

Syllabus

Crafting Wood with Hand Tools & Handy Machine

S. No.	Module	Sub-module	Details of Training Contents	
			Days	Content
1	Industrial Practices	Workplace Safety	1	<ul style="list-style-type: none"> Importance of safety in the workplace, overview of workplace safety. Understanding and using PPE, types of PPE (gloves, goggles, helmets, etc.), proper use and maintenance of PPE, and PPE requirements for specific tasks. Safe operation of machinery, identifying machine hazards, safe operation procedures. Electrical Hazard Awareness, basics of electrical safety, identifying electrical hazards, and safe practices for working with electrical equipment. Ergonomics and Injury Prevention, the importance of ergonomics, proper lifting techniques, and preventing repetitive strain injuries. Identify noise and vibration hazards, use hearing protection, and reduce exposure to vibration.
		Wood Science		<ul style="list-style-type: none"> Introduction of the basic structure of wood and wood based panels. Anatomy of wood (grain cell, property and structure of wood). Types of wood soft wood and hard wood. Interaction with different environment factors including shrinkage and swelling. Adhesives and their types and application area.
		Engineering Drawing		<ul style="list-style-type: none"> Fundamentals of Engineering drawing projection methods. Drawing reading, creating the part list and work plan Practice on joinery and cabinet specific drawing
2	Hand Tools	Introduction of Measuring Tools and their application	1	<ul style="list-style-type: none"> Types of measuring tools such as, steel ruler, Vernier caliper, roll meter and its usage
		Units of measurements and measurement transfer		<ul style="list-style-type: none"> Units of measurements and its conversion to another unit. Measurement transfer and its importance. Marking symbol & their scopes. Carpenter triangle and its importance. Hands on practice of these tools

		Marking tools and their application	1	<ul style="list-style-type: none"> Types of marking tools and application Try square & its application Miter square & its application Marking gauge & its application Angle gauge & its application Hands on practice of these tools
		Cutting tools and their application	2	<ul style="list-style-type: none"> Types of cutting tools and application Types of chisel & its application, Hand planer & its application Types of saw & its application Hands on practice of these tools
			2	<ul style="list-style-type: none"> Wood joints and types of wood joints such as lap joint, butt joint, dove tail joint, half dovetail joint, corner bridle joint, Tenon & mortise joint. Hands on practice session to create these joint.
3	Handy Machines	Circular Saw	1	<ul style="list-style-type: none"> Safety Practices during machining Specification of the machine, setting the machine for use, types of saw blades and their application area on different materials. Methods of cutting and holding the work piece by using tracks and clamps. Methods of precise cutting straight, miter, plunge and angle cut. Practical exercise: Executing the straight, miter, plunge and angle cut.
		Jig Saw	1	<ul style="list-style-type: none"> Machine specification, tool and its components. Safety Practices during machining Methods of cutting top down and bottom up approach Specification of the machine and the use of accessories to and types of saw blades and their application area on different materials. Methods of precise cutting straight, angle cut, intricate cuts, curve cut etc. Practical exercise: Executing the straight, angle cut, intricate cuts, curve cut etc.
		Miter Saw	1	<ul style="list-style-type: none"> Machine specification, tool and its components Safety Practices during machining Setting the machine to the correct angle and depth. Methods of precise cutting such as straight, angle cut, Miter cuts, repetitive cut, compound cut etc. Practical exercise: Executing the straight, angle cut, Miter cuts, repetitive cut, compound cut.

		Hand Router	1	<ul style="list-style-type: none"> • Introduction to the router and its basic principle. • Component of router, router bits' specification and its types • Safety practices during routing. • Setting the router for use, basic operation and precision routing techniques. • Hand on practice of router manually and with jigs, and the ability to handle a variety of materials and cuts and also be able to use router to a wide range of woodworking projects, from fine furniture and cabinetry to decorative and functional elements.
		Hand Planner	1	<ul style="list-style-type: none"> • Introduction to the hand planner and its specification and significance in woodworking. • Safety practices during operation. • Hand on practice of hand planner for wood shaping, smoothing, and finishing.
		Sander		<ul style="list-style-type: none"> • Overview of the Sanding process and its significance in Woodworking. • Understand types of sanders, grades, pore structures, and criteria for selecting the sanding papers. • Hands-on sessions with sanding machines to understand their specific functions and operations. • Practical Exercises.
		Hardware and Fittings	1	<ul style="list-style-type: none"> • Introduction to the basic fittings such as Butt hinges and their application. • Hands on practice.
4.	Re structure and repairing		1	<ul style="list-style-type: none"> • Demonstration to identify the cause of damage of a product and evaluating repair options this will enhance learners critical thinking and problem solving skills. • Hands on practice on repair and maintenance of damaged woodworking products.
5.	Project		4	<ul style="list-style-type: none"> • After completing all the module participant will create a project independently related to woodworking this would give to participant's ownership over their work.