

**SKVV : SYLLABUS FOR TRADE IN VOCATION TRAINING CERTIFICATE PROGRAM**

**DURATION: SIX MONTHS**

**TRADE : CARPENTER**

First Semester

Course code no.	TRADE PRACTICAL	TRADE THEORY
VTC C-101	Familiarization with the workshop: Sections and the general places. Wood working sections and wood working machine shop . show different exercises / jobs done by the trainees in the previous year batches etc. show different audio – visual aids, library, show room etc.	Safety precautions: Importance of the trade in the industrial development of the country. Introduction to the general safety, causes of accident and avoidance. Give some instruction related with the duties of the trainees, discipline recreational, medical facilities and other extracurricular activities of the institute.
VTC C-102	Identification and Familiarization of hand tools. Demonstration and use of measuring, marking and testing tools.	Safety precaution of the carpentry hand tools. Workshop discipline and safety first aid etc. Introduction to the trade and to carpentry hand tools, their classification, names and the uses. Measuring, marking and testing tools, types, sizes, uses, etc  Introduction to timber : growth of a trees, cross-section of an exogenous tree trunk, parts, formation. Parts of a tree.  Functions and identification of timber and defects , diseases of timber VIZ. Knots , shakes, grains etc
VTC C-103	Sawing practice : - use of different types of the saws Ripping, cross cutting, curvecutting, oblique sawing etc.; Use of the , bench hook, bench vice, bench stop etc. Sharpening and the setting of the different types of the saws  Hand Tools and portable power tools - curve cutting saws :compass saw, coping saw, bow saw, fret saw etc. - description, types, size, use, care and maintenance. Sharpening and setting of saws. Portable circular saw and its uses.	Saw and the Plane : description, types, sizes, setting, sharpening, uses, etc.  Special saws - Compass saw, coping saw, Bow saw, fret saw portable circular saw..
VTC C-104	Planing practice : Demonstration and uses of the planes . Setting of the plane holding, Planing techniques. Planing face side, face edge, use of marking gauge etc. Testing of the accuracy, flatness and twistness of the surface. Use of straight edge, bench stop, try square, winding strips, cross planing, edge planing etc. Grinding and sharpening of the plane blades.	Different types of Plane : description, types, sizes, setting, sharpening, uses, etc.  Special planes:- Compass plane Moulding plane, Rebate plane, Grooving plane etc. - description, type, size, use, care and maintenance. Portable power planer machine and its uses.

VTC C-105	<p>Chiseling Practice And multiple chiseling practice: Demonstration and use of different types of chisels. Chiseling along the grain, across the grain of the vertical, horizontal etc. Grinding, sharpening and honing of chisel.</p> <p>Holding tools - Clamps, 'G' or 'C' clamp or cramp, sash /'T' bar cramps , saw sharpening vice, carpentry vice etc.</p>	<p>Hand tools ( paring tools ):: Different types of The chisels ,description , sizes, uses. Grinding, sharpening &amp; honing etc.</p> <p>Striking tools - Hammers, mallets etc.</p> <p>Workshop appliances : work bench, bench vice, bench hook, bench stop shooting board, MITRE board etc. - types, sizes , uses etc.</p>
VTC C-106	<p>Joint practice:- Demonstration and making framing joints :- Halving joints, trenching and housing joints, Mortise and tenon joints, plain hunched tenon and mortise, MITRE tenon and mortise joint, stub tenon, bare faced tenon, bridle joints etc. .</p>	<p>Classification and grading of timbers as per ISI. types of the grains. Joineries: Classification of joint (framing, Angle broadening and the lengthening)</p> <p>Framing Joints:- Halving, Mortise and tenon joints, Bridle joints- description, types and uses. .</p>
VTC C-107	<p>Demonstration and making Dovetail joints – 1) Housing joints 2) Dovetail joints Dovetail marking and its applications. Single dovetail, Common dovetail, lapped dovetail, secret mitre dovetail joints, use of dovetail template etc</p>	<p>Angle joint: - Description, types size, uses etc.</p> <p>Seasoning of Timber: Types, advantages and disadvantages, stacking (vertical and horizontal) Moisture content in timber and its effect on timber, moisture meter and oven method. Characteristics of wood, Physical and mechanical properties of wood, qualities of good timber.</p>
VTC C-108	<p>Broadening joints: Demonstration and making different types of broadening joints - simple butt, rebatedbutt, pocket screw, secret pocket butt joint, glued butt, tongue and groove joints etc.</p>	<p>Broadening joints - description, types, and uses. Adhesives - types, uses etc.</p>
VTC C-109	<p>Lengthening joints demonstration and making: Different types of scarf joints - Table scarf, bevel scarf etc</p>	<p>Lengthening joints: Different types of scarf joints – Description and types of Table scarf, bevel scarf, tension scarf etc.</p>
VTC C-110	<p>A frame of using different type of joints - Small article involving above joints may be made. Simple wooden furniture making work: Demonstration and practice on - Making a small wall bracket. Prepare chalk box. Tea tray or office Tray.</p>	<p>Preservation of timber: Chemical treatment of timber - types, process etc. and preservatives used. Files: Types, grades, uses, care and maintenance. Uses of electrical portable jig saw , portable disc sander, portable electrical drill machine</p>
VTC C-111	<p>Application of boring tools: Use of country drill, hand drill, ratchet brace, breast drill. Portable electric drill machine and its uses. Use of different types of drill bits, hand augur, layout of a stool and make cutting list. Prepare a standard height. Taper legged stool as per lay out. Use of Adhesives.</p>	<p>Boring tools : Description and typesCountry drill, hand drill, ratchet brace, breast drill – parts, functions, size and use. Portable electric drilling machine - description, uses etc. Drill bits - type, size and uses. Calculation of timber required for stool. Prepare cutting list from drawing (sawn size and finish size). Hand augur – description, size &amp; uses.</p>
VTC C-112	<p>Demonstration and make layout of different furniture.</p> <p>Making notice board or display board. Use of hard board, ply wood and insulation board. Making a small rack/modern wall unit.</p>	<p>Description of timbers used in furniture making work: - Teak, Sal, Deodar and other wood as available in the local market. Conversion of timber : Parallel sawing, radial sawing, quarter sawing, tangential sawing etc. Design of Furniture's for different purpose :- Bed room, dining Hall, Library, Office, Work-shop, Class room.</p>

