



Woodworking Class Curriculum

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Woodworking Class Curriculum

Course Description

This Woodworking Class is designed to emphasize activities in planning, design and construction as applied to common forms of wood working. Accuracy, neatness, sound work habits and safety are stressed and form an important part of the evaluation criteria. Students acquire knowledge and skills through demonstrations, educational media and practice projects. Proper and safe use of tools, abrasives, adhesives, fasteners, finishes, is part of this curriculum.

Goal

Demonstrate proper use of all tools, pass the safety test with 100% on all tools, initial woodworking project assigned to students, additional choice projects selected and built by student, encourage students to develop a spirit of “Craftsmanship” in all the work they do.

Woodworking Class

Woodworking I

Full furniture making process from drafting to finishing, and gives students a solid foundation in hand joinery skills and safe use of machines for stock preparation. (8 weeks)

Woodworking II

It is a continuation of woodworking I class. However student will handle more in-depth skills & techniques for more structured furniture (8 weeks)

Wood Carving

Learning relief carving and sculpture, and other techniques suitable for furniture and architectural ornamentation. (4 weeks)

Wood Turning

Learning spindle work for making furniture components and faceplate turning for making ornaments, bowls, and platters. (4 weeks)

Upholstery

Learning upholstery work (such as webbing, batting, foaming, and stapling) for making cushions in fabric, vinyl or leather for your furniture. (1 week)

Stained Glass

Learning designing stained glass lamps, soldering, cutting stained glass.,etc (4 weeks)

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Metal Work

Learning how to make metal components like pulls, knobs, decorative ornaments for your furniture (4 weeks)

SketchUp

Learning how to make woodworking plan and drawing by using Google SketchUp (4 week)

Acoustic Guitar Making

Learning how to make acoustic guitar and learn the comprehensive Luthier's skill for repairing the guitars. (2 - 4 weeks depends on your woodworking skills and experience). You will build an OM sized, a Flat Top / or a Slightly Arched Top (40' Radius), All Solid Martin Originally Designed Guitar. You will, from start to finish, all skills to build an acoustic guitar and we will teach you about tools, jigs, fixtures, wood, and inlay. The course will not cover "Finishing" because of long term period of finishing material's curing time. For example, For Lacquer Spray Finish, you need more than 10 times spraying and then buffing / Polishing after 3-4 weeks after curing.

Weekday Class

Learning woodworking basics and making a simple utility box. (4 hours / day)

Weekend Class

Learning woodworking basics and making a simple jewelry box. (8 hours / day)

Basic Tool List

You don't need to bring your own tools for most of the classes. However, all individual student will bring your own safety glasses, tape measure, and hearing protection. Carving classes usually require a different set of tools. Please ask carving tools when you register if you attend the carving class. We strongly recommend that as you take more advanced classes you should plan on putting your own tool kit together. The following is the suggested beginning for general furniture making classes.

6" or 12" adjustable square

Pencils & Notebook

Tape Measure

Card Scraper & Burnisher

Hand Planes (Block Plane, #4 Smoothing Plane, #5 Jack Plane, Shoulder Plane - Suggested)

Layout Knife (Bi-Directional)

Bench Chisels

Japanese Razor Saws

Back Saw or dovetail Saw

Safety Glasses

Hearing Protection

Dust Mask



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For a student from outside of United States, order execution service is available for delivering tools at the class before it starts. A student can carry them by themselves when they go back home. Please contact inhim studio for an availability of this service.

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Woodworking Glossary

- Adhesive

A substance that is capable of bonding material together by surface attachment.

- Air Dried

Lumber stacked and stored so that it is dried naturally by the exposure to air.

- Aliphatic Resin

The adhesive ingredient in yellow wood glue such as Elmer's Carpenter's Glue.

- Allen Head

A screw head with a recess requiring a hexagon shaped key, used mainly on machinery. These may be

in metric or SAE sizes.

- Annual Growth Ring

The layer of growth to the circumference of a tree in a season, easily recognizable in many woods by the difference in cells formed during the early and late parts of the season.

- Applied Carving

Background which is worked separately and then applied, rather than being worked in place.

- Apron

A frame around the base of a table to which the top and legs are fastened.

- Arbor

A stub shaft on a machine to turn blades or other cutting wheels.

- ATB

Alternate Top Bevel, where the teeth on a saw blade are angled in alternating opposite directions.

- Awl

Pointed instrument that looks like an ice pick, useful for marking positions when laying out a project.

