

Introduction to Carpentry and Joinery

Introduction to Carpentry & Joinery – Study Notes

1. What Is Carpentry?

Aspect	Description
Definition	The trade of shaping, assembling, and installing wood (or wood-based) components to create structures, furniture, and fixtures.
Main Branches	• Rough Carpentry – structural framing, walls, roofs, floors. • Finish Carpentry – trim, molding, cabinetry, interior woodwork. • Cabinetry / Joinery – precise, often decorative, wood connections for furniture and built-in units.
Typical Workplaces	Residential/commercial construction sites, remodel shops, furniture workshops, shipyards, theatrical set shops.
Core Goals	• Safety and durability of the built environment. • Accurate dimensions and clean aesthetics. • Efficient use of material and labor.

2. Fundamental Tools & Equipment

Category	Tools (common)	Primary Use
Measuring & Layout	Tape measure, steel rule, combination square, framing square, marking gauge, laser level	Establish exact dimensions, mark cut lines, verify squareness.
Cutting	Hand saws (cross-cut, rip), backsaw, panel saw, circular saw, miter saw, table saw, band saw	Remove material to size; precision cuts for joinery.
Shaping & Finishing	Plane (bench, block), router, chisels, files, sanders (orbital, belt)	Smooth surfaces, create profiles, clean joints.
Joining	Hammer, nail gun, screw gun, drill/driver, doweling jig, biscuit joiner, pocket-hole jig, clamps (C-clamp, bar clamp, pipe clamp)	Assemble pieces using fasteners or traditional wood joints.

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Category	Tools (common)	Primary Use
Safety Gear	Hard hat, safety glasses, hearing protection, dust mask/respirator, gloves, steel-toe boots	Protect against impact, flying debris, dust, and heavy objects.

3. Basic Materials

Material	Typical Uses	Key Properties
Softwoods (e.g., pine, fir, spruce)	Framing, interior trim, low-cost furniture	Light, easy to cut, good strength-to-weight ratio.
Hardwoods (e.g., oak, maple, walnut, cherry)	Cabinets, high-end furniture, decorative trim	Dense, stable, attractive grain, higher wear resistance.
Engineered Wood (plywood, MDF, particleboard, OSB)	Sub-flooring, cabinets, wall sheathing, inexpensive furniture	Uniform strength, less warping, often cheaper.
Fasteners (nails, screws, dowels, biscuits, glue)	Connect wood pieces	Choose based on load, wood type, and finish requirements.
Finishes (stain, paint, varnish, oil, polyurethane)	Protect and beautify surfaces	Compatibility with wood type and intended use.

4. Core Joinery Techniques

Joint	Description	Typical Applications	Strength Notes
Butt Joint	Two pieces simply abut; reinforced with nails/screws or adhesive.	Simple frames, temporary fixtures.	Weakest; relies on fasteners.
Lap Joint	Overlapping sections cut to half thickness; creates a flush surface.	Door frames, simple shelves.	Better shear strength than butt.

**Dovetail