VTC C-113	<p>Making a small table. Demonstration and use of lock, hinges, hasp and staple etc. Making a small box with sunmica top.</p> <p>Demonstration on nailing screwing on job.</p>	<p>Kitchen, Garden etc. Manufacturing process of various boards and sheets, And their applications viz. - ply wood, block board, laminated board, hard board, insulation board etc. and their description, types, market size, use. Selection of sheets and matching grade and colour. addition with particle board, Hi-density board, and medium density board – their manufacturing, quality and their application.</p>
VTC C-114	<p>Wood carving exercises and use of carving tools and their sharpening</p>	<p>Tools required for carving ornamental works. Properties of wood. Preparation of bill of materials and simple estimation</p>
VTC C-115	<p>Preparation of surface - use Smoothing plane for knotty or interlocked cross grained timber by scraping, sand papering and portable sander application on finished surface. Varnishing on finished surface.</p>	<p>Method of preparation of surface for staining, tools and equipment required. Sand paper - types, grades, size &amp; uses. Portable sander machine and uses. Preparation of putty and use. Staining:- Type, process, methods and staining materials. Different staining methods applied for different timber.</p>
VTC C-116	<p>Furniture polishing:- Demonstration on how to make French polish, use of French polish and wax polish. Remove the polish and Re-polishing old furniture.</p>	<p>Description of French polish, wax polish, types and uses. Estimation of timber</p>

