

**MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION EXAMINATION, MUMBAI - 51**

1	Name of Course	<b>Certificate Course In Wood Work in Construction (304115)</b>																																								
2	Max. Nos. of Student	25 Students																																								
3	Duration	6 Month																																								
4	Type	Full Time																																								
5	Nos. Of Days / Week	6 Days																																								
6	Nos. of Hours /Days	7 Hrs																																								
7	Space Required	Laboratory = 1000 Sq feet Class Room = 200 Sq feet <b>TOTAL = 1200 Sq feet</b>																																								
8	Entry Qualification	<b>S.S.C.</b>																																								
9	Objective Of Syllabus/ introduction	Awareness of Safety precautions Knowledge of Engineering skill, use of tools in Construction. Awareness of Architecture. Awareness of Basic Carpentry. Awareness of Basic Building Construction.																																								
10	Employment Opportunity	The trainee will either to be able to take up jobs with agencies which Maintain Develop and repair Wood work in Construction or with working experience will be in a position to start his own independent Business.																																								
11	Teacher's Qualification	Diploma or Degree in Civil Engineering.																																								
12	Training System	<b>Training System Per Week</b> <table border="1"><tr><td>Theory</td><td>Practical</td><td>Total</td></tr><tr><td>12 Hours</td><td>30 Hours</td><td>42 Hours</td></tr></table>						Theory	Practical	Total	12 Hours	30 Hours	42 Hours																													
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13	Exam. System	<table border="1"><tr><th>Sr. No.</th><th>Paper Code</th><th>Name of Subject</th><th>TH/PR</th><th>Hours</th><th>Max. Marks</th><th>Min. Marks</th></tr><tr><td>1</td><td>30411511</td><td>Wood work in Construction</td><td>TH-I</td><td>3 hrs</td><td>100</td><td>35</td></tr><tr><td>2</td><td>30411521</td><td>Basic Building Construction &amp; Carpentry.</td><td>PR-I</td><td>3 hrs</td><td>100</td><td>50</td></tr><tr><td>3</td><td>30411522</td><td>Wood work in Construction</td><td>PR-II</td><td>6 hrs</td><td>200</td><td>100</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td><b>400</b></td><td><b>185</b></td></tr></table>						Sr. No.	Paper Code	Name of Subject	TH/PR	Hours	Max. Marks	Min. Marks	1	30411511	Wood work in Construction	TH-I	3 hrs	100	35	2	30411521	Basic Building Construction & Carpentry.	PR-I	3 hrs	100	50	3	30411522	Wood work in Construction	PR-II	6 hrs	200	100						<b>400</b>	<b>185</b>
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# SYLLABUS

## Wood work in Construction

Practical - II	Theory - I
<ul style="list-style-type: none"> <li>• Visits at different construction site to observe the scope of application of wood</li> <li>• Identify local needs of wood applications in construction sector</li> </ul>	<ul style="list-style-type: none"> <li>• Application of wood work in construction including interior decoration</li> <li>• Modern trend of wood application in construction</li> </ul>
<ul style="list-style-type: none"> <li>• Measure dimensions and calculate required parameter</li> <li>• Convert from one unit to other</li> <li>• Draw symmetrical figure using appropriate instrument</li> </ul>	<ul style="list-style-type: none"> <li>• Linear &amp; non linear angular measurement using appropriate &amp; precise instruments</li> <li>• Calculation of area &amp; volume</li> <li>• Units</li> <li>• Conversion of units</li> <li>• Drawing of symmetrical &amp; non symmetrical figures</li> </ul>
<ul style="list-style-type: none"> <li>• Prepare approximate estimates</li> <li>• Prepare detailed estimates</li> </ul>	<ul style="list-style-type: none"> <li>• Need of estimates</li> <li>• Methods of taking measurements</li> <li>• Measurement tools</li> <li>• Methods of preparing</li> <li>• Read CSR</li> <li>• Use of CSR</li> </ul>
<ul style="list-style-type: none"> <li>• Select appropriate material for different applications</li> <li>• Use preservative techniques and store material</li> <li>• Prepare small job pieces using all the material</li> <li>• Observe safety precautions throughout the processes</li> </ul>	<p>Wood</p> <ul style="list-style-type: none"> <li>• Different types of wood and their applications</li> <li>• Properties of wood</li> <li>• Defects in wood</li> <li>• Diseases &amp; decay of wood</li> <li>• Seasoning &amp; preservation</li> </ul>
	<ul style="list-style-type: none"> <li>• Storage of finished &amp; unfinished product</li> <li>• Plywood &amp; allied product</li> <li>• Plywood, veneers, particle board, fibre board, laminated boards, zypsom board, pressed / moulded panels</li> <li>• Selection of material for different purposes</li> <li>• Plastic sheets, sheet metal, glass, mirror</li> <li>• Hardware product</li> <li>• Hardware fixtures used Adhesive &amp; finishing material</li> <li>• Use of adhesives &amp; other finishing materials</li> <li>• Safety measures</li> </ul>
<ul style="list-style-type: none"> <li>• Select tools for different operations</li> <li>• Carry out operation safely</li> <li>• Carry out minor repair &amp; maintain tools</li> <li>• Use power &amp; hand tools for practice jobs</li> </ul>	<ul style="list-style-type: none"> <li>• Different types of hand tools and power tools used in wood working</li> <li>• Correct &amp; safe use of tools</li> <li>• Selection of tools</li> <li>• Maintenance of tools</li> <li>• Safety precautions</li> </ul>

