade/ cutter.	60	15	75
10.	FFS/N9407	Demonstrate different operations on Jointer/surface Planer/Thickness planer machine along with sharpening blades. (Range of operations – Surfacing, thickening, chamfering, edge bending etc.)	40	5	45
11.	FFS/N9408	Demonstrate working on pedestal grinding (Range of operations – grinding of mushroom head, cutting edge of tools, drills, etc.)	25	5	30
12.	FFS/N9408	Demonstrate working on pedestal /potable drilling machine, use of different types of drill bits, make holes of different sizes in correct location on woodwork.	25	5	30
13.	FFS/N9409	Demonstrate different operations on wood turning lathe along with sharpening of cutting tools.	25	5	30
14.	FFS/N9409	Demonstrate different operations on Tenon and mortise machine.	25	5	30
15.	FFS/N9409	Demonstrate different operations on Sanding machine.	25	5	30
16.	FFS/N2217	Demonstrate on Modular Kitchen (Domestic).	55	5	60
17.	FFS/N9410	Produce component involving different operations of fitting work and check for functionality.	25	5	30
18.	FFS/N9431	Prepare the layout and according to the area and create office and domestic modular furniture with proper wooden materials & hardware.	40	5	45
19.	FFS/N9432	Prepare various roof truss, door and windows frame, shutters, assembling & fixing (wooden, aluminium & PVC).	75	15	90

20.	FFS/N9411	Paint various door, windows frame, stair and furniture (wooden or Aluminium).	25	5	30
21.	FFS/N9433	Prepare various type of wooden floor, partition wall, and stair etc.	25	5	30
22.	FFS/N9433	Check, identify, analyze the design, Installation and repair the wooden/Aluminium/PVC job.	10	5	15
23.	CSC/N9401	Read and apply engineering drawing for different application in the field of work.		45	45
24.	CSC/N9402	Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study.		30	30
Employability Skills				120	120
Grand Total			**840**	**360**	**1200**

6. ASSESSMENT CRITERIA

LEARNING OUTCOMES	ASSESSMENT CRITERIA
1. Identify timber / wood / Plywood, apply measuring, marking and testing instrument, Cutting Saws, shaving tools, paring Tools, Screwing Tools, abrading tools and other holding and supporting devices with following safety precautions. (FFS/N9427)	• Demonstrate workshop safety & discipline. • Identify different types of wood/ timber. • Identify the measuring, marking, work holding and testing instrument, Cutting Saws, shaving tools, paring Tools, Screwing Tools, Abrading tools. • Mark as per drawing and measure dimensions for checking. • Demonstrate use of testing instrument and other useable hand tools.
2. Identify and apply portable power saw and Mitre saw and Jig saw machines for Ripping, cross cutting, oblique sawing and curve cutting, Mitring etc. (FFS/N9401)	• Select material and inspect visually for defects. • Mark the job as per drawing and check measurements before sawing. • Mark an angle with the aid of bevel square and mitre square for oblique sawing. • Identify and arrange the required tools for desired operations and make the job. • Perform Ripping/crosscutting/curve, sawing/ cutting operations according to the marking following safety norms. • Check for dimensional accuracy. • Avoid waste and plan for reuse/ dispose of the unused items.
3. Analyze the surface finish with exact sizing by planning operations, with identifying and applying various shaving tools or portable power planning machine. (FFS/N9402)	• Select material and appropriate planner for required surface finish and size. • Set planner with sharpened cutting iron and perform required planning operation to obtain required size and finish. • Plane across the grain and end grain. • Check the size, flatness, squareness and finish of the job as per drawing. • Demonstrate removal, sharpening and fitting of planner blade observing standard operating procedures.
4. Identify and apply various paring tools, analyze and choose the positioning and	• Arrange woods with vertical/ horizontal grains and required type of chisel for performing operation (chiselling across the grain) as per drawing.

employ holding device for chiselling with better finish. (FFS/N9403)	• Mark the work as per dimension of the drawing. • Perform chiselling as per drawing and ensure better finish. • Check the finished job as per drawing.
5. Identify and classify various types of joints, analyze and prepare correct joint at correct position, related with strength and appearance. (FFS/N9428)	• Choose exact type of joint to employ and arrange materials, tools and equipment to perform the operation. • Perform framing joint (Sawing and chiselling) as required maintaining dimensions. • Assemble different parts and check for correctness, strength and finishing.
6. Make small wooden job as per drawing with schedule sizes of timber or alternatives of timber i.e., FRP, MDF, FOAM, WPC using various hardware. (FFS/N9429)	• Arrange required material, tools etc. to make the job as per drawing. • Mark as per drawing. • Perform sawing, chiselling of different parts, prepare all the parts as per marking layout and check dimension. • Assemble different parts to make a complete job. • Overall finish and check dimensions as per drawing. • Avoid waste and plan for reuse/ dispose of the unused materials.
7. Analyze and identify various carving tools and convert a wooden block/ piece into a decorative article. (FFS/N9404)	• Plan for wood carving as per drawing and arrange for material and tools for the purpose. • Mark layout as per drawing. • Perform wood carving operation to make a piece of wood as per drawing. • Check for corrections as per drawing. • Finish the product by smoothing.
8. Demonstrate Seasoning, Conversion and preservation of Timber, wooden item through surface finishing with various processes such as Painting, polishing & varnishing etc. (FFS/N9405)	• Plan for air seasoning, artificial seasoning arrangement & preparation. • Plan for conversion of timber and preparation for preservation of timber. • Plan for finish the surface of wooden product as per requirement and arrange required items and tools. • Clean/ prepare surface for the purpose. • Smoothen surface applying proper procedure. • Apply varnish/ polish on the surface to get required finish. • Check the quality of finish.

