

<b>SYLLABUS FOR CARPENTERTRADE</b>			
<b>DURATION: ONE YEAR</b>			
<b>Duration</b>	<b>Reference Learning Outcome</b>	<b>Professional Skills (Trade Practical) With Indicative Hours</b>	<b>Professional Knowledge (Trade Theory)</b>
Professional Skill 50Hrs;  Professional Knowledge 14 Hrs	Identify timber/ wood, apply measuring, marking and testing instrument and holding & supporting hand Tools following safety precautions.	<ol style="list-style-type: none"> <li>1. Demonstrate first aid, fire safety equipment, different types of fire extinguisher and their application. (10hrs.)</li> <li>2. Identification of different wooden sample piece i.e. - soft wood &amp; hard wood, wooden grains etc. &amp; their applications. (04hrs.)</li> <li>3. Identification of wooden sample piece (Annual ring, knots, shakes &amp; chicks etc.). (03hrs.)</li> <li>4. Demonstrate use of hand operated tools and showing different audio-visual clips. (08 hrs.)</li> </ol>	<ul style="list-style-type: none"> <li>• Introduction of carpentry trade.</li> <li>• General discipline, workshop discipline &amp; Housekeeping.</li> <li>• Safety precaution in the workshop and industrial safety.</li> <li>• Importance of P.P.E, Types of PPE and their application.</li> <li>• Introduction of timber, growth of timber trees, cross-section of exogenous tree trunk, types of tree, different part of a tree, Soft &amp; hard wood, their differences.(07 hrs)</li> </ul>
		<ol style="list-style-type: none"> <li>5. Identification and use of different types of the measuring, marking and testing tools &amp; their applications. (10hrs.)</li> <li>6. Identification and use of different types of work holding devices. (06hrs.)</li> <li>7. Demonstrate use of machinery and hand operated portable tools and their safety. (09 hrs.)</li> </ol>	<ul style="list-style-type: none"> <li>• Common Indian timbers.</li> <li>• Defects in timber, diseases of timber, knots, shakes, grains etc.</li> <li>• Introduction of carpentry hand tools, classification and uses of marking, work holding devices.</li> <li>• Measuring &amp; testing tools. (07 hrs)</li> </ul>
Professional	Identify and apply	8. Demonstrate the use of	• Type of bench vice and their

<p>Skill 25 Hrs; Professional Knowledge 07 Hrs</p>	<p>various saws and portable power saw machines for Ripping, cross cutting, Oblique sawing and curve cutting etc.</p>	<p>bench vice, bench hook, bench stop&amp; their application. (02 hrs.)</p> <p>9. Demonstrate different types of saws- ripping, cross cutting, curve cutting, oblique sawing. (06 hrs.)</p> <p>10. Use and practice Portable power circular saw. (04hrs.)</p> <p>11. Sharpen and set different type saw blade. (05 hrs.)</p> <p>12. Demonstrate the use of country drill, hand drill, ratchet brace, Breast drill and hand augers &amp; bits. (04hrs.)</p> <p>13. Demonstrate the use of portable electrical drill machine. (02hrs.)</p> <p>14. Demonstrate the Auger application. (02hrs.)</p>	<p>uses.</p> <ul style="list-style-type: none"> <li>• Introduction of different saw and their uses.</li> <li>• Introduction of power circular saw and its use.</li> <li>• Type of special saw and its uses i.e. -compass saw, coping saw, bow saw, fret saw.</li> <li>• Saw sharpening and sharpening tools.</li> <li>• Description of boring tools - Types, Parts, functions, size and application.</li> <li>• Description of portable electrical drill machine.</li> <li>• Drill bits, types, sizes etc.</li> <li>• Hand augers description, sizes of augers, application of hand augers. (07 hrs)</li> </ul>
<p>Professional Skill 25 Hrs; Professional Knowledge 07 Hrs</p>	<p>Analyze the surface finish with exact sizing by planning operation, identifying and applying various shaving tools or portable power planning machine.</p>	<p>15. Planning face, face edge. (04 hrs.)</p> <p>16. Demonstrate the use of marking, mortise gauge etc. (04 hrs.)</p> <p>17. Test the accuracy of flatness and twistness of the surface by using try square. (04hrs.)</p> <p>18. Demonstrate the use of winding strips, cross planning, edge planning. (04hrs.)</p> <p>19. Grinding and Sharpening process of the planer blade/cutter. (05 hrs.)</p> <p>20. Demonstration of portable power planer machine and its function. (04 hrs.)</p>	<ul style="list-style-type: none"> <li>• Type of different planes and their proper uses in woodwork - Description, function and its size, setting, knowledge of sharpening and uses etc.</li> <li>• Knowledge of using marking gauges.</li> <li>• Important instruments necessary for checking flatness and twistness of surface.</li> <li>• Sharpening and grinding angle of cutter.</li> <li>• Portable power planer - useful in modern woodwork and new technology design.</li> </ul>