<ul style="list-style-type: none"> <li>• Mark a plane wood piece using appropriate tool</li> <li>• Carry out all the operations and prepare products used in constructions</li> </ul>	<ul style="list-style-type: none"> <li>• Different operation <ul style="list-style-type: none"> <li>o Sawing</li> <li>o Chamfering</li> <li>o Beveling</li> <li>o Planning</li> <li>o Moulding</li> <li>o Mitring</li> <li>o Scribing</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>o Chiseling</li> <li>o Marking</li> <li>o Joints : half joint, mortise joint, tenon joint, fork tenon joints, tenon moritise joint, dovetail joints</li> <li>o Fitting</li> <li>o Fastening</li> <li>o Beeding</li> <li>o Fixing</li> <li>o Drilling</li> <li>o Safety measure</li> </ul>
<ul style="list-style-type: none"> <li>• Perform all the operation according to specification meeting quality standard</li> </ul>	<ul style="list-style-type: none"> <li>• Wall paneling</li> <li>• Cabinets</li> <li>• Partitions</li> <li>• Counter tops</li> <li>• Modular kitchen</li> <li>• Cup boards</li> <li>• False ceilings</li> <li>• Acoustics using wood work</li> </ul>
<ul style="list-style-type: none"> <li>• Carry out finishing operations on the product</li> <li>• Observe safety precautions</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of surface</li> <li>• Different finishing material</li> <li>• Methods &amp; techniques of finish</li> <li>• Safety measure</li> </ul>
<ul style="list-style-type: none"> <li>• Operate and shutdown the computer</li> <li>• Make data entries, create files and folders</li> <li>• Draft simple letters</li> <li>• Use computer for email &amp; internet search</li> <li>• Prepare inventory using computer</li> </ul>	<ul style="list-style-type: none"> <li>• Basic operations using common office software</li> <li>• Use of software available for construction sector.</li> <li>• Introduction to internet</li> </ul>
<ul style="list-style-type: none"> <li>• Calculate the cost of making a product like dining table/ almiraha etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Raw material</li> <li>• Labor</li> <li>• Profit</li> <li>• Final price</li> </ul>
<ul style="list-style-type: none"> <li>• Exercises on – redeployment of labour</li> </ul>	<ul style="list-style-type: none"> <li>• Factors affecting labour and material</li> <li>• Methods of overcoming constraints</li> </ul>

## List of Equipment, Tools and Instruments

Sr. No.	Item/ Specification	Quantity proposed for a batch of 25 trainees
1.	Work bench (1800 x 9000 x 750)	4
2.	Try square	10
3.	Flexible tape (steel)	10
4.	Scribing knife	8
5.	Bevel	8
6.	Marking point	8
7.	Mortise gauge	8
8.	Marking gauge	8
9.	Mortise chisel	8
10.	Parting chisel	8
11.	Firmer chisel	8
12.	Cross-cut-saw	8
13.	Tenon saw	8
14.	Dovetail saw	8
15.	Compass saw	8
16.	Coping saw	8
17.	Power operated portable saw	04
18.	Ratchet brace with bits (as required)	04 set
19.	Pointed Awl	8
20.	Brad Awl	8
21.	Auger (required sizes)	8 set
22.	Gimlet	8