9. Demonstrate ripping, cross cutting, curve cutting etc. on band saw/ circular saw machine and grinding and setting of blade/ cutter. (FFS/N9406)	• Plan and select the job and set up machine accessories at position to perform desired operation. • Check the saw or blade and cutter guard. • Set the job and perform desired operation with proper adjustment of table, guide, fence and blade guard. • Check the product shape, size and dimensions with the drawing. • Sharpen cutter or saw teeth and set teeth of saw.
10. Demonstrate different operations on Jointer/surface Planer/Thickness planer machine along with sharpening blades. (Range of operations – Surfacing, thickening, chamfering, edge bending etc.) (FFS/N9407)	• Plan and set the job and machine for surfacing and thickening operation. • Adjust the table, fence and blade guard as per the width and thickness of the job. • Perform desired operation and check the correctness as per drawing.
11. Demonstrate working on pedestal grinding (Range of operations – grinding of mushroom head, cutting edge of tools, drills, etc.) (FFS/N9408)	• Plan for offhand grinding with required safety norms. • Perform grinding operation to make required shape, size and dimension. • Check the work for its dimensional accuracy and cutting efficiency.
12. Demonstrate working on pedestal /potable drilling machine, use of different types of drill bits, make holes of different sizes in correct location on woodwork. (FFS/N9408)	• Plan and select material and machine for drill holes to make observing safety points. • Mark the job as per drawing. • Set the job and cutting tool properly. • Perform operation to make drill holes as per drawing. • Check dimensions for correctness.
13. Demonstrate different operations on wood turning lathe along with sharpening of cutting tools. (FFS/N9409)	• Plan and set the machine for desired turning operation. • Hold the job between centres or in other work holding devices. • Hold the tool and adjust tool rest • Perform required turning operation observing standard operating procedure. • Check dimensions and finish as per drawing.

14. Demonstrate different operations on Tenon and mortise machine. (FFS/N9409)	• Plan and set the Mortise machine for mortising operation and check sharpness of the tool. • Mark the mortise on the job, select and set the chisel on the machine. • Hold the job and adjust the table as per the depth and bench of mortise. • Make the mortise to the required size and check the job for correctness. • Plan and set the Tenoning machine for tenoning operation. • Mark the tenon on the job for tenon cutting. • Set the job on the tenoning machine and cut the hunched portion. • Check the job for correctness.
15. Demonstrate different operations on Sanding machine (FFS/N9409)	• Plan to perform and set the sanding machine for sanding operation. • Perform sanding operation. • Check the job for correctness.
16. Demonstrate on Modular Kitchen (Domestic) (FFS/N9430)	• Study the drawing and make a plan for making desired Cabinet. • Select proper material and tool for making Cabinet. • Prepare layout for Structure. • Make the material as per layout considering scale, and check the dimensions. • Perform Structuring the cabinet with Plywood material and finally finishing with the sunmica and hardware. • Check for accuracy and finishing of the job.
17. Produce component involving different operations of fitting work and check for functionality. (FFS/N9410)	• Study the drawing/ sketch and plan for the required steps of operation to produce the item. • Arrange required materials, tools and machineries for smooth performance of the operations. • Mark the job as per drawing. • Perform required operation to prepare the job as per drawing. • Check the dimensions of the product and its functionality.
18. Prepare the layout and according to the area and	• Study the drawing and make a plan for making desired Cabinet.

create office and domestic modular furniture with proper wooden materials & hardware. (FFS/N9431)	• Select proper material and tool for making Cabinet. • Prepare layout for Structure. • Make the material as per layout considering scale, and check the dimensions. • Perform Structuring the cabinet with Plywood material and finally finishing with the sunmica and hardware. • Check for accuracy and finishing of the job.
19. Prepare various roof truss, door and windows frame, shutters, assembling & fixing (wooden, aluminium & PVC). (FFS/N9432)	• Study the drawing/ sketch and plan for the required steps of operation to produce the item. • Arrange required materials, tools and machineries for smooth performance of the operations. • Mark the job and perform required operation to prepare the structure as per drawing. • Assemble the components to make a complete item. • Check the dimensions of the product and its functionality.
20. Paint various door, windows frame, stair and furniture (wooden or aluminium). (FFS/N9411)	• Plan and arrange materials and tools for painting wooden surface. • Remove old paint and/ or clean, smoothen and prepare the surface to be painted. • Prepare correct solution of primer/ paint. • Apply primer/ paint on the surface with correct procedure. • Check finishing of the work.
21. Prepare various type of wooden floor, partition wall, and stair etc. (FFS/N9433)	• Study the drawing/ sketch and plan for the required steps of operation to produce the item. • Arrange required materials, tools and machineries for smooth performance of the operations. • Mark the job and perform required operation to prepare the item as per drawing. • Assemble the components to make a complete item. • Check the dimensions of the product and its functionality.
22. Check, identify, analyze the design, Installation and repair the wooden/Aluminium/PVC job. (FFS/N9433)	• Prepare various wooden/ aluminum/ PVC windows design & check, identify, analyze, installation and repair the wooden/ aluminum/ PVC job. • Check the wooden/ Aluminium/PVC or like item and identify the repair/ reconditioning work to be done.

	• Plan for the repair/ reconditioning work and arrange required materials, tools and machineries for smooth performance of the work. • Perform the repair/ reconditioning work. • Check the item for its workability/ acceptability.
23. Read and apply engineering drawing for different application in the field of work (CSC/N9401)	• Read & interpret the information on drawings and apply in executing practical work. • Read & analyze the specification to ascertain the material requirement, tools and assembly/maintenance parameters. • Encounter drawings with missing/unspecified key information and make own calculations to fill in missing dimension/parameters to carry out the work.
24. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. (CSC/N9402)	• Solve different mathematical problems • Explain concept of basic science related to the field of study