			(07 hrs)
Professional Skill 25 Hrs;  Professional Knowledge 07 Hrs	Identify and apply various paring tools and analyze and choose the positioning and employ holding device for chiselling with better finish.	<p>21. Demonstrate the use of different types of chisel, chiselling, chiselling along &amp; across the grain. (08hrs.)</p> <p>22. Grind/ sharpen and honing of a chisel. (08hrs.)</p> <p>23. Demonstrate use of different types of striking tool, hammer and mallets. (04hrs.)</p> <p>24. Demonstrate the use of clamps 'G' or 'C', saw sharpening vice, carpentry vice etc. (05hrs.)</p>	<ul style="list-style-type: none"> <li>• Different type chisels - Definition, identification, their uses.</li> <li>• Necessity of grinding and sharpening.</li> <li>• Striking tools- Definition, types, application.</li> <li>• Files - Types, uses</li> <li>• Care &amp; maintenance of files</li> <li>• Function of work bench, bench vice, bench hook, etc. (07 hrs)</li> </ul>
Professional Skill 100Hrs;  Professional Knowledge 28Hrs	Identify and classify various types of joints, analyze and prepare correct joint at correct position, related with strength and appearance.	<p><b><u>Demonstration and making framing joint</u></b></p> <p>25. Single Mortise and tenon Joint. (04hrs.)</p> <p>26. Double tenon &amp; mortise joint. (04hrs.)</p> <p>27. Plain hunched tenon and mortise joint. (04 hrs.)</p> <p>28. Mitre corner tenon &amp; mortise joint. (04hrs.)</p> <p>29. Task tenon mortise joint. (04 hrs.)</p> <p>30. Bare faced tenon joint. (05hrs.)</p>	<ul style="list-style-type: none"> <li>• Seasoning of timber - Definition, advantage and disadvantage of seasoning.</li> <li>• Moisture content in timber and its effect on timber.</li> <li>• Characteristics of wood, physical and mechanical properties of wood.</li> <li>• Quality of good timber.</li> <li>• Define the classification of wooden joint.</li> <li>• Description of different types joint.</li> <li>• Uses of joint: Framing joint angle joint and lengthening joint etc. (07 hrs)</li> </ul>
		<p><b><u>Demonstration and making Housing joints</u></b></p> <p>31. Full housing joint. (03 hrs.)</p> <p>32. Bridle joint etc. (03hrs.)</p> <p>33. Stopped housing joint. (04 hrs.)</p> <p>34. Dovetail housing joint. (03 hrs.)</p>	<ul style="list-style-type: none"> <li>• Preservation of timber.</li> <li>• Application of different types of preservation &amp; Process of each treatment.</li> <li>• Definition of housing joint.</li> <li>• Different type of housing joint.</li> </ul>

		<p><b><u>Demonstration and making dovetail joint</u></b></p> <p>35. Single dovetail joint. (03 hrs.)</p> <p>36. Common dovetail joint. (03 hrs.)</p> <p>37. Lapped dovetail joint. (03 hrs.)</p> <p>38. Secret mitre dovetail joint uses of dovetail template. (03 hrs.)</p>	<ul style="list-style-type: none"> <li>• Uses of housing joint.</li> <li>• Description of different dovetail joint and their function.</li> <li>• Uses of dovetail joint.</li> <li>• Glues - Types of glue and their uses. (07 hrs)</li> </ul>
		<p><b><u>Demonstration and Making broadening joints</u></b></p> <p>39. Simple butt joint by hard wood (100 mm width and 15mm thick). (02 hrs.)</p> <p>40. Riveted butt joint on hard wood (100mm width and 25mm thick). (04 hrs.)</p> <p>41. Pocket screw butt joint on hard wood (100mm width and 15mm thick). (03 hrs.)</p> <p>42. Secret pocket screw butt joint on teak wood or hard wood (100mm width and 100mm thick). (06 hrs.)</p> <p>43. Glued butt joint with dowel by a hard wood (100mm width and 15mm thick). (04 hrs.)</p> <p>44. Tongue and groove joint on hard wood (100mm width and 15mm thick). (06 hrs.)</p>	<ul style="list-style-type: none"> <li>• Broadening joint description.</li> <li>• Types of broadening joint.</li> <li>• Application of broadening joint.</li> <li>• Setting of end side according to annual Rings as well as matching the grain stranding.</li> <li>• Advantage of adhesives use and their types.</li> <li>• Method of Dowel application. (07 hrs)</li> </ul>
		<p><b><u>Making lengthening joint</u></b></p> <p>45. End half lap joint on hard wood (50mm X 50mm). (02hrs.)</p> <p>46. End over lap joint by hard wood 150mm X 25mm. (01</p>	<ul style="list-style-type: none"> <li>• Lengthening joint description.</li> <li>• Types of lengthening joint.</li> <li>• Application of different lengthening joint.</li> <li>• Setting of two taper</li> </ul>

