

STRANDS AND STANDARDS

WOODS 3



Course Description

The third in a sequence of courses that prepares individuals to apply technical knowledge and skills to lay-out, shape, assemble, and finish projects. Value is placed on developing craftsmanship, a production sense, and in design principles. This course emphasizes the development of widely understood and accepted design principles.

Core Code	38.02.00.00.263
Concurrent Enrollment Core Code	38.02.00.13.263
Units of Credit	0.5
Intended Grade Level	11-12
Prerequisite	Woods 1
Skill Certification Test Number	5203
Test Weight	0.5
License Area of Concentration	CTE or Secondary
Required Endorsement(s)	Woods

STRAND 1

Students will follow safety practices.

Standard 1

Identify potential safety hazards and follow general laboratory safety practices.

- Assess workplace conditions regarding safety and health.
- Identify potential safety issues and align with relevant safety standards to ensure a safe workplace/jobsite.
- Locate and understand the use of shop safety equipment.
- Select appropriate personal protective equipment.

Standard 2

Use safe work practices.

- Use personal protective equipment according to manufacturer rules and regulations.
- Follow correct procedures when using any hand or power tools.
- Ref: <https://schools.utah.gov/file/4de1dd59-0425-4f76-9e33-fdcf5de45dbf>

Standard 3

Complete a basic safety test without errors (100%) before using any tools or shop equipment.

STRAND 2

Students will develop foundational skills in design principles.

Standard 1

Create projects using a working drawing and utilizing a list of materials while demonstrating the safe use of woodworking hand tools and equipment.

- Ref: <https://schools.utah.gov/file/2c4efa51-62bb-4ea6-85eb-948282eddb70>

Standard 2

Students will consider form, function, and joinery.

Standard 3

Students will follow established principles of good design.

For example:

- Balance/Symmetry
- Contrast
- Harmony/Unity
- Hierarchy/Emphasis
- Pattern/Repetition
- Proportion/Scale
- Space

Standard 4

Students will explore and compare the elements of established design styles.

For example:

- Art Deco
- Federal Period
- Mission
- Queen Anne
- Scandinavian

STRAND 3

Understand wood products, characteristics, and procedures.

Standard 1

Calculate board footage.

- $(\text{nominal thickness in inches} * \text{nominal width in inches} * \text{actual length in inches}) / 144$
- or
- $(\text{nominal thickness in inches} * \text{nominal width in inches} * \text{actual length in feet}) / 12$

Standard 2

Describe and identify natural defects.

- Warp (cup, twist, bow, crook)
- Cracks
- Bark inclusions
- Knots

Standard 3

Identify common grades of lumber and sheet goods.

For example:

Hardwoods

- FAS – Firsts & Seconds
- F1F – FAS One Face
- SEL – Select
- 1C – Number 1 Common

Sheet stock

- A
- B
- C
- D

Standard 4

Understand the methods of the seasoning and drying lumber.

- Standard moisture content levels for kiln and air-dried lumber.
- The effects of moisture on materials (expansion and contraction).

Standard 5

Demonstrate the use of basic joinery techniques.

For example:

- Spline
- Mortise & Tenon
- Lap
- Blind dado

Standard 6

Demonstrate sanding and finishing techniques.

- Understand and properly apply the basic rules of sanding.
- Select and correctly use each specified grit size.
- Properly prepare a surface for finishing.
- Properly apply stain, penetrating oil, and/or a clear finish.
- Properly apply a clear coat.

STRAND 4

Students will follow a disciplined design process to develop a project.

Standard 1

Understand the design, planning, and estimation process.

- Identify standard furniture dimensions relating to tables, seating, and shelving.
- Draw/sketch the necessary views of a selected project.
- Create a material list for the selected project and determine the project cost.

Standard 2

Create a mock-up of the project.

- Simplify the design where possible.
- Create a step-by-step plan for creating each element of the designed product.

Standard 3

Complete a finished product that showcases the woodworking and design skills developed by the student.

STRAND 5

Students will be able to perform automated manufacturing processes using CNC equipment to produce an assembly.

Standard 1

Know and understand basic terms related to CNC machines.

For example:

- Datum, Absolute Coordinates, and Relative Coordinates
- Depth of Cut (DoC), Speed, and Feed
- Tool Path, Cutter Radius, Conventional Milling, and Climb Milling

Standard 2

Configure a CNC machine and program it to cut out or shape the components of an assembly.

STRAND 6

Students will investigate future training opportunities and careers in woodworking.

Standard 1

Investigate different types of occupational training.

For example:

- Trade school
- Community College
- University

Standard 2

Recognize the importance of both “hard” and “soft” skills in the workplace.

Performance Skills

1. Complete a finished product that showcases the woodworking and design skills developed by the student.
2. Assemble a portfolio of design concepts supporting the design development of the main project for this course.
3. Demonstrate practice of the *Technology & Engineering Professional Workplace Skills*.
<https://schools.utah.gov/file/fd0c16aa-8bee-4d07-85b5-88e0c913790e>
4. Participate in a significant activity that provides each student with an opportunity to render service to others, employ leadership skills, or demonstrate skills they have learned through this course, preferably through participation in a Career & Technical Student Organization (CTSO) such as SkillsUSA.

Skill Certificate Test Points by Strand

Test Name	Test #	Number of Test Points by Strand						Total Points	Total Questions
		1	2	3	4	5	6		
Woods 3	5203	3	5	15	5	5	5	38	36