SYLLABUS FOR WOOD WORK TECHNICIAN TRADE			
DURATION: ONE YEAR			
Duration	**Reference Learning Outcome**	**Professional Skills (Trade Practical)**	**Professional Knowledge (Trade Theory)**
Professional Skill 50Hrs; Professional Knowledge 10 Hrs	1. Identify timber / wood / Plywood, apply measuring, marking and testing instrument, Cutting Saws, shaving tools, paring Tools, Screwing Tools, abrading tools and other holding and supporting devices with following safety precautions.	1. Demonstrate first aid, fire safety equipment, different types of fire extinguisher and their application. 2. Identification of different wooden sample piece i.e. - soft wood & hard wood, wooden grains etc. & their applications. 3. Identification of wooden sample piece (Annual ring, knots, shakes & chicks etc.). 4. Demonstrate use of hand operated tools and showing different audio-visual clips. 5. Identification and use of different types of the measuring, marking and testing tools & their applications. 6. Identification and use of different types of work holding devices. 7. Demonstrate use of machinery and hand operated portable tools and their safety.	• Introduction of carpentry trade. • General discipline, workshop discipline & Housekeeping. • Safety precaution in the workshop and industrial safety. • Importance of P.P.E, Types of PPE and their application. • Introduction of timber, growth of timber trees, cross-section of exogenous tree trunk, types of trees, different part of a tree, Soft &hard wood, their differences. • Common Indian timbers. • Defects in timber, diseases of timber, knots, shakes, grains etc. • Introduction of carpentry hand tools, classification and uses of marking, work holding devices. • Measuring & testing tools.
Professional Skill 25 Hrs; Professional Knowledge 05 Hrs	2. Identify and apply portable power saw and Mitre saw and Jig saw machines for Ripping, cross cutting, oblique sawing and	8. Demonstrate the use of bench vice, bench hook, bench stop & their application. 9. Demonstrate different types of saws- ripping, cross cutting, curve cutting, oblique sawing.	• Type of bench vice and their uses. • Introduction of different saw and their uses. • Introduction of power circular saw and its use. • Type of special saw and its uses i.e. -compass saw,

	curve cutting, Mitring etc.	10. Use and practice Portable power circular saw. 11. Sharpen and set different type saw blade. 12. Demonstrate the use of country drill, hand drill, ratchet brace, Breast drill and hand augers & bits. 13. Demonstrate the use of portable electrical drill machine. 14. Demonstrate the Auger application.	coping saw, bow saw, fret saw. • Saw sharpening and sharpening tools. • Description of boring tools - Types, Parts, functions, size and application. • Description of portable electrical drill machine. • Drill bits, types, sizes etc. • Hand augers description, sizes of augers, application of hand augers.
Professional Skill 25 Hrs; Professional Knowledge 05 Hrs	3. Analyze the surface finish with exact sizing by planning operations, with identifying and applying various shaving tools or portable power planning machine.	15. Planning face, face edge and both ends. 16. Demonstrate the use of marking, mortise gauge etc. 17. Test the accuracy of flatness and twistness of the surface by using try square. 18. Demonstrate the use of winding strips, cross planning, edge planning. 19. Grinding and Sharpening process of the planer blade/ cutter. 20. Demonstration of portable power planer machine and its function.	• Type of different planes and their proper uses in woodwork - Description, function and its size, setting, knowledge of sharpening and uses etc. • Knowledge of using marking gauges. • Important instruments necessary for checking flatness and twist ness of surface. • Sharpening and grinding angle of cutter. • Portable power planer - useful in modern woodwork and new technology design.
Professional Skill 25 Hrs; Professional Knowledge 05 Hrs	4. Identify and apply various paring tools and analyze and choose the positioning and employ holding device for chiselling with better finish.	21. Demonstrate the use of different types of chisel, chiselling, chiselling along& across the grain. 22. Grind/ sharpen and honing of a chisel. 23. Demonstrate use of different types of striking tool, hammer and mallets. 24. Demonstrate the use of clamps ‘G’ or ‘C’, saw sharpening vice, carpentry vice etc.	• Different type chisels - Definition, identification, their uses. • Necessity of grinding and sharpening. • Striking tools- Definition, types, application. • Files - Types, uses • Care & maintenance of files • Function of work bench, bench vice, bench hook, etc.

Professional Skill 70 Hrs; Professional Knowledge 30Hrs	5. Identify and classify various types of joints, analyze and prepare correct joint at correct position, related with strength and appearance.	**Demonstration and making framing joint** 25. Single Mortise and tenon Joint. 26. Double tenon & mortise joint. 27. Plain hunched tenon and mortise joint. 28. Mitre corner tenon & mortise joint. 29. Task tenon mortise joint. 30. Bare faced tenon joint. **Demonstration and making Housing joints** 31. Full housing joint. 32. Bridle joint etc. 33. Stopped housing joint. 34. Dovetail housing joint. **Demonstration and making dovetail joint** 35. Single dovetail joint. 36. Common dovetail joint. 37. Lapped dovetail joint. 38. Secret mitre dovetail joint uses of dovetail template. Splay dovetail joint **Demonstration and Making broadening joints** 39. Simple butt joint by hard wood (100 mm width and 15mm thick). 40. Riveted butt joint on hard wood (100mm width and 25mm thick). 41. Pocket screw butt joint on hard wood (100mm width and 15mm thick). 42. Secret pocket screw butt joint on teak wood or hard wood (100mm width and 100mm thick).	• Seasoning of timber - Definition, advantage and disadvantage of seasoning. • Moisture content in timber and its effect on timber. • Characteristics of wood, physical and mechanical properties of wood. • Quality of good timber. • Define the classification of wooden joint. • Description of different types joint. • Uses of joint: Framing joint angle joint, broadening/ widening and lengthening, joint etc. • Preservation of timber. • Application of different types of preservation & Process of each treatment. • Definition of housing joint. • Different type of housing joint. • Uses of housing joint. • Description of different dovetail joints and their functions. • Uses of dovetail joint. • Glues - Types of glue and their uses. • Broadening joint description. • Types of broadening joint. • Application of broadening joint. • Setting of end side according to annual Rings as well as matching the grain stranding. • Advantage of adhesives use and their types. • Method of Dowel application.