		<p>hr)</p> <p>47. End bends lap joint on hard wood (50mm X25mm). (02 hrs.)</p> <p>48. Table scrat joint on hard wood (50mm X 50m). (03 hrs.)</p> <p>49. Too then end table &amp; scarf joint on hard wood (50mm X 50m). (04 hrs.)</p> <p>50. Bend scarf joint on teak wood or hard wood (50mm X 50m). (03 hrs.)</p> <p><b><u>Making of Frame using different type of joints –</u></b></p> <p>51. Stopped Tenon &amp; mortise Joint on hard wood to make tea table frame to lock four legs, top rail and bottom rails. (04 hrs.)</p> <p>52. Lapped half lap dovetail joint on bottom rails on hard wood. (03 hrs.)</p> <p>53. Tongue &amp; Groove joint on tabletop by hard wood as a broadening joint. (03 hrs.)</p>	<p>wedges.</p> <ul style="list-style-type: none"> <li>• Advantages of table &amp; scarf joint.</li> <li>• Veneer, Plywood</li> <li>• Types of plywood</li> <li>• Advantage of plywood</li> <li>• Application of plywood, block board, laminated board, hard board, insulation board, mica etc. (07 hrs)</li> </ul>
<p>Professional Skill 125 Hrs;  Professional Knowledge 35Hrs</p>	<p>Make small wooden job as per drawing with schedule sizes of timber or alternatives of timber i.e. FRP, MDF, FOAM using various hardware.</p>	<p><b><u>Make small wall bracket –</u></b></p> <p>54. Make joint on hard wood to make small frame. (03hrs.)</p> <p>55. Stopped Tenon &amp; Mortise joint on hard wood in the frame to set the selves. (02hrs.)</p> <p>56. Make selves by six pieces of hard wood with single lapped half lap dovetail joint with frame (two nos. of selves). (05 hrs.)</p> <p>57. Four sides of chalk box.</p>	<ul style="list-style-type: none"> <li>• Parts &amp; terms of portable disc sander.</li> <li>• Application of portable disc sander.</li> <li>• Care &amp; maintenance of disc sander.</li> <li>• Method of making a wooden partition.</li> <li>• Door frames.</li> <li>• Door &amp; window panels. (07 hrs)</li> </ul>

		<p>(100mm X 120mm X 100mm) locked with hard wood by common dovetail joint (3 pin). (05 hrs.)</p> <p>58. Grooves on three sides. (02 hrs.)</p> <p>59. Make the lid &amp; base with Masonite with handle levelled with top. (02 hrs.)</p> <p>60. Common dovetail joint apply to lock four sides of tray (400mm X 300mm X 200mm). (04 hrs.)</p> <p>61. Bases made with ply wood (5mm thick) and make the handle. (02 hrs.)</p>	
		<p>62. Layout of stool and make cutting List for mass production. (05hrs.)</p> <p>63. Prepare standard height taper legged stool as per layout. (05hrs.)</p> <p>64. Demonstrate application of adhesive. (05 hrs.)</p> <p>65. Layout making for notice board or display board by hard board, plywood and insulation board. (05 hrs.)</p> <p>66. Making a small rack by layout with hard wood and plywood. (05 hrs.)</p>	<ul style="list-style-type: none"> <li>• Calculation of timber required for stool.</li> <li>• List out the sequence of operation of the job.</li> <li>• Timbers used in furniture work – describe Sal, teak, gamar, pine, deodar etc.</li> <li>• Properties and characteristics of different furniture wood. (07 hrs)</li> </ul>
		<p>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. (12 hrs.)</p> <p>68. Painting and polishing or</p>	<ul style="list-style-type: none"> <li>• Conversion and types of conversion.</li> <li>• Parallel sawing Radial sawing Quarter sawing Tangential sawing Process and advantage</li> <li>• Design of wooden wall unit</li> </ul>