- Back Saw

A handsaw with a rectangular blade with a reinforcing rib along the back for stability, types include razor saws, veneer saws, dovetail saws, and miter box saws.

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- Band Clamp

Also known as a web clamp, a flexible strap connected to a ratchet device to clamp irregular shaped objects.

- Band Saw

A saw with a looped blade running around two or three wheels. Used with narrow blades for cutting freehand shapes, and with wider blades and a guide for resawing material.

- Bark

The outer protective layer of a tree.

- Barrel Hinge

A type of hinge for a box and its lid, consisting of two small cylinders that are recessed into holes drilled

into those components in order to make the connection nearly invisible.

- Bead

A semicircular piece of moulding.

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- Beading Tool

A tool to create one or more beads, may be referred to as a scratch stock.

- Bench Dogs

Pegs which go into holes in the top of a workbench that work with a vise to hold wide material.

- Birds-eye Figure

A figure on wood, usually maple and a few other species, composed of many small rounded areas resembling a birds eye.

- Biscuit Joint

An oval shaped disk that when inserted in a slot with glue swells to form a tight bond. A special tool is

required to cut the slot.

- Blade Stabilizers

Metal disks approx. 3 1/2" in diameter that go on each side of a saw blade to minimize flexing and rim vibration.

- Block Plane

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A small plane designed for cutting across end grain.

- Board Foot

Measurement of lumber equal to one square foot an inch thick or 144 cubic inches. Multiply width in inches X length in inches X thickness in inches, divide by 144 for total board feet.

- Bookmatch

Successive layers of veneer are arranged side by side to resemble a mirror image of each other.

- Bow

A warp along the length of a board.

- Box Joint

Square shaped finger joints used to join pieces at right angles.

- Brace and Bit

This is a hand drill with a crank shaped handle with a flat knob on the end, special auger bits with a square tapered shank fit into a two jaw chuck. This is an ancient system but still works well when jobs are done by hand.

- Brad Point Bit

Similar to twist drill but with a flat bottom and sharp point.

- Butt Joint

A joint where the edges of two boards are against each other.

- Branding Iron

A tool for burning a name or logo on to wood, electric or flame heated.

- Calliper

An instrument with two legs, one of them sliding, used to measure the thickness of objects.

- Carbide Tipped

Extremely hard steel pieces with sharp cutting edges fastened to cutting tools such as saw blades, and

router bits.

- Card Scraper

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A flat blade with a burred edge used for smoothing.

- Carcass

The case or box of a piece of furniture, it is the rough framework and structure of the item.

- Carpenter's Pencil

Rectangular shaped pencil, about 1/4" X 1/2", with a 1/16" X 3/16" lead.

- Chamfer

To bevel the corner of a board at a 45° angle.

- Check

A defect caused by uneven shrinking of the wood during drying, a checked board has splits which develop lengthwise across the growth rings.

- Chuck

An attachment to hold work or a tool in a machine, lathe chucks and drill chucks are examples.

- Closed-Coat

When the grit on sandpaper covers 100% of the backing paper it is referred to as closed-coat. This is used for sanding hardwood and fine finishing.

- Collet

A type of chuck that accepts a fixed shaft size, commonly used on routers.

- Combination Square

A square that measures both 90 degree and 45 degree angles.

- Common Grade Lumber

Lumber with obvious defects, used in construction framing.

- Compass

An instrument for drawing circles consisting of two legs joined at a pivot hinge.

- Compound Miter

An angled cut to both the edge and face of a board, most common use is with crown moulding.

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- Countersink

A special drill bit that allows a screw head to sit flush with the face of the material it is driven into.

- Cross Cut

A cut which runs across the board perpendicular to the grain.

- Cupping

This is when the edges of a board bend with the grain away from the center to form a concave shape.

- Curl

A term to describe what happens to wood as it grows. Curly wood looks like sand on the beach or river bottom with repeated ripples in the grain. The grain goes up and down causing the unusual look in the wood. Also called "tiger" grain or "fiddleback".

- Dado

A groove in the face of a board, usually to accept another board at 90 degrees as in shelf uprights.

- Deciduous

Trees that shed their foliage annually, commonly referred to as hardwood.

- Dial Gauge

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This measuring instrument has a circular graduated face and a pin which activates a rotating pointer to

measure variation in movement in thousands of an inch.

- Dovetail Joint

A joint where the fingers are shaped like a doves tail, used to join pieces at 90 degrees.

- Dowel

A wood pin used to align and hold two adjoining pieces.

- Dowel Center

Metal buttons that go into a predrilled dowel hole to mark the position for drilling the second piece.