		43. Glued butt joint with dowel by a wood (100mm width and 15mm thick). 44. Tongue and groove joint on hard wood (100mm width and 15mm thick). **Making lengthening joint** 45. End half lap joint on wood (50mm X 50mm). 46. End overlap joint by wood 150mm X 25mm. 47. End bends lap joint on wood (50mm X25mm). 48. Table scrat joint on wood (50mm X 50m). 49. Bevel end table & scarf joint on wood (50mm X 50m). 50. Hammer head scarf joint on wood (50mm X 50m). **Making of Frame using different type of joints –** 51. Stopped Tenon & mortise Joint on hard wood to make tea table frame to lock four legs, top rail and bottom rails. 52. Lapped half lap dovetail joint on bottom rails on hard wood. 53. Tongue & Groove joint on tabletop by hard wood as a broadening joint.	• Lengthening joint description. • Types of lengthening joint. • Application of different lengthening joint. • Setting of two tapper wedges. • Advantages of table & scarf joint. • Veneer, Plywood • Types of plywood • Advantage of plywood • Application of plywood, block board, laminated board, hard board, insulation board, mica etc.
Professional Skill 100Hrs; Professional Knowledge 10Hrs	6. Make small wooden job as per drawing with schedule sizes of timber or alternatives of timber i.e., FRP, MDF, FOAM, WPC using various hardware.	**Make small wall bracket –** 54. Make joint on hard wood to make small frame. 55. Stopped Tenon & Mortise joint on hard wood in the frame to set the selves. 56. Make selves by six pieces of hard wood with single lapped half lap dovetail joint with frame (two nos. of selves).	• Parts & terms of portable disc sander. • Application of portable disc sander. • Care & maintenance of disc sander. • Method of making a wooden partition. • Door frames. • Door & window panels.

		57. Four sides of chalk box. (100mm X 120mm X 100mm) locked with hard wood by common dovetail joint (3 pin). 58. Grooves on three sides. 59. Make the lid & base with Masonite with handle levelled with top. 60. Common dovetail joint apply to lock four sides of tray (400mm X 300mm X 200mm). 61. Bases made with ply wood (5mm thick) and make the handle. 62. Layout of stool and make cutting List for mass production. 63. Prepare standard height tapper legged stool as per layout. 64. Demonstrate application of adhesive. 65. Layout making for notice board or display board by hard board, plywood and insulation board. 66. Making a small rack by layout with hard wood and plywood. 67. Make Frame structure with the block board, layout as per the size and cutting by portable circular saw machine with Common dovetail joint used in the structure. (8 hrs.) 68. Painting and polishing or fixing sun mica with adhesive. 69. Setting glasses and hard works as on required location.	• Calculation of timber required for stool. • List out the sequence of operation of the job. • Timbers used in furniture work – describe Sal, teak, gamar, pine, deodar etc. • Properties and characteristics of different furniture wood. • Conversion and types of conversion. • Parallel sawing Radial sawing Quarter sawing Tangential sawing Process and advantage • Design of wooden wall unit uses in bed rood, dining hall, library, office, workshop classroom. (02hrs)

		70. Make a small table use of lock, hinges, hasp and staple etc. making a small box with sun mica top. (Mortise and tenon joint. 'T' half tap dovetail joint. Secret dovetail joint). (17 hrs.) 71. Uses sun mica and pest on the top of table. **<u>Demonstration on nailing screwing on job</u>** 72. Use selected nail for the table and small box. 73. Use selected screw for the table and small box. 74. Application of different types of Nails, screws etc.	• Uses of joint for small table to stranger strength. • Manufacturing process of various boards and sheets. • Types of hinges, Uses of hinges • Types of door lock & their different uses. Nails and screws – • Nail and screws – type, Uses etc. • Nut, bolts and washer - types and Uses • Lock hinges hasp and staple. • Knowledge of other fittings – types, sizes and lenses.
Professional Skill 25 Hrs; Professional Knowledge 05 Hrs	7. Analyze and identify various carving tools and convert a wooden block/ piece into a decorative article.	75. Demonstrate wood carving using carving tools, sharpen carving tools and finish by smoothing tools.	• Description of different carving tools. • Tools required for ornamental carving. • Properties of wood. • Preparation a bill of materials. • Estimate the material.
Professional Skill 40 Hrs; Professional Knowledge 08Hrs	8. Demonstrate Seasoning, Conversion and preservation of Timber, wooden item through surface finishing with various processes such as Painting, polishing & varnishing etc. 9.	76. Prepare surface for Painting. 77. Apply epoxy & paints. **Varnish surface of woodwork** 78. Prepare surface for varnishing by smoothing plane. 79. Prepare the surface for knots and interlock cross grain area using toothing & smoothing plane. 80. Smoothen surface by scraping with sandpaper or portable sander machine. 81. Varnish on finished surface. **Polishing of Furniture –** 82. Cleaning of furniture surface. 83. Application of French polish.	• Paints, ingredients of paints. • Name of the agent of paints. • Method of preparation of surface for staining. • Necessary tools and equipment required for staining. • Uses of different grade sandpaper. • Portable sander machine - uses • Preparation of putty and use. • Staining – type, process, methods applied for different timber. • Description & method of French polish. • Method of wax polish and its uses.