## Basic Building Construction Basic Carpentry

Practical - I
Introduction with buildings about different parts of the building and draw a neat sketch passing thro' door, window, and roof of multi stories building, orientation and ventilation of building.
Introduction by showing the different types of materials i.e. bricks, stones, tiles, cement, sand, aggregates, lime, steel, timber, earthen ware, Standard size of local market bricks available in your locality, site visit of brick kiln showing the manufacturing of bricks, field test of cement. Etc.
Construction of different types of foundation, Layout of foundation plan on the ground, reading of map, laying of concrete in foundation, ratio of foundation concrete. Transfer of center line with Plumb Bob in the excavated trench, laying of D.P.C.
Tools of Brick masonry, how to use the tools of brick masonry, construction of wall and corner junction of wall in super structure and foundation in English Bond and Flemish Bond, Streacher Bond, Header Bond in pillars and walls etc. Zig-Zag Bond, Hearing Bone Bond in Brick flooring etc
Centering and Shuttering of different types of Arches, Construction of Arches and construction of different types of Roofs, laying of Reinforcement of RCC flat Roof and Reinforced Brick Slab Roof, Terracing of roof, First and second class mud Roof, Jack Arch Roofs, its method of construction.
Construction of all types of floors, making of formation level, laying of Base Layers, laying of Topping, etc.
Surface plastering 1/2" (12.5 mm to 20 mm) thick in various ratios of cement and mortar. Ceilings plaster, Curing of plaster.
White Washing, three coats for new plastered surface, colour wash, lime paint, cement paints, applying enamel paints to the wood work, Steel work, etc. including primary coat.
Importance of the subject introduction with workshop safety precautions, fire fighting equipments etc.
Identification of hand tools demonstration and using measuring, sawing practice using different types of saws, and plains etc.
Ripping , cross cutting , curve cutting , oblique sawing .use of sawhorse , bench hook , Bench vice , Bench stop etc , Identification of timber , showing defects knots , shakes , grains etc .
Planning practice: planning face side , face edge marks use , of marking gauge etc , testing of accuracy flatness , twist ness of surface . use of straight edge bench stop , try square , cross planning , edge planning , planning piece of size , grinding , sharpening of plan blade etc .
Demonstration and making of joints. Framing joints: halving joints, trenching, housing joints, mortised and tanon joint , Door joint , bridle joint , dovetail joint , lap dovetail joint , miter joint etc
Broadening joint: simple butt, slot screw joint, pocket screw joint, tongue and groove butt joint, etc.
Lengthening joints: slopping scarf, racking scared, half lapping scarf , table scarf joint etc.

## List of Tools and Equipments

### Basic Carpentry

Sr. No.	Description	Quantity
1	Flexible tape role steel (3 meter)	10
2	Try Square (20 mm)	10
3	Square bevel	10
4	Marking Gauge (Wooden)	10
5	Hand Saw 450 mm	10
6	Saw tenon 300 mm	10
7	Jack plane metal 335 mmx 50 mm cutter	10
8	Plane smoothing metal 250 mmx 50 mm cutter	10
9	Chisel firmer (bevel edge) 6, 10, 15, 20, 25mm with (5 nos.)	10
10	Chisel mort ice 6,10,15, (3nos)	10
11	Screw driver (300 mm)	10
12	Wooden mallet (medium size)	10
13	Hammer claw (500gms)	10
14	Carborandom stone (200x 50x 25mm)	10
15	Hand brush for bench cleaning (400mm)	10
16	Screw Driver 250 mm	04
17	Pincer 50mm	04
18	File Half Round 2nd Cut 250mm	08
19	File half wood rasp bastard 300mm	08
20	File slim taper 100 mm	08
21	Card File (Steel) wire brush for file	08
22	Electrically operated motorized cutter	4

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