		<p>fixing sun mica with adhesive. (08 hrs.)</p> <p>69. Setting glasses and hard works as on required location. (05 hrs.)</p>	<p>uses in bed room, dining hall, library, office, workshop classroom. (07 hrs)</p>
		<p>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). (20 hrs.)</p> <p>71. Uses sun mica and pest on the top of table. (05 hrs.)</p>	<ul style="list-style-type: none"> <li>• Uses of joint for small table to stronger strength.</li> <li>• Manufacturing process of various boards and sheets.</li> <li>• Types of hinges, Uses of hinges</li> <li>• Types of door lock &amp; their different uses. (07 hrs)</li> </ul>
		<p><b><u>Demonstration on nailing screwing on job</u></b></p> <p>72. Use selected nail for the table and small box. (12 hrs.)</p> <p>73. Use selected screw for the table and small box. (08 hrs.)</p> <p>74. Application of different types of Nails, screws etc. (05 hrs.)</p>	<p>Nails and screws –</p> <ul style="list-style-type: none"> <li>• Nail and screws – type, Uses etc.</li> <li>• Nut, bolts and washer - types and Uses</li> <li>• Lock hinges hasp and staple.</li> <li>• Knowledge of other fittings – types, sizes and lenses. (07 hrs)</li> </ul>
<p>Professional Skill 25 Hrs;</p> <p>Professional Knowledge 07 Hrs</p>	<p>Analyze and identify various carving tools and convert a wooden block/ piece into a decorative article.</p>	<p>75. Demonstrate wood carving using carving tools, sharpen carving tools and finish by smoothing. (25 hrs.)</p>	<ul style="list-style-type: none"> <li>• Description of different carving tools.</li> <li>• Tools required for ornamental carving.</li> <li>• Properties of wood.</li> <li>• Preparation a bill of materials.</li> <li>• Estimate the material. (07 hrs)</li> </ul>
<p>Professional Skill 50 Hrs;</p> <p>Professional Knowledge 14 Hrs</p>	<p>Demonstrate preservation of wooden item through surface finishing with various processes such as Painting,</p>	<p>76. Prepare surface for Painting. (04 hrs.)</p> <p>77. Apply paints. (03 hrs.)</p> <p><b>Varnish surface of woodwork</b></p> <p>78. Prepare surface for varnishing by smoothing plane. (04 hrs.)</p>	<ul style="list-style-type: none"> <li>• Paints, ingredients of paints.</li> <li>• Name of the agent of paints.</li> <li>• Method of preparation of surface for staining.</li> <li>• Necessary tools and equipment required for</li> </ul>

	polishing & varnishing etc.	79. Smoothing plane on knotty and interlocked cross grained. (04 hrs.) 80. Smoothen surface by scraping with sandpaper or portable sander machine. (06 hrs.) 81. Varnish on finished surface. (04 hrs.)	staining. <ul style="list-style-type: none"> <li>• Uses of different grade sandpaper.</li> <li>• Portable sander machine - uses</li> <li>• Preparation of putty and use.</li> <li>• Staining – type, process, methods applied for different timber. (07 hrs)</li> </ul>
		<b>Polishing of Furniture –</b> 82. Cleaning of furniture surface. (04hrs.) 83. Application of French polish. (06hrs.) 84. Application of wax polishes. (06hrs.) 85. Remove old polish and re-polish old furniture. (05hrs.) 86. Prepare an estimation of wooden furniture. (04hrs.)	<ul style="list-style-type: none"> <li>• Description &amp; method of French polish.</li> <li>• Method of wax polish and its uses.</li> <li>• Methods of old furniture re-polish.</li> <li>• Estimation process of wooden furniture. (07 hrs)</li> </ul>
Professional Skill 75 Hrs;  Professional Knowledge 21 Hrs	Demonstrate ripping, cross cutting, curve cutting etc. on band saw/ circular saw machine and grinding and setting of blade/ cutter.	87. Demonstrate band saw machine with different parts & their functions. (07 hrs.) 88. Demonstration to the safety precaution with operational techniques. (07 hrs.) 89. Remove and refit band saw blades. (03 hrs.) 90. Grinding and setting operation of band saw blade. (08 hrs.)  91. Ripping & cross cutting operation on band saw machine with hard wood. (07 hrs.) 92. Curve cutting operation on hard board or soft wood or ply board by band saw machine. (08 hrs.)	<ul style="list-style-type: none"> <li>• Describe constructional features of band saw machine.</li> <li>• Types of band saw machine.</li> <li>• Sizes of band saw machine.</li> <li>• Parts of band saw machine.</li> <li>• Function of band saw machine.</li> <li>• P.P.E for band saw machine (07 hrs.)</li> <li>• Operation of band saw machine.</li> <li>• Safety precaution of bad saw machine.</li> <li>• Care &amp; maintenance of band saw machine with oiling &amp; greasing. (07 hrs)</li> </ul>