		84. Application of wax polishes. 85. Remove old polish and re-polish old furniture. 86. Prepare an estimation of wooden furniture.	• Methods of old furniture re-polish. • Estimation process of wooden furniture.
Professional Skill 60 Hrs; Professional Knowledge 14Hrs	10. Demonstrate ripping, cross cutting, curve cutting, brazing etc. on band saw/ circular saw machine and grinding and setting of blade/ cutter.	87. Demonstrate band saw machine with different parts & their functions. 88. Demonstration to the safety precaution with operational techniques. 89. Remove and refit band saw blades. Brazing of band saw blade with the brazing machine. 90. Grinding and setting operation of band saw blade. 91. Ripping & cross cutting operation on band saw machine with hard wood. 92. Curve cutting operation on hard board or soft wood or ply board by band saw machine. Curve cutting with thin material by fret saw machine. 93. Bevelling operation on hard wood/ soft wood. 94. Chamfering operation on hard wood/ soft wood/ ply board by bend saw machine. 95. Demonstrate circular saw machine, its parts and their operational techniques with safety precaution. 96. Remove and refit of circular saw blade. 97. Grinding and setting operation of the circular saw blade. 98. Ripping & cross cutting operation on hard wood/	• Describe constructional features of band saw machine. • Types of band saw machine. • Sizes of band saw machine. • Parts of band saw machine. • Function of band saw machine. • P.P.E for band saw machine • Operation of band saw machine. • Safety precaution of bad saw machine. • Care & maintenance of band saw machine with oiling & greasing. • Describe circular saw machine. • Types of circular saw machine. • Sizes of circular saw machine. • Identify the parts of circular saw machine. • Function of circular saw machine. • Different types of saw blades used in circular saw machine. • Safety precaution of circular saw machine. • Care & maintenance of circular saw machine with oiling & greasing. • Operation of portable type circular saw machine. • Safety precautions

		soft wood/ ply wood (not less than 12 mm) by circular saw machine. 99. Rebating & grooving operation on hard wood/ soft wood by circular saw machine. 100. Mitering operation on hard wood/ soft wood/ plywood (not less than 12 mm) 101. Demonstrate portable Circular saw machine with different parts & their functions. 102. Remove and refit of saw blade.	• P.P.E for the circular saw machine
Professional Skill 40 Hrs; Professional Knowledge 08Hrs	11. Demonstrate different operations on Jointer/surface Planer/Thickness planer machine along with sharpening blades. (Range of operations – Surfacing, thickening, chamfering, edge bending etc.)	103. Demonstrate Jointer/surface Planer machine, its parts and their operational techniques and safety precaution. 104. Remove and refit of cutter of planning machine. 105. Sharpening and honing operation of cutter of planning machine. 106. Surfacing operation on hard wood/ soft wood by planning machine. 107. Thickness operation on hard wood/ soft wood by planning machine. 108. Chamfering Operation 109. Edge bending operation on hard wood/ soft wood by planning machine.	• Describe of planning machine. • Types of planning machine. • Sizes of planning machine. • Parts of surface/thickness planning machine. • Function of surface/ thickness planning machine. • P.P.E for the surface/ thickness planning machine. • Operation of surface / thickness planning machine. • Safety precaution of surface / thickness planning machine. • Care & maintenance of surface / thickness planning machine • Oiling & greasing.
Professional Skill 25 Hrs; Professional Knowledge 05 Hrs	12. Demonstrate working on pedestal grinding (Range of operations – grinding of mushroom	110. Demonstrate pedestal grinding machine, its parts and their operational techniques with safety precautions.	• Pedestal grinding machine - Description, Types, Sizes, Parts, Function, Operation of pedestal grinding machine.

	head, cutting edge of tools, drills, etc.)	111. Demonstrate off hand grinding operation as per requirement of the trade. 112. Grind mushroom head, cutting edge of tools, drill bits and check correctness.	• Safety precaution and P.P.E for the pedestal grinding machine • Care & maintenance of pedestal grinding machine with oiling &greasing.
Professional Skill 25 Hrs; Professional Knowledge 05 Hrs	13. Demonstrate working on pedestal & portable drilling machine, use of different types of drill bits, make holes of different sizes in correct location on woodwork.	113. Demonstrate pedestal & portable drilling machine and its parts & their operational techniques and safety precaution. 114. Make different sizes of drill hole on wooden block/ job using straight/ taper shank drill bit. 115. Use of counter sinking bit on job. 116. Demonstrate care & maintenance.	• Pedestal & portable drilling machine - Description, Types, Sizes, Parts, Function, Operation of pedestal drilling machine. • Safety precaution and P.P.E for the pedestal drilling machine • Care & maintenance of pedestal drilling machine with oiling & greasing • Types of drill bits used in drill machine.
Professional Skill 25 Hrs; Professional Knowledge 05Hrs	14. Demonstrate different operations on wood turning lathe along with sharpening of cutting tools.	117. Demonstrate wood turning lathe, its parts & chisels sets with operational technique and safety precaution. 118. Remove, grind and refit cutting tools and set job. 119. Plain turning operation on hard wood/ soft wood by wood turning lathe. 120. Drilling, boring, taper turning & facing operation on hard wood/ soft wood by wood turning lathe. 121. Make chisel handle, table lamp stand, etc on wood turning lathe. 122. Internal turning operation using face plate.	• Wood turning lathe – Description, Types, Sizes, Parts, Function, Types, Operation of wood turning lathe. • Safety precaution and P.P.E for wood turning lathe. • Care & maintenance of wood turning lathe with oiling & greasing. • Types and application of set of chisels • Signature of cutting tools.
Professional Skill 25 Hrs; Professional Knowledge 05Hrs	15. Demonstrate different operations on Tenon and mortise machine.	123. Demonstrate working of mortise machine, its part, their operational techniques and safety precaution. 124. Adjust table along with feed and job holding.	• Mortise machine – Description, Types, Sizes, Parts, Function, Operation of mortise machine. • Safety precaution and P.P.E for mortise machine.