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**SECOND SEMESTER**

Course code no.	TRADE PRACTICAL	TRADE THEORY
VTC C-201	<p>Introduction &amp; demonstration, operational techniques of wood working machines. Uses of:-</p> <p>A) Band saw: - remove and refit of band saw blades setting and grinding and different Operation :- Ripping ,. Cross-cutting, curve cutting, beveling, chamfering etc.</p> <p><b>B)</b> Circular Saw: - Ripping, cross cutting, rebating , grooving etc.</p> <p>C) Planning Machine :- Surfacing, thicknessing, chamfering, edging beveling etc,</p> <p>D) Wood Turning lathe: - Use of turning tools, plain turning, taper turning and Turning different articles- Chisel handles, table lamp stand etc. Use of face plate, chuck etc.</p>	<p>Wood working machines: Description, types, sizes, parts, functions, operations. Safety precautions, care and maintenance. Oiling, greasing etc. of the following machines:</p> <p>A) Band Saw B) Circular saw C) Planning machine D) Wood Turning Lathe with Turning tools.</p> <p>Market form of timber. Conversion of timber method, advantages, disadvantages</p>
VTC C-202	<p>Demonstration and use of following</p> <p>A) Drilling Machine: Use of straight shank drills, taper shank drills, counter sinking bits etc.</p> <p>B) Grinding Machines :- Grinding of different types of tools, cutters, materials for jobs.</p> <p>C) Mortiser Machine.</p> <p>D) Universal wood working Machine.</p>	<p>Description, types, sizes, parts, functions, operations, safety precautions, care and maintenance etc. of the following machines</p> <p>A) Drilling Machine. B) Grinding Machine. C) Mortiser Machine. D) Universal wood working Machine. Calculation of timber – weight, area, volume etc</p>
VTC C-203	<p>Exercises.</p> <p>Identification of pattern making hand tools, use of contraction rule, show different type of pattern. Lay out of simple solid pattern on layout board. Making patterns as per checked layout. (Take help of wood working machines as much as possible.) Layout of split patterns. Marking and making split patterns. Making dowels for above pattern. Use of dowel pin. Use of nail, screws etc. Making templates. Use required machine wherever necessary.</p>	<p>Introduction to pattern making Hand tools. Contraction rule and different allowances. Shrinkage, drafting, machine allowances. Different types of timbers used in pattern making. Reading of blue print. Layout board and its use. Types of pattern and their uses.</p> <p>Split patterns -Types and uses. Dowel- types, size and uses in pattern making work.</p>
VTC C-204	<p>Marking and making patterns with self core and with core prints. Prepare core box and pattern. 1) Casting pattern 2) Machining position core print. Painting the pattern, core box etc. as per IS specifications.</p>	<p>Core and core prints: Types &amp; uses. Colour code as per IS specifications. Use of paints on pattern core, core box, core prints etc. Estimate volume of wood and other requirements for pattern making box.</p>

VTC C-205	<p>Allied Training :</p> <p>1) SIMPLE FITTING WORK –</p> <p>Safety precaution to be observed while using marking tools:</p> <p>Steel rule, Square, Scriber, divider, calipers, punch, hammer ,marking table, marking block etc. Use of hand tools: Hack saw, cold chisels, different types of file</p> <p>Skills : Filing, drilling, counter sinking, - tapping, dieing practice. Grinding of cold chisels, punch, drill bits etc. Marking and making hanging plate, corner plate, name plate, different types of clamps and angle plate use for wooden furniture. Use of nuts, bolts, washers, machine screws etc.</p>	<p>General safety in fitting shop. Marking tools: Types, specification, use, care and maintenance of tools: Steel rule,</p> <p>squares, scriber, divider, calipers, and other tools. Marking table, marking block etc. description, specification, uses etc.</p> <p>Use of bench vice and clamps. Types of drill bits, counter sinking tool, counter boring tool, taps and dies used in fitting work. Types of nuts, bolts, washers, machine screws etc.</p>
VTC C-206	<p>2) SHEET METAL WORK -</p> <p>Use of common hand tools and related with sheet metal work: Steel rule square, snips, sheet metal mallets, punch, hammer stakes etc. Development from drawing and able to make layout of simple pattern a) Parallel line method. b)Radial line method</p>	<p>Common Sheet Metal Tools:</p> <p>Description, types, use etc. Development of simple job viz. Square, cylinder, cone etc. Marking making templates for pattern making and carpentry work. Concept of shearing, punching, folding, bending etc.</p>
VTC C-207	<p>CARPENTRY BUILDING WORK Revision of basics joints related with carpentry building work. Marking and making door frame and door shutter. Making panel door, glazed shutter and fitting mouldings after fitting glass. Fitting produce used in door construction.</p>	<p>Introduction about carpentry work involved in building construction. Types of doorframes, door shuttersdescription, sizes, uses, advantages and disadvantages etc. Fittings used in door. Types of panels used in panel shutter, glazed shutter.</p> <p>Familiarization with the materials which is use in industries as substitute of wood. Characteristics of material, Mechanical properties, durability, Applications, etc.</p>
VTC C-208	<p>Marking and making windowframe and window shutters, use of protection bars. Exercises on roof trusses – Lay out marking roof trusses in reduced scale (Model types)- king post ,queen post etc.</p>	<p>Types of window frame andwindow shutters. Protection bars: types and uses. Roof trusses: King post, queen post etc. related terms, sizes construction etc.</p>
VTC C-209	<p>Exercises on simple floor construction and joints used therein. Exercises on partition construction. Repairing practice: Repair and reconditioning of 1.Hand tools and equipments. 2.Furniture, doors and windows..</p>	<p>Basic principle of repairing work and repairing technique of furniture, door, window, rack etc. Use of Nails, screws angle plate, bracket, nuts, bolts etc. for repairing work. Packing case:- Types, material and tools used. Types of hanging plates, corner plates etc. used in carpentry work. Economical factors and material estimate.</p>