		<p>93. Bevelling operation on hard wood/ soft wood. (05 hrs.)</p> <p>94. Chamfering operation on hard wood/ soft wood/ ply board by bend saw machine. (05 hrs.)</p>	
		<p>95. Demonstrate circular saw machine, its parts and their operational techniques with safety precaution. (04 hrs.)</p> <p>96. Remove and refit of circular saw blade. (02 hrs.)</p> <p>97. Grinding and setting operation of the circular saw blade. (04 hrs.)</p> <p>98. Ripping &amp; cross cutting operation on hard wood/ soft wood/ ply wood (not less than 12 mm) by circular saw machine. (04hrs.)</p> <p>99. Rebating &amp; grooving operation on hard wood/ soft wood by circular saw machine. (04 hrs.)</p> <p>100. Mitering operation on hard wood/ soft wood/ plywood (not less than 12 mm) (02 hrs.)</p> <p>101. Demonstrate portable Circular saw machine with different parts &amp; their functions. (04 hrs.)</p> <p>102. Remove and refit of saw blade. (01 hr.)</p>	<ul style="list-style-type: none"> <li>• Describe circular saw machine.</li> <li>• Types of circular saw machine.</li> <li>• Sizes of circular saw machine.</li> <li>• Identify the parts of circular saw machine.</li> <li>• Function of circular saw machine.</li> <li>• Different types of saw blades used in circular saw machine.</li> <li>• Safety precaution of circular saw machine.</li> <li>• Care &amp; maintenance of circular saw machine with oiling &amp; greasing.</li> <li>• Operation of portable type circular saw machine.</li> <li>• Safety precautions</li> <li>• P.P.E for the circular saw machine (07 hrs)</li> </ul>
Professional Skill 50 Hrs; Professional Knowledge	Demonstrate different operations on Jointer/surface Planer/Thickness	103. Demonstrate Jointer/surface Planer machine, its parts and their operational techniques and safety precaution. (06 hrs.)	<ul style="list-style-type: none"> <li>• Describe of planning machine.</li> <li>• Types of planning machine.</li> <li>• Sizes of planning machine.</li> <li>• Parts of surface/thickness</li> </ul>

14 Hrs	planer machine along with sharpening blades. (Range of operations – Surfacing, thickening, chamfering, edge bending etc.)	<p>104. Remove and refit of cutter of planing machine. (04 hrs.)</p> <p>105. Sharpening and honing operation of cutter of planing machine. (15 hrs.)</p> <p>106. Surfacing operation on hard wood/ soft wood by planing machine. (06hrs.)</p> <p>107. Thickness operation on hard wood/ soft wood by planing machine. (06hrs.)</p> <p>108. Chamfering Operation (06hrs.)</p> <p>109. Edge bending operation on hard wood/ soft wood by planing machine. (07hrs.)</p>	<p>planing machine.</p> <ul style="list-style-type: none"> <li>• Function of surface/ thickness planing machine.</li> <li>• P.P.E for the surface/ thickness planing machine. (07 hrs)</li> <li>• Operation of surface / thickness planing machine.</li> <li>• Safety precaution of surface / thickness planing machine.</li> <li>• Care &amp; maintenance of surface / thickness planing machine</li> <li>• Oiling &amp; greasing. (07 hrs)</li> </ul>
Professional Skill 25 Hrs;  Professional Knowledge 07 Hrs	Demonstrate working on pedestal grinding (Range of operations – grinding of mushroom head, cutting edge of tools, drills, etc.)	<p>110. Demonstrate pedestal grinding machine, its parts and their operational techniques with safety precautions. (06hrs.)</p> <p>111. Demonstrate off hand grinding operation as per requirement of the trade. (07 hrs.)</p> <p>112. Grind mushroom head, cutting edge of tools, drill bits and check correctness. (12 hrs.)</p>	<ul style="list-style-type: none"> <li>• Pedestal grinding machine - Description, Types, Sizes, Parts, Function, Operation of pedestal grinding machine.</li> <li>• Safety precaution and P.P.E for the pedestal grinding machine</li> <li>• Care &amp; maintenance of pedestal grinding machine with oiling &amp; greasing.(07 hrs)</li> </ul>
Professional Skill 25 Hrs;  Professional Knowledge 07 Hrs	Demonstrate working on pedestal /portable drilling machine, use of different types of drill bits, make holes of different sizes in correct location on	<p>113. Demonstrate pedestal drilling machine and its parts &amp; their operational techniques and safety precaution. (06 hrs.)</p> <p>114. Make different sizes of drill hole on wooden block/ job using straight/ taper shank drill bit. (10 hrs.)</p>	<ul style="list-style-type: none"> <li>• Pedestal drilling machine - Description, Types, Sizes, Parts, Function, Operation of pedestal drilling machine.</li> <li>• Safety precaution and P.P.E for the pedestal drilling machine</li> <li>• Care &amp; maintenance of pedestal drilling machine</li> </ul>