		125. Mortising operation on hard wood/ soft wood (300mmX50 mm X 25mm). 126. Remove and refit of chain & sprocket with the machine. 127. Make groove at the face or edge on the job.	• Care & maintenance of mortise machine with oiling & greasing • Calculation of timber, weight, area, volume etc.
Professional Skill 25 Hrs; Professional Knowledge 05 Hrs	16. Demonstrate different operations on Sanding machine.	128. Demonstrate working of different types Sanding machine, its part, their operational techniques and working safety precaution. 129. Operation on hard wood/ soft wood by using sanding machine.	• Sanding machine – Description, Types, Parts of sanding machine. • Safety precaution and P.P.E for sanding machine.
Professional Skill 60 Hrs; Professional Knowledge 10 Hrs	17. Prepare the layout and according to the area and create domestic modular kitchen with proper wooden materials & hardware.	130. Make a drawing as per plan for making desired Cabinet 131. Select proper material and tool for making Cabinet. 132. Prepare layout for Structure 133. Make the material as per layout considering scale and check the dimensions. 134. Perform Structuring the cabinet with Plywood material and finally finishing with the sunmica and hardware. 135. Check for accuracy and finishing of the job.	• Introduction of Modular Kitchen • Different hand tool including machineries. • Different allocation • Different Material and its characteristics, application. • Assemble Procedure. • Application of hardware. • Different types of timber used. • Types of Job dressing. • Application of Sunmica in different Colour contrast.
Professional Skill 25 Hrs; Professional Knowledge 05 Hrs	18. Produce component involving different operations of fitting work and check for functionality.	136. Mark and make hanging plate, corner plate, name plate, different types of clamps and angle plate by chipping, sawing filling, drilling, counter sinking etc.	**<u>General safety in fitting shop</u>** • Types of marking and cutting tools and their uses. (viz., marking block, chisels, hammer, hacksaw, files, etc.) • Uses and maintenance of tools – Steel rule, try

		137. Practice using nuts, bolts, washers, screws by drilling, taping and dieing. 138. Grind chisels, drills and check for correct cutting angle.	squares, scriber, divider, callipers and other tools. Marking table, marking block etc. • Application of bench vice, clamps. • Types of drill bits, counter boring tool, taps and dies used in fitting work. • Types of nuts, bolts, washers, machine screws etc.
Professional Skill 40 Hrs; Professional Knowledge 8 Hrs	19. Prepare the layout and according to the area and create office and domestic modular furniture with proper wooden materials & hardware.	**<u>Modular Furniture</u>** 139. Study the drawing and make a plan for making desired Cabinet. 140. Select proper material and tool for making Cabinet. 141. Prepare layout for Structure. 142. Make the material as per layout considering scale, and check the dimensions, check for accuracy and finishing of the job. 143. Perform Structuring the cabinet with Plywood material and finally finishing with the sunmica/ Laminate, and hardware.	• Introduction of Modular Furniture. • Different hand tool including machineries and application. • Different allocation. • Different material and its characteristics, application. • Assemble Procedure. • Application of hardware. • Different types of timber used. • Types of Job dressing. • Application of Sunmica in different Colour contrast.
Professional Skill 70 Hrs; Professional Knowledge 13 Hrs	20. Prepare various roof truss, door and windows frame, shutters, assembling & fixing (wooden, aluminium & PVC). 21.	144. Revision of basic joint related with building work. 145. Making door shutter. 146. Making panel door. 147. Making door glazed shutter. 148. Fitting moulding with glass. 149. Marking and making window frame and window shutter. 150. Use protection bar. 151. Roof trusses layout. 152. Make Model type king post and queen post.	• Introduction about building construction. • Different type door & windows and different size. • Different type panel used for panel shutter, glazed shutter. • Substitute of wood viz., block board, hard board etc. • Description of window frame and shutter • Uses of frame and shutter of window • Definition of roof trusses

		Prepare sliding window & 'Z' battened window by aluminum channel 153. Angular cutting of aluminium bar at different angle and size. 154. Aluminium channel bar joining by fibre glass 155. Fiber glass shutter fitted with aluminium channel. 156. Assembling and fixing of P.V.C door for kitchen and W.C bath. 157. Cutting angular wise P.V.C door frame. 158. Forming shape by joining adhesive and screwing. 159. P.V.C shutter door finish by adhesive and screwing. Assembling & fixing the PVC door.	• Terms of king post and queen post. • Description of aluminium • Anodising of the aluminium windows, channel, section etc. • Knowledge of different aluminium section, channels required for manufacturing the windows. • Drilling of aluminium bar and joining by screw and adhesive. • Knowledge of fibre glass • Introduce about rubber padding /gasket and aluminium wheel. • Uses of channel window which is involved in building construction. • Uses of P.V.C as substitute of wood. • Give more get-up and cheapest in price. • New style framing work. • Modern technologies follow up P.V.C moulding. • Advantages and disadvantages
Professional Skill 25 Hrs; Professional Knowledge 05 Hrs	22. Paint various door, windows frame, stair and furniture (wooden or aluminum).	160. Removal of old painting by application of chemical paint remover. 161. New painting for door, window, staircase, furniture, etc. 162. Plain and smoothing of door & window and staircase railing. 163. Apply Synthetic enamel primer on the new surface. 164. Apply synthetic enamel paint or oil paint on the priming surface as finishing coat.	• Apply of removing old painting by new chemical then after repainting on furniture • Uses of new painting and priming on furniture.

Professional Skill 35 Hrs; Professional Knowledge 10 Hrs	23. Prepare various type of wooden floor, partition wall and stair etc. 24. Check, identify, analyze the design, Installation and repair the wooden job.	165. Identification of simple floor construction. 166. Use the cogged joint for wooden floors. 167. Demonstrate different type basement floor single joint wooden floor and double joint wooden floor. 168. Make structure of wooden partition wall. 169. Repair and recondition furniture, door and window, staircase hand railing using laser tools.	• Purpose of using floor construction with different types of joist. • Basic principal of repairing work, door window, staircase rack etc. • Illustrate of nail screw bracket angle plate nut bolt, etc. • Economic factors and material estimates. • laser tools for measuring levels, types and their applications
Engineering Drawing			
Professional Knowledge ED- 45 Hrs.	25. Read and apply engineering drawing for different application in the field of work.	Introduction to Engineering Drawing and Drawing Instruments– • Conventions • Sizes and layout of drawing sheets • Title Block, its position and content • Drawing Instrument **Lines**-Types and applications in drawing Freeh and drawing of– • Geometrical figures and blocks with dimension • Transferring measurement from the given object to the sketches. • Free hand drawing of hand tools and measuring tools. **Drawing of Geometrical figures:** • Angle, Triangle, Circle, Rectangle, Square, Parallelogram. • Lettering & Numbering–Single Stroke. • Reading of dimension and Dimensioning Practice. • Different joints used in the Wood Work Technician trade. Concept and reading of Drawing • Concept of axes plane and quadrant • Concept of Orthographic and Isometric projections • Method of first angle and third angle projections (definition and difference) Reading of Job drawing related to Wood Work Technician trade.	
Workshop Calculation & Science			
Professional Knowledge WCS- 30 Hrs.	26. Demonstrate basic mathematical concept and principles to perform	**Unit, Fractions** Classification of unit system Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units Measurement units and conversion Factors, HCF, LCM and problems Fractions - Addition, substraction, multiplication & division	

