Course Description
This is the first instructional course in a sequence that prepares individuals to apply technical knowledge and skills to lay out and shape stock; assemble projects; saw and sand projects; and stresses the safe use of a variety of hand and power tools and machinery. Recommended projects would be anything that would allow students to incorporate all joints and tools, e.g. a nightstand.

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<th>Intended Grade Level</th>
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<td>Endorsement 1</td>
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<td>Endorsement 3</td>
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STRAND 1
Students will understand woodworking design and theory.

Standard 1
Understand basic elements of the woodworking industry.
- Identify career opportunities in cabinetmaking/millwork manufacturing.
- Identify career opportunities in related millwork industries by using career pathways.
- Soft Skills Ethics: be on time, etc.

Standard 2
Understand basic plan elements.
- Read and use a scale drawing to create a project.
- Use a material list.
- Use a procedure list.

Standard 3
Understand and demonstrate basic math and measuring concepts.
- Add two- and three-digit numbers.
- Subtract two-, three-, and four-digit numbers.
- Solve two-digit divisor numbers.
- Multiply a two-digit factor.
- Add, subtract, multiply, and divide fractions and mixed numbers.
- Convert fractions to decimals.
- Reduce fractions.
- Add, subtract, multiply, and divide decimal numbers.
- Calculate percentages and basic rations.
- Add and subtract linear measurement in feet and inches.
- Use a ruler or measuring tape to measure within a sixteenth (1/16) of an inch.

Performance Skill
Understand woodworking design and theory.
- Understand basic elements of the woodworking industry.
- Understand basic plan elements.
- Understand and demonstrate basic math and measuring concepts.

STRAND 2
Students will understand and demonstrate the safe use of woodworking tools.

Standard 1
Understand and demonstrate the safe use of hand tools.
• Describe the purpose and demonstrate the proper use of the following measuring and layout tools:
  • Measuring tape
  • Scratch awl
  • Framing square
  • Combination square
  • Try square
• Describe the purpose and demonstrate the proper use of the following cutting and shaping tools:
  • Hand plane
  • Wood chisel
  • Wood file/rasp
  • Hand saw
  • Glue scraper
  • Putty knife
• Describe the purpose and demonstrate the proper use of the following striking tools:
  • Claw hammer
  • Nail set
  • Dead-blow hammer
• Describe the purpose and demonstrate the proper use of the following drill bits:
  • Twist
  • Multi-spur bit
  • Spade
  • Countersink
  • Driver bits: Phillips, Square, Flat

**Standard 2**
Understand and demonstrate the safe use of portable power tools.
• Describe the purpose and demonstrate the proper use of the following portable power tools:
  • Pneumatic/power nail gun
  • Power drills
  • Router
  • Finish sander
  • Orbital sander

**Standard 3**
Understand and demonstrate the safe use of power machines.
• Describe the purpose and demonstrate the proper use of the following sawing machines:
  • Table saw
WOODWORKING

- Power miter saw
- Band saw

- Describe the purpose and demonstrate the proper use of the following surfacing machines:
  - Surface planer
  - Jointer

- Describe the purpose and demonstrate the proper use of the following sanding machines:
  - Disc sander
  - Wide belt sander
  - Spindle sander
  - Edge sander

- Describe the purpose and demonstrate the proper use of the following shaping machines:
  - Router table
  - Shaper

- Describe the purpose and demonstrate the proper use of the following drilling machine:
  - Drill press

Performance Skill
Understand and demonstrate the safe use of woodworking tools.
- Understand and demonstrate the safe use of hand tools.
- Understand and demonstrate the safe use of portable power tools.
- Understand and demonstrate the safe use of power machines.

STRAND 3
Students will understand processing materials.

Standard 1
Understand and demonstrate safe practices.
- Demonstrate the ability to work safely in a cabinet shop following general safety rules.
- Demonstrate the safe use of woodworking tools and machines.
- Define SDS and know its purpose.
- Pass a written safety test with a score of 100 percent.

Standard 2
Understand and demonstrate the use of fasteners and adhesives.
- Identify the various woodworking fasteners and the application of each.
  - Nails
  - Screws
  - Staples
• Properly use an adhesive in the construction of a project.
• Identify the different types of clamps.
  • Bar
  • “C”
  • Spring
  • Handscrew

**Standard 3**
Understand wood products, characteristics, and procedures.
• Identify softwoods.
  • Pine, red cedar
• Identify hardwoods.
  • Cherry, oak, alder, walnut, maple

**Standard 4**
Identify common manufactured materials.
• Plywood
• Particle board
• MDF

**Performance Skill**
Understand processing materials.
• Understand and demonstrate safe practices.
• Understand and demonstrate the use of fasteners and adhesives.
• Understand wood products, characteristics, and procedures.
• Identify common manufactured materials.

**STRAND 4**
Students will understand milling and assembly.

**Standard 1**
Understand and demonstrate the use of joinery.
• Identify the basic woodworking joints.
  • Butt
  • Miter
  • Rabbet
  • Dado
• Construct a basic woodworking project using basic joints.

**Standard 2**
Understand and demonstrate the use of project components and hardware.
• Complete a project.
• Identify common cabinet/furniture hardware.
  • Hinges – overlay, butt
  • Drawer guides (wood or metal)
  • Knobs and pulls

**Standard 3**
Understand and demonstrate sanding and finishing techniques.
  • Understand and properly apply the basic rules of sanding.
  • Properly prepare a surface for finishing.
  • Understand application methods of stain and clear finishes.

**Performance Skill**
Understand milling and assembly.
  • Understand and demonstrate the use of joinery.
  • Understand and demonstrate the use of project components and hardware.
  • Understand and demonstrate sanding and finishing techniques.

**STRAND 5**
Students will be able to perform automated manufacturing processes using CNC equipment.

**Standard 1**
Understand X, Y, Z axis.

**Standard 2**
Understand vector lines.

**Standard 3**
Define G-code.

**Standard 4**
Create a tool path.

**Standard 5**
Use a CNC machine to make a cut.

**Performance Skill**
Perform automated manufacturing processes using CNC equipment.
  • Understand X, Y, Z axis.
  • Understand vector lines.
  • Define G-code.
  • Create a tool path.
  • Use a CNC machine to make a cut.
STRAND 6

Students will understand the importance of career readiness skills as it relates to the workplace and outlined in the SkillsUSA Framework – Level 1.

Standard 1
Understand and demonstrate the attitude of cooperation.
- Develop awareness of cultural diversity and equality issues.
- Demonstrate effective communication with others.
- Apply team skills to a group project.
- Identify and apply conflict resolution skills.

Standard 2
Understand and demonstrate the ability of being resourceful and innovative.
- Discover self-motivation techniques and establish short-term goals.
- Measure/modify short-term goals.
- Review a professional journal and develop a three- to five-minute presentation.

Standard 3
Plan for your future career.
- Complete a self-assessment and identify individual learning styles.
- Define future occupations.
- Identify the components of an employment portfolio.
- List proficiency in program competencies.
- Complete a survey for employment opportunities.
- Create a job application.
- Assemble your employment portfolio.
- Employability skills: evaluate program comprehension.

Standard 4
Understand and demonstrate the ability to manage a project.
- Apply team skills to a group project.
- Observe and critique a meeting.
- Demonstrate business meeting skills.
- Explore supervisory and management roles in an organization.
- Identify and apply conflict resolution skills.
- Demonstrate evaluation skills.
- Manage a project and evaluate others.

Skill Certificate Test Points by Strand

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