	woodwork.	115. Use of counter sinking bit on job. (07 hrs.) 116. Demonstrate care & maintenance. (02 hrs.)	with oiling & greasing <ul style="list-style-type: none"> <li>Types of drill bits used in drill machine.(07 hrs)</li> </ul>
Professional Skill 25 Hrs; Professional Knowledge 07 Hrs	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. (04 hrs.) 118. Remove, grind and refit cutting tools and set job. (04 hrs.) 119. Plain turning operation on hard wood/ soft wood by wood turning lathe. (04 hrs.) 120. Drilling, boring, taper turning operation on hard wood/ soft wood by wood turning lathe. (05 hrs.) 121. Make chisel handle, table lamp stand, etc on wood turning lathe. (05 hrs.) 122. Internal turning operation using face plate. (03 hrs.)	<ul style="list-style-type: none"> <li>Wood turning lathe – Description, Types, Sizes, Parts, Function, Types, Operation of wood turning lathe.</li> <li>Safety precaution and P.P.E for wood turning lathe.</li> <li>Care &amp; maintenance of wood turning lathe with oiling &amp; greasing.</li> <li>Types and application of set of chisels</li> <li>Signature of cutting tools. (07 hrs)</li> </ul>
Professional Skill 25 Hrs; Professional Knowledge 07 Hrs	Demonstrate different operations on Tenon and mortise machine.	123. Demonstrate working of mortise machine, its part, their operational techniques and safety precaution. (06 hrs.) 124. Adjust table along with feed and job holding. (03 hrs.) 125. Mortising operation on hard wood/ soft wood (300mmX50 mm X 25mm). (05 hrs.) 126. Remove and refit of chain & sprocket with the machine. (05 hrs.) 127. Make groove at the face or	<ul style="list-style-type: none"> <li>Mortise machine – Description, Types, Sizes, Parts, Function, Operation of mortise machine.</li> <li>Safety precaution and P.P.E formortise machine.</li> <li>Care &amp; maintenance of mortise machine with oiling &amp; greasing</li> <li>Calculation of timber, weight, area, volume etc. (07 hrs)</li> </ul>

		edge on the job. (06 hrs.)	
Professional Skill 25 Hrs;  Professional Knowledge 07 Hrs	Demonstrate different operations on Sanding machine.	128. Demonstrate working of different types Sanding machine, its part, their operational techniques and working safety precaution. (10 hrs.)  129. Operation on hard wood/ soft wood by using sanding machine. (15hrs.)	<ul style="list-style-type: none"> <li>• Sanding machine – Description, Types, Parts of sanding machine.</li> <li>• Safety precaution and P.P.E for sanding machine. (07 hrs)</li> </ul>
Professional Skill 75 Hrs;  Professional Knowledge 21 Hrs	Identify and prepare different types of pattern, core box, core print etc. for moulding application with proper allowances and colour codes.	130. Identify pattern making hand tools (02 hrs.) 131. Use contraction rule (01hr.) 132. Demonstrate application of different type of pattern allowances. (05 hrs.) 133. Layout simple solid pattern on layout board. (03 hrs.) 134. Make pattern as per checked layout (take help of wood working machines as much as possible) on teak wood. (06hrs.) 135. Make Layout of split pattern. (03 hrs.) 136. Mark and make split pattern on teak wood. (05 hrs.)	<ul style="list-style-type: none"> <li>• Introduction of pattern</li> <li>• Different hand tool including contraction rule.</li> <li>• Different allocation</li> <li>• Different shrinkage</li> <li>• Drafting</li> <li>• Pattern allowance</li> <li>• Different types of timber used in pattern making.</li> <li>• Types of pattern and their uses.</li> <li>• Application of colour code in pattern making. (07 hrs)</li> </ul>
		137. Making dowels for split pattern. (02 hrs.) 138. Use of dowel pin and nail and screw etc. (02 hrs.) 139. Make templates by sun-mica, hard wood. (04 hrs.) 140. Make filets. (03 hrs.) 141. Layout of multi pieces pattern. (07 hrs.) 142. Mark and make multi piece pattern with teak wood as per layout and drawing. (07	<ul style="list-style-type: none"> <li>• Reading of blue print and drawing</li> <li>• Layout board and its use.</li> <li>• Dowel types, size and use in pattern making work.</li> <li>• Multi-piece pattern complication and remedy. (07 hrs)</li> </ul>