	practical operations. Understand and explain basic science in the field of study.	Decimal fractions - Addition, subtraction, multiplication & division Solving problems by using calculator **Square root, Ratio and Proportions, Percentage** Square and square root Simple problems using calculator Applications of Pythagoras theorem and related problems Ratio and proportion Ratio and proportion - Direct and indirect proportions Percentage Percentage - Changing percentage to decimal and fraction **Material Science** Types metals, types of ferrous and non-ferrous metals Physical and mechanical properties of metals Properties and uses of timber **Mass, Weight, Volume and Density** Mass, volume, density, weight and specific gravity. Related problems for mass, volume, density, weight and specific gravity **Mensuration** Area and perimeter of square, rectangle and parallelogram Area and perimeter of Triangles Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder **Trigonometry** Measurement of angles Trigonometrical ratios
In-plant training / Project work viz. a. Pen stand b. Flower vase c. Drawing Board d. Notice Board e. Doors f. Windows, etc.		

SYLLABUS FOR CORE SKILLS
1. Employability Skills (Common for all CTS trades) (120 Hrs.)

Learning outcomes, assessment criteria, syllabus and Tool List of Employability Skills is provided separately in www.cstaricalcutta.gov.in / www.bharatskills.gov.in / www.dgt.gov.in

ANNEXURE-I

LIST OF TOOLS AND EQUIPMENT			
WOOD WORK TECHNICIAN (For batch of 24 trainees)			
S No.	**Name of the Tools & Equipment**	**Specification**	**Quantity**
A. TRAINEES TOOL KIT (For each additional unit trainees tool kit S no. 1-19 is required additionally)			
1.	Foot rule/steel tape	Two ft. Four-fold/6 mtrs.	24+1 nos.
2.	Steel rule	Twelve inches	24+1 nos.
3.	Marking Knife/ Scriber	200 mm length	24+1 nos.
4.	Try Square	200mm	24+1 nos.
5.	Bevel Square	150 mm	24+1 nos.
6.	Carpenter marking gauge		24+1 nos.
7.	Carpenter mortise gauge		24+1 nos.
8.	Hand Saw	450mm	24+1 nos.
9.	Tenon saw	300mm	24+1 nos.
10.	Metal Jack plane	335mmX 50mm cutter	24+1 nos.
11.	Metal smoothing plane	200mm X 50mm cutter	24+1 nos.
12.	Firmer/ Bevel edge Chisel	Bevel edge 6mm. 10, 15, 20 and 25mm width (5 nos.)	24+1 nos.
13.	Mortise chisel	06, 08, 10, 15mm (3 nos.)	24+1 nos.
14.	Screw driver	300mm	24+1 nos.
15.	Mallet	medium size	24+1 nos.
16.	Claw hammer	500 gm	24+1 nos.
17.	Oil stone	Carborundum universal silicon carbide combination rough and fine.	24+1 nos.
18.	Hand brush for cleaning	450mm	24+1 nos.
B. INSTRUMENT AND GENERAL SHOP OUTFIT			
INSTRUMENT			
19.	Measuring tape	3 meter	01no.
20.	Spring caliper (inside)	150 mm	04 nos.
21.	Spring caliper (outside)	150 mm	04 nos.
22.	Wing compass	300 mm	02 nos.
23.	Trammel Point	300 mm	02 pair

24.	Sprit level	300 mm	02 nos.
C. GENERAL SHOP OUTFIT			
25.	Rip saw	600 mm	04 nos.
26.	Cross cut saw	250 mm	02 nos.
27.	Key hole saw	250 mm	02 nos.
28.	Fret saw frame	150 mm	02 nos.
29.	Compass saw	350 mm	04 nos.
30.	Adze	500 gm	04 nos.
31.	Trying plane metal	450 mm X 60 mm Cutter	02 nos.
32.	Adjustable rebate plane	250 mm X meters x 9 mm Cutters	04 nos.
33.	Plough plane	with set of 8 cutter up to 12 mm Width	04 nos.
34.	Spoke shaves plane	50 mm Cutter	08 nos.
35.	Compass Plane	250 mm	04 nos.
36.	Router plane	197 X 42 mm	04 nos.
37.	Moulding plane set (Hand)		04 nos.
38.	Cabinet scraper	100 mm	04 nos.
39.	Gauge chisel, firmer,	6,8,10,12,16,20mm	08 sets
40.	Gauge chisel, scribing	6,8,10,12,16,20mm	08 sets
41.	Ball pein hammer	600 grs	04 nos.
42.	Cross pein hammer	600 grs	04 nos.
43.	Screw driver	450 mm	04 nos.
44.	Screw driver	250 mm	04 nos.
45.	Screw driver	150 mm	04 nos.
46.	Pincer	50 mm	04 nos.
47.	File half round	2nd cut 250 mm	08 nos.
48.	File half round	Wood rasp bastard250mm	08 nos.
49.	File slim taper	100 mm	12 nos.
50.	File slim taper	150 mm	12 nos.
51.	Card file (steel) wire brush for file	200 mm	04 nos.
52.	Hands drill	6 mm Capacities	08 nos.
53.	Country drill with bow (ball bearing type)	620 X 726 mm	04 nos.