- Dressed Size

The dimension of lumber after being surfaced by a planer.

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- Epoxy Glue

A two part glue that practically glues anything to anything, including metal to metal.

- European Hinge

A hidden style hinge fastened to the door with a cup hole.

- Face

When a board has one side that is wider than the other, the wider side is referred to as the face (as opposed to the edge). May also refer to the side that is to be visible in the finished item.

- Face Frame

A flat frame attached to the front of a cabinet, usually to conceal the exposed edges of the plywood panels used to build the carcass.

- Featherboard

Pieces of wood with fingers used to hold material against a fence and or down against the table on power tools such as a table saw.

- Fence

A straight guide on a tool such as a table saw or router table to keep the material a set parallel distance

from the blade or cutter.

- Fiddleback

Describes wood, usually maple or mahogany but can be any wood, with Curl or Tiger grain material with fine grain used in the manufacture of violins, hence the name.

- Figure

A naturally occurring decorative patterns in wood, usually due to medullary rays.

- Filler

A substance that is used to fill pores and irregularities on the surface of material to decrease the porosity before applying a finishing coat.

- Finger Joint

Long tapered fingers used to join material lengthwise, often used in manufacturing moulding to join short lengths.

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- Flat-sawn

A method of sawing lumber where the log is cut tangential to the growth rings, also called plain-sawn.

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- Flush

When two adjoining surfaces are perfectly even with one another. See Proud and Shy.

- Fret Saw

A saw with a very fine toothed blade used for delicate cuts in thin material.

- Forstner Bit

These have a center spur and circular rims with cutting teeth that cut clean flat bottomed holes.

- Good One Side

Plywood with one side patched solid and sanded, the other side will be rough and have open knot holes.

- Gouge

A chisel like tool with a curved cutting edge.

- Grain

The appearance, size and direction of the alignment of the fibres of the wood.

- Green Lumber

Freshly cut lumber that has not been dried.

- Grit

The grade of particles in sandpaper or sharpening stones which determines the aggressiveness of the cut.

- Gum Pocket

An excessive local accumulation of resin or gum in the wood.

- Hand Plane

A tool to smooth and true wood surfaces, consisting of a blade fastened in frame at an angle with hand grips to slide it along the board.

- Hardboard

A manufactured board similar to particle board but with a much smoother surface, commonly referred to as

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Masonite, a popular brand.

- Hardwood

Lumber from the group of trees with broad leaves, this has no reference to the actual hardness of the wood.

- Heartwood

The wood from the pith extending to the sapwood, darker in colour due to gum, resins, and other materials

which make it less susceptible to rot.

- Hinge

A mechanical device that connects two solid objects, allowing rotation between them.

- Hold Down

A type of iron clamp, fitting into a hole in a bench, tightened or loosened by hammer taps.

- Hollow Grinding

A concave bevel on a chisel, gouge, or knife.

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- Horned Dado

This is caused by the outside blades of a stacked dado head cutting deeper than the chipper blades.

- Infeed

The side of a power tool where a board enters.

- Janka Test

A hardness test, usually for wood flooring, rating is pounds of pressure required to press a steel ball .444 inches

in diameter one half way into the wood.

- Jig

A device used to hold work or act as a guide in manufacturing or assembly.

- Jig Saw

A power tool that cuts by moving a blade up and down as it is guided through the cut.

- Joiner

A joiner is a type of a carpenter that cuts and fits joints in wood.

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- Joint

The point at which two or more peices of wood are joined together.

- Jointer

A machine to true the edges of boards usually in preparation for gluing.

- Kerf

The width of a saw cut, determined by the thickness and set of the blade.

- Kick Back

This is when a workpiece is thrown back by a cutter, prevented using anti-kick back devices on power tools such as table saws.

- Kiln

A heated chamber for drying lumber where the air flow, heat and relative humidity can be controlled.

- Kiln Dried

Lumber dried in a kiln.

- Knockdown

A furniture design that allows it to be easily disassembled by the use of special hardware or joinery.

- Knot

The portion of a branch or limb that is embedded in the wood.

- Laminate

The product of bonding layers together as in beams or plywood.

- Linseed Oil

Is an amber-colored, fatty oil extracted from the cotyledon and inner coats of the linseed. The raw oil extracted from the seeds by hydraulic pressure is pale in color and practically without taste or odor. When boiled or extracted by application of heat and pressure, it is darker and has a bitter taste and an unpleasant odor.