		hrs.) 143. Mark and make core and core print. (06 hrs.) 144. Prepare core box. (06 hrs.) 145. Carting pattern. (05 hrs.) 146. Positioning of core point (03 hrs.) 147. Apply Colour code on pattern, core box as per IS specification. (05 hrs.)	<ul style="list-style-type: none"> <li>• Types and uses of core and core print.</li> <li>• Colour codes specification.</li> <li>• Use of points on pattern, core, corebox is point.</li> <li>• Estimate volume of wood and other requirement for pattern making box. (07 hrs)</li> </ul>
Professional Skill 25 Hrs; Professional Knowledge 07 Hrs	Produce component involving different operations of fitting work and check for functionality.	148. Mark and make hanging plate, corner plate, name plate, different types of clamps and angle plate by chipping, sawing filling, drilling, counter sinking etc. (14 hrs.) 149. Make nuts, bolts, washers, screws by drilling, tapping and dieing. (06hrs.) 150. Grind chisels, drills and check for correct cutting angle. (05hrs.)	<p><b><u>General safety in fitting shop</u></b></p> <ul style="list-style-type: none"> <li>• Types of marking and cutting tools and their uses. (viz., marking block, chisels, hammer, hacksaw, files, etc.)</li> <li>• Uses and maintenance of tools – Steel rule, try squares, scriber, divider, calipers and other tools. Marking table, marking block etc.</li> <li>• Application of bench vice, clamps.</li> <li>• Types of drill bits, counter boring tool, taps and dies used in fitting work.</li> <li>• Types of nuts, bolts, washers, machine screws etc. (07 hrs)</li> </ul>
Professional Skill 50 Hrs; Professional Knowledge 14 Hrs	Produce component involving different operations of sheet metal work and check for functionality.	<p><b><u>Sheet metal work (S.M.W)</u></b></p> 151. Mark, cut and make various joints. (06hrs.) 152. Develop and mark metal sheet to make simple square container as per drawing. (08hrs.) 153. Make simple square container with wired edge	<p><b><u>Common sheet metal tools –</u></b></p> <ul style="list-style-type: none"> <li>• Description, type and uses of hand tools for sheet metal work.</li> <li>• Application of various types of hammer.</li> <li>• Application of various types of stakes.</li> <li>• Development of various</li> </ul>

		<p>and riveted joint and check dimension of the product. (12hrs.)</p> <p>154. Develop and mark metal sheet to make a funnel as per drawing. (10hrs.)</p> <p>155. Make funnel as per drawing with solder joint and check dimension of the product. (14hrs.)</p>	<p>type of shape.</p> <ul style="list-style-type: none"> <li>• Development of drawing and layout simple pattern</li> <li>• Right concept of shearing, punching, folding, bending etc(14 hrs)</li> </ul>
<p>Professional Skill 100 Hrs;</p> <p>Professional Knowledge 28 Hrs</p>	<p>Prepare various roof truss, door and windows frame, shutters, assembling &amp; fixing (wooden, aluminium &amp; pvc).</p>	<p>156. Revision of basic joint related with building work. (04 hrs.)</p> <p>157. Making door shutter. (06 hrs.)</p> <p>158. Making panel door. (06 hrs.)</p> <p>159. Making door glazed shutter. (06 hrs.)</p> <p>160. Fitting moulding with glass. (03 hrs.)</p>	<ul style="list-style-type: none"> <li>• Introduction about building construction.</li> <li>• Different type door &amp; windows and different size.</li> <li>• Different type panel used for panel shutter, glazed shutter.</li> <li>• Substitute of wood viz., block board, hard board etc. (07 hrs)</li> </ul>
		<p>161. Marking and making window frame and window shutter. (06 hrs.)</p> <p>162. Use protection bar. (05 hrs.)</p> <p>163. Roof trusses layout. (06 hrs.)</p> <p>164. Make Model type king post and queen post. (08 hrs.)</p>	<ul style="list-style-type: none"> <li>• Description of window frame and shutter</li> <li>• Uses of frame and shutter of window</li> <li>• Definition of roof trusses</li> <li>• Terms of king post and queen post. (07 hrs)</li> </ul>
		<p><b><u>Prepare sliding window &amp; 'Z' battened window by aluminum channel</u></b></p> <p>165. Angular cutting of aluminium bar at different angle and size. (06 hrs.)</p> <p>166. Join angular aluminium bar by screw and modern adhesive like dendrite, feviquick etc. (06 hrs.)</p> <p>167. Aluminium channel bar joining by fibre glass (06</p>	<ul style="list-style-type: none"> <li>• Description of aluminium</li> <li>• Anodising of the aluminium windows, channel, section etc.</li> <li>• Knowledge of different aluminium section, channels required for manufacturing the windows.</li> <li>• Drilling of aluminium bar and joining by screw and adhesive.</li> </ul>