54.	Ratchet brace	250 mm Swap	04 nos.
55.	Hand auger	10,12,14,16,18,20,22,25 mm	02 sets
56.	Centre bits	6,8,10,12	02 sets
57.	Expansion bit sets	218 X 171 mm	02 sets.
58.	Twist drill bits	6,8,10,12 mm	02 sets
59.	Counter sink bit rose type	12 mm	04 nos.
60.	Breast drill	6 mm. capacity	02 nos.
61.	Centre punch	5mm	04 nos.
62.	Snip straight	200 mm	04 nos.
63.	Oil cans	225 X 225 mm	02 nos.
64.	Combination side cutting pliers	250 X 250 mm	02 nos.
65.	Plunger saw set/ pistol grip type.	300 X 300 mm	02 nos.
66.	Number punch	12 mm.	02 sets
67.	Slip stone	100 mm	08 nos.
68.	Round crow bar	with chisel and claw end 1070 x 25mm	02 nos.
69.	' G' clamp	100 mm	08 nos.
70.	'G' clamp	150 mm	08 nos.
71.	'G' clamp	250 mm	04 nos.
72.	'T' bar cramp	0.6 meter	08 nos.
73.	'T' bar cramp	1.25 meter	04 nos.
74.	'T' bar cramp	1.75 meter	02 nos.
75.	Carpenter vice	250 mm jaws	25 24+1 nos.
76.	Saw sharpening vice	250 jaws	02 nos.
77.	Carving tools set		04 sets
78.	Goggles pair		02 nos.
79.	Glass cutter		02 nos.
80.	Nail punch		04 nos.
81.	Surface plate	600x 600 mm	01 no.
82.	Carpenter's work bench	2400x920x800 mm Height	08 nos.
83.	Blower		04 Nos.
84.	Grease gun		01 no.
85.	Spanner double ended	set of 14	01 no. of set

86.	Fire extinguisher	Arrange all proper NOCs and equipment from Municipal/Competent authorities.	01 no.
87.	Steel lockers, 8 Compartments, with Individual locks	1980 x 910 x 480 mm depth	03 nos.
88.	Steel Almirah with shelves	1980 x 910 x 480 mm depth	02 nos.
89.	Instructor table (half secretariat)		01 no.
90.	Instructor chair		02 nos.
91.	Stool		01 no.
92.	Chalk board with easel		01 no.
93.	Material rack		01 no.
94.	Face plate	16-inch dia	01 no.
D. GENERAL MACHINERY SHOPOUTFIT			
95.	Portable circular saw machine		02 nos.
96.	Portable planning machine		02 nos.
97.	Power drill machine		02 nos.
98.	Portable sander machine		01 no.
99.	Portable jig saw machine		02 nos.
100.	Portable router machine		01 no.
101.	Power screwdriver		02 nos.
102.	Combined surface and thickener		01 no.
103.	Circular saw machine	300 mm. dia.	01 no.
104.	'Lathe, wood turning	150 mm height of centres 1.75-meter bed, motorized complete with a set of turning tools	03 nos.
105.	Set of turning tools for above lathe machine		03 sets
106.	Tenoning machine (single ended)		01 no.
107.	Mortising machine (combine hollow chisel and chain)		01 no.
108.	Bench grinder	200 mm. whole D.E. pedestal	01 no.
109.	Drill machine	12 mm. Capacity	01 no.
110.	Portable electric drill	6 mm. Capacity (wolf type)	01 no.
111.	Drills chuck	12 mm capacities.	01 no.
112.	Portable disc sander	200 mm. Dia	01 no.
113.	Adjustable saw sharpener		01 no.
114.	Electric heater	1000/1500 w 1 nos.102. Electric blower (portable)	01 no.

115.	Moisture meter		01 no.
116.	Multi-tasking universal machine		01 no.
117.	Electrical drying oven (small type)		01 no.
118.	Band saw machine with provision		01 no.
119.	Brazing Machine		01 no.
120.	Fret saw machine		01 no.
121.	Mitre Saw Machine		As required
122.	Laser tool for measuring levels		01 no.
E. CLASS ROOM FURNITURE			
123.	Instructor's table and Chair (Steel)		1 set
124.	Students chairs with writing pads		25 24+1 nos.
125.	White -board size 1200mm X 900 mm		1 no.
126.	Instructors lap top with latest (vista & above) configuration pre-loaded with operating system. and MS Office package.		1 no.
127.	LCD projector /interactive smart board.		1 no.
128.	Small type compressor with spray painting system.		1no

Note:

1. *No additional items are required to be provided to the batch or unit working in the second shift except the items under the Trainees tool kit and lockers.*
2. *The trainee for the main trade will be sent to the different sections for allied trade training. Separate list of tools and equipment required for allied trades are not included in this list.*
3. *Internet facility is desired to be provided in the class room.*

ANNEXURE-II

The DGT sincerely acknowledges contributions of the Industries, State Directorates, Trade Experts, Domain Experts, trainers of ITIs, NSTIs, faculties from universities and all others who contributed in revising the curriculum.

Special acknowledgement is extended by DGT to the following expert members who had contributed immensely in this curriculum.

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ANNEXURE-III

ABBREVIATIONS	
CTS	Craftsmen Training Scheme
ATS	Apprenticeship Training Scheme
CITS	Crafts Instructor Training Scheme
DGT	Directorate General of Training
MSDE	Ministry of Skill Development and Entrepreneurship
NTC	National Trade Certificate
NAC	National Apprenticeship Certificate
NCIC	National Craft Instructor Certificate
LD	Locomotor Disability
CP	Cerebral Palsy
MD	Multiple Disabilities
LV	Low Vision
HH	Hard of Hearing
ID	Intellectual Disabilities
LC	Leprosy Cured
SLD	Specific Learning Disabilities
DW	Dwarfism
MI	Mental Illness
AA	Acid Attack
PwD	Person with disabilities


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