- MDF

Medium density fiberboard, very stable underlay for counter tops etc. to be covered with laminate.

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- Milk Paint

A paint made with milk solids, chemically akin to casein glue, often the original finish on antique furniture.

- Mission Style

Mission Style is a design that emphasizes simple horizontal and vertical lines and flat panels that accentuate the grain of the wood (usually oak). Gustav Stickley produced Arts and Crafts furniture often referred to as being in the Mission Style.

- Miter Box

An apparatus to guide a saw to make miter joints.

- Miter Gauge

A guide with an adjustable head that fits in a slot and slides across a power tool table to cut material at an angle.

- Miter Joint

Pieces are cut on an angle to make a joint.

- Molding (Moulding)

A strip of material with a profile cut on the facing edges, used for trimming.

- Morse Taper

The standard for the taper on the shanks of drill chucks, drill bits and lathe centers. The different size tapers are designated by numbers, #1 being the smallest, #3 is common for drill chucks.

- Mortise

A cavity or hole cut to allow a tenon to pass through to make a joint.

- Muntin

A strip of wood or metal separating and holding panes of glass in a window or door.

- Nominal Size

The rough sawn dimension a finished piece of material is referred to, for example what is referred to as a 2 X 4 is actually 1 1/2" X 3 1/2".

- Ogee

An S shape that is made by making one cut to produce two identical pieces.

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- Open-Coat

Grit covering 70% or less of the surface backing of sandpaper is referred to as open-coat. This is used on softer wood or paint removal because the chips will not clog the sandpaper as easily.

- Outfeed

The side of a power tool where the board exits.

- Particle Board

A generic term for material manufactured from wood particles and bound together with glue.

- Phillips Head

A type of screw head requiring a driver in the shape of +.

- Pilot Bit

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A router bit with a bearing at the end of the cutter that rides against the edge the material or a template to guide the cut.

- Pitch

The number of teeth on a saw blade per inch.

- Pith

The soft core in the center of a log.

- Plain Sawn

Boards are sliced from the log with the cut tangent to the growth rings.

- Plane

Also referred to as a bench plane, a tool for smoothing and flattening boards

- Plumb

A term used to describe something that is perfectly perpendicular to the earth relative to gravity. A plumb bob

on the end of a string will give you a line that is plumb or straight up and down.

- Plunge Router

A router in which the motor can slide down into the base to insert the bit in the material.

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- Plywood

A glued wood panel usually 4' X 8' made up of thin layers of wood laid at right angles to each other.

- Pocket Hole

A hole drilled on an angle with a step bit to make a butt joint. The larger hole is for the screw head to enter, and

the smaller hole is for the shank.

- Primary Wood

This is the wood that is on the main or primary surfaces of a piece of furniture. These are the premium or money

woods of the cabinet. Woods of lesser value, that are on the sides or not seen is called Secondary Wood.

- Proud

To just protrude above the surface so it is sticking out a bit.

- Quarter Sawn

Boards which have been cut so that the wide surfaces are approximately 90 degrees to the annual growth rings,

this type of cut reduces cupping of the boards.

- Rabbet

A groove in the edge or face of a board, usually a rabbet is referred to on the edge, a dado is referred to on the face.

- Rack and Pinion

A system using two gears, one round, one flat to move a part, an example would be a drill press, a round gear

connected to a handle works with a flat gear on the column to raise and lower the table.

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- Radial Arm Saw

Circular saw that runs on an overhead track, the track mechanism swings in relation to the table to make miter cuts.

- Radial Drill Press

A drill press with the head mounted on a tube which is laterally and vertically adjustable, this type gives greater throat clearance but is not as solid as a conventional drill press so run out can be a problem.

- Rail

A horizontal member between chair legs or between styles or vertical members of a door frame.

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- Raised Grain

The roughened condition of sanded wood when the hard latewood rises above the soft earlywood when moisture is applied.

- Rake

The angle at which the leading edge of the teeth are cut on a saw blade.

- Rasp

A long and flat steel tool with raised teeth for shaping wood, some rounded on one side.

- Rip Cut

A cut which runs through the length of a board parallel to the grain.

- Robertson Head

A screw head requiring a driver with a square tip, also referred to as a socket head.

- Rotary Planer

A power hand tool with rotating blades that smooths the surface of material.

- Rough Lumber

Boards which are sawn, edged and trimmed but not run through a planer.

- Router

Basically a high speed motor with handles and an adjustable base with a collet that accepts profile bits to cut dados, rabbets, or shapes.

- Sandpaper

A form of paper where an abrasive material has been fixed to its surface.