		<p>hrs.)</p> <p>168. Fiber glass shutter fitted with aluminium channel. (07 hrs.)</p>	<ul style="list-style-type: none"> <li>• Knowledge of fibre glass</li> <li>• Introduce about rubber padding /gasket and aluminium wheel.</li> <li>• Uses of channel window which is involved in building construction. (07 hrs)</li> </ul>
		<p>169. Assembling and fixing of P.V.C door for kitchen and W.C bath. (25 hrs.)</p> <ul style="list-style-type: none"> <li>• Cutting angular wise P.V.C door frame.</li> <li>• Forming shape by joining adhesive and screwing.</li> <li>• P.V.C shutter door finish by adhesive and screwing.</li> <li>• Assembling &amp; fixing the PVC door.</li> </ul>	<ul style="list-style-type: none"> <li>• Uses of P.V.C as substitute of wood.</li> <li>• Give more get-up and cheapest in price.</li> <li>• New style framing work.</li> <li>• Modern technologies follow up P.V.C moulding.</li> <li>• Advantages and disadvantages (07 hrs)</li> </ul>
<p>Professional Skill 25 Hrs;</p> <p>Professional Knowledge 07 Hrs</p>	<p>Paint various door, windows frame, stair and furniture (wooden or aluminum).</p>	<p>170. Removal of old painting by application of chemical paint remover. (04 hrs.)</p> <p>171. New painting for door, window stair, furniture, etc. (04 hrs.)</p> <p>172. Plain and smoothing of door &amp; window and staircase railing. (05 hrs.)</p> <p>173. Apply Synthetic enamel primer on the new surface. (08 hrs.)</p> <p>174. Apply synthetic enamel paint or oil paint on the priming surface as finishing coat. (04 hrs.)</p>	<ul style="list-style-type: none"> <li>• Apply of removing old painting by new chemical then after repainting on furniture</li> <li>• Uses of new painting and priming on furniture. (07 hrs)</li> </ul>
<p>Professional Skill 50Hrs;</p> <p>Professional Knowledge</p>	<p>Prepare various type of wooden floor, partition wall etc.</p>	<p>175. Identification of simple floor construction. (10hrs.)</p> <p>176. Use the cogged joint for wooden floors. (10hrs.)</p> <p>177. Demonstrate different type</p>	<ul style="list-style-type: none"> <li>• Purpose of using floor construction with different types of joist.</li> <li>• Basic principal of repairing work, door window,</li> </ul>

14Hrs	Check, identify, analyze and repair the wooden job.	<p>basement floor single joint wooden floor and double joint wooden floor. (10hrs.)</p> <p>178. Make structure of wooden partition wall. (10hrs.)</p> <p>179. Repair and recondition furniture, door and window, staircase hand railing. (10hrs.)</p>	<p>staircase rack etc.</p> <ul style="list-style-type: none"> <li>• Illustrate of nail screw bracket angle plate nut bolt, etc.</li> <li>• Economic factors and material estimates.</li> <li>• Hilti laser tools, types and their applications(14 hrs)</li> </ul>
<p><b>In-plant training / Project work Projects viz.</b></p> <ol style="list-style-type: none"> <li>a. Pen stand</li> <li>b. Flower vase</li> <li>c. Drawing Board</li> <li>d. Notice Board</li> <li>e. Doors</li> <li>f. Windows, etc.</li> </ol>			