

ARIZONA CTE PROGRAM STANDARDS & MEASUREMENT CRITERIA

CABINETMAKING, 46.0400.40	
1.0	DEMONSTRATE BUSINESS OPERATIONS IN A SHOP
1.1	Estimate the cost of a job (supplies, materials, labor, overhead)
1.2	Develop a materials order from a cut list and plan
1.3	Explain industry standards as related to the quality of products and materials
1.4	Use customer service skills to be successful
2.0	DEMONSTRATE GENERAL SHOP SAFETY
2.1	Explain the importance of shop safety
2.2	Maintain appropriate appearance and safe work attire
2.3	Wear appropriate PPE equipment (personal protective equipment) when needed (e.g., eye protection, ear protection, impact hat)
2.4	Use equipment safety features according to manufacturer's recommendations
2.5	Use proper lifting techniques
2.6	Examine health-related problems related to exposure to hazardous materials
2.7	Examine the benefits of using dust collection
2.8	Comply with government regulations regarding health and safety in the shop [e.g., OSHA (Occupation Safety and Health Administration), EPA (Environmental Protection Agency), and DNR (Department of Natural Resources)]
2.9	Comply with lockout/tagout rules and procedures
2.10	Handle, use, and store chemicals according to MSDS/SDS sheets
2.11	Apply fire safety rules and procedures
3.0	DEMONSTRATE BASIC CABINETMAKING SKILLS
3.1	Apply math skills to solve problems related to cabinetmaking, including written instructions to complete a task
3.2	Calculate linear feet, square feet, and board feet
3.3	Tally lumber products
3.4	Measure accurately and convert to standard and/or metric measurement systems as required
3.5	Lay out straight and angled cuts

These standards were validated by a Technical Standards Validation Committee on March 20, 2014. First testing date using the new standards will be Fall 2014.

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3.6	Determine plumb, level, and square
3.7	Handle and store wood products
3.8	Specify wood stock for species, grade, grain patterns, and color compatibility
4.0	PRACTICE SAFE AND APPROPRIATE USE OF HAND AND PORTABLE POWER TOOLS
4.1	Use steel rules/tapes, squares, T-bevels, and calipers
4.2	Use planes and cabinet scrapers to smooth surfaces
4.3	Use wood chisels to notch or mortise stock
4.4	Drive and set nails and screws
4.5	Fasten materials using a pneumatic stapler or nailer
4.6	Use a circular saw to make straight, beveled, and compound angle cuts
4.7	Use a saber/jig saw to plunge/cut curves
4.8	Drill holes with a portable power drill
4.9	Use a power drill to bore holes to specified depth
4.10	Create pocket screw joints using a drill and jig
4.11	Use a router to shape edges; cut a groove, dado, and rabbet
4.12	Use a router with a dovetail jig
4.13	Use plate/biscuit joiners for square and angled joints
4.14	Use sanders for roughing and finishing
4.15	Use a belt sander and grinder to scribe cut a product
4.16	Clean and maintain hand and portable power tools
5.0	PRACTICE SAFE AND APPROPRIATE USE OF STATIONARY MACHINES
5.1	Use a table saw to make rip, cross, miter, bevel, and groove cuts
5.2	Select, change, and set up blades on a table saw
5.3	Use a radial arm saw to make cross, miter, and compound angle cuts

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5.4	Select, change blades, and adjust for squaring on a radial arm saw
5.5	Use a miter/sliding miter saw to make cross, bevel, miter, and compound miter cuts
5.6	Select and change blades on a miter saw
5.7	Use a band saw to cut irregular shapes and re-saw materials
5.8	Select, change, or replace band saw blades
5.9	Set up and use a drill press
5.10	Use a jointer to square, bevel, and flatten stock
5.11	Use a router in a router table
5.12	Use a surface planer to smooth surfaces
5.13	Utilize a hollow chisel mortiser
5.14	Set up and use a line boring machine
5.15	Set up and use a lathe for woodturning
6.0	EXAMINE COMPUTER NUMERICAL CONTROL EQUIPMENT (CNC)
6.1	Explore various CAM (Computer Aided Manufacturing) software for programming CNC (Computer Numerical Control) manufacturing equipment
6.2	Explore various CNC equipment and equipment operations, including 3-dimensional technology
6.3	Demonstrate CNC equipment operation (actual or simulated)
6.4	Program CNC machines to produce a part
7.0	INTERPRET PLANS AND BLUEPRINTS TO CREATE A PRODUCT
7.1	Read and interpret blueprints
7.2	Extract information from plans for design and specifications
7.3	Verify design plans with field measurements
7.4	Create a cut list
7.5	Create a bill of materials
8.0	CUT AND SHAPE PRODUCTS

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8.1	Mill rough lumber to create S4S (surfaced on four sides) stock
8.2	Cut sheet goods to size and shape
8.3	Create basic woodturnings
8.4	Create basic mouldings
9.0	DEMONSTRATE COMMON JOINERY APPLICATIONS
9.1	Layout and cut butt joints
9.2	Reinforce butt joints using dowels, screws, biscuits, and pocket screws
9.3	Layout and cut a dado joint
9.4	Layout and cut a rabbet joint
9.5	Layout and cut a lap joint
9.6	Layout and cut a miter joint
9.7	Layout and cut a tongue and groove joint
9.8	Layout and cut a mortise and tenon joint
9.9	Layout and cut a dovetail joint
9.10	Layout and cut a box joint
10.0	ASSEMBLE PRODUCTS USING FASTENERS, ADHESIVES, AND HARDWARE
10.1	Explain the purpose and applications of common fasteners
10.2	Explore various fasteners and RTA (Ready To Assemble) connectors
10.3	Explain the purpose, types, and applications of common adhesives
10.4	Use adhesives appropriate to the application
10.5	Use various clamping devices
10.6	Demonstrate various ways to remove excess glue
10.7	Assemble drawer components

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10.8	Explore cabinet installation using fasteners and levelers
10.9	Fasten stock with metal fasteners (e.g., nails, screws, and staples)
10.10	Construct case/box
10.11	Assemble panel doors
10.12	Attach moulding and trim
10.13	Explore common uses and applications of jigs and fixtures
10.14	Fasten a top to the casework
10.15	Install cabinet hardware
10.16	Reinforce joints with block
11.0	APPLY WOOD VENEERS AND LAMINATES
11.1	Cut veneers and laminates with appropriate saw blades and router bits
11.2	Seam two pieces of veneers and/or laminates
11.3	Apply adhesive
11.4	Apply edge banding
11.5	Apply veneers and/or laminates to core
11.6	Apply wood edges
11.7	Cut veneers and/or laminates to size
11.8	Fit veneers and/or laminate joints
11.9	Trim edges
12.0	DEMONSTRATE FINISHING MATERIALS AND PROCESSES
12.1	Explain the purpose and applications of various types of finishes and finishing processes
12.2	Select finishing materials for compatibility
12.3	Follow a finish schedule
12.4	Apply filler to a wood surface

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12.5	Apply a seal coat to a wood surface
12.6	Select and use appropriate abrasive types and grit sizes
12.7	Stain a wood surface
12.8	Apply clear coat finishes to wood surfaces
12.9	Apply pigmented finishes to wood surfaces
12.10	Use cleanup methods according to safe and approved methods (OSHA, EPA, DNR)
12.11	Repair blemishes/touch up finishes