- Sapwood

The wood lighter coloured wood on the outside of a log, this wood is more susceptible to rot than heartwood.

- Sawhorse

A trestle usually used in pairs to hold wood for cutting.

- Seasoning

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The time it takes for wood to dry. Wood air-dries and takes one year for every inch of thickness. It refers to a year, a season.

- Secondary Wood

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This is the material used in furniture that is not seen or on the sides or back of an object. These are the materials that make up the drawer sides, dust panels, backs and other hidden parts.

- Set

The teeth are offset on each side of the blade to allow clearance for the thickness of the blade.

- Shaper

A machine with an interchangeable rotary cutter head to cut profile shapes on the edge or face of material.

- Shellac

Resin flakes dissolved in alcohol used as a finish for wood.

- Shy

A term for an adjoining object being below the object it is next to. This means a little below the surface. See

Proud and Flush.

- Snipe

The tendency to gouge the trailing end of material when running it through a joiner.

- Softwood

Wood manufactured from trees with needles or scalelike leaves, has no reference to actual hardness of the wood.

- Spade Bit

These are an inexpensive bit, suitable for general use, they get their name from their shape.

- Splating

A change in the texture, strength and color of wood caused by colonies of fungus growing within the dead wood.

- Spline

A thin strip of wood fitted between two grooves to make a joint.

- Spokeshave

Used to shape curved surfaces, consists of a blade fastened between two handles, blades come in straight,

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concave and convex curves.

- Square

An instrument used to lay out or test right angles, with two arms at 90 degrees to each other, the longer and

wider arm is the blade, the shorter narrower arm is the tongue.

- Stacked Dado Head

This style of dado cutter has two outside saw blades, the width of the dado is set using a combination of chipper

blades and shims between them.

- Stickers

Strips placed between layers of lumber for drying.

- Story Stick

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A "Story Stick" or "Story Pole" is a scrap strip of wood used to record dimensions for a project on site, then the dimensions are used in the shop to build the project. This method reduces the chance of error due to misreading numbers etc.

- SWMBO

"She Who Must Be Obeyed"

- Style or Stile

A vertical member of a door framework attached to the horizontal rails.

- T-slot

A slot milled in the shape of an upside down T to hold special bolts for clamps or jigs.

- Table Saw

A circular saw mounted under a table with height and angle adjustments for the blade.

- Tack Cloth or Tack Rag

A cloth permeated with a sticky substance to wipe up the dust from sanding when finishing a project.

- Taper Cut

A cut where the width decreases from one end to the other, these are usually done on a table saw with a jig.

- Tearout

The tendency to splinter the trailing edge of material when cutting across the grain.

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- Template

A pattern to guide the marking or cutting of a shape, often a router is used with a piloted bit.

- Tenon

A projection made by cutting away the wood around it to insert into a mortise to make a joint.

- Thickness Planer

A power-fed rotary planer that trims the surface of a board to a certain thickness.

- Toggle Clamp

Clamps which can be attached to a base or table to hold work.

- Tongue and Groove

A joinery method where a board has a protruding tongue on one edge and a groove on the other, the tongue of

one board fits into the groove of the next.

- Torx Head

A screw head requiring a driver in the shape of a star.

- Try Square

A square with a steel tongue in a wooden handle.

- Turning

An ornamental or functional part formed by rotating it on a lathe and shaping it with a chisel pointed tool.

- Twist

A longitudinal twisting of wood due to uneven seasoning or grain.

- Varnish

A liquid preparation that dries to a hard lustrous coating.

- Vee Joint

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Tongue and groove boards with their top corners beveled so when the two boards come together a V is formed.

- Veneer

A thin layer of expensive wood bonded to a thicker piece of cheaper plywood to give the appearance of the

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expensive wood but at a reduced price.

- Warp

To bend or twist to the pull of the grain in the wood.

- Winding Sticks

Two narrow, thin, pieces of material whose edges are perfectly parallel which are placed on each end of a

workpiece. The worker then sights across the top of them to determine if the piece is flat.

- Witness Marks

These are marks put on boards or pieces to keep them in order during gluing, joining and assembly.

- Wobbly Dado Head

A single blade dado cutter where the blade is adjusted to wobble the width of the cut.

- X-Acto Knife

This is a razor like blade in a handle, the blades come in various shapes, very handy for fine work.

- Yardstick

A wooden rule 36" long.

- Zero Clearance Insert

A blank insert for a table saw, the blade is raised up through it to create a kerf close to the sides of the blade.