

WOODWORKING

Grade Level:	10-11-12
Prerequisite:	Must take semester in sequence. <u>Woods II must have teacher approval</u>
Length:	1 Year
Period(s) Per Day:	1
Credit:	1
Credit Requirement Fulfilled:	Vocational/Elective
Career Pathways:	Carpenter, cabinet maker, draftsman

Course Objectives and Expectations:

1. Acquire an appreciation for working with wood and create an interest for a life-long hobby.
2. Develop good work habits such as working with a, detailed set of plans, using a good plan of procedure, and demonstrating pride in their work.
3. Encourage student self-esteem by completing a wood working project that requires hard work and dedication.
4. To create a greater awareness to safety in our everyday routines.
5. Use critical thinking and problem solving techniques in building class projects.

Student Objectives:

The Students will be able to:

1. Identify all woodworking tools and machines, list safety rules for each and properly operate.
2. Use drafting technology for creating or reading a working drawing.
3. Develop a detailed plan of procedure for construction a wood working project
4. Calculate an accurate bill of materials for a woodworking project.
5. Identify different construction materials.
6. Identify and use correctly different wood joints and fasteners.

Pacing :

Montana Standards for Career and Vocational Technical Education

Scale Reading	5.II.1
Math in Wood working	5.II.1
Tool and Machine Identification and Operation	4.II.1-3, 5.II.4

Wood Joints and Fasteners	4.II.1-3, 5.II.4
Wood Identification	4.II.1-3 , 5.II.4
Wood Finishing	4.II.1-3 , 5.II.4
Wood Carving	4.II.1-3 , 5.II.4
Project Construction	4.II.1-3 , 5.II.4

Content:

1st Semester

Scale Reading and Math in woodworking

- I. Scale Reading Procedure
 - a. Types of scale and graduations
 - b. Line heights
 - c. Practice worksheets and tests
- II. Math in woodworking
 - a. Adding and subtracting fractions
 - b. Multiplying and dividing fractions
 - c. Changing decimals to a useable fraction

Tool and Machine Identification and Operation

- I. Hand Tools
 - a. Identification
 - b. Using hand tools-hand tool block
- II. Machine Identification: parts, correct operation, safety
 - a. Jointer and Planer
 - c. Power Miter Saw
 - d. Table Saw
 - e. Band Saw
 - f. Drill Press
 - g. Shaper
 - h. Router
 - i. Lathe
- III. Machined Block
 - a. draw orthographically
 - b. discuss procedure
 - c. machine experience

Wood Joints and Fasteners

- I. Eight Basic Joints: usage and construction
 - a. butt
 - b. miter
 - c. mortise and tenon
 - d. tongue and groove
 - e. dado
 - f. rabbet
 - g. lap
 - h. dovetail

Wood Identification

- I. Lumbering
 - a. Quarter sawing, plain sawing
 - b. Seasoning
- II. Identification
 - a. Hardwoods-oak, walnut, mahogany, cherry, birch, et al.
 - b. Softwoods- pine, fir, cedar
- III. Measuring and defects
 - a. Warps, splits and checks, et al.
 - b. Board Feet - thickness, width and length terminology

Project Construction

- I. Project Plan Sheet
 - a. Plan of Procedure
 - b. Bill of Materials

2nd Semester

Wood Finishing

- I. Sanding
 - a. types of grit and sizing
 - b. machines and procedure
- II. Finish
 - a. Basic types oil and clear
 - b. Application

Wood Carving

- I. Safety
 - a. thumb guard, gloves and procedure
- II. Carving

- a. Pull cut, push cut
- b. Bear project

Project Construction

- I. Project Plan Sheet
 - a. Plan of Procedure
 - b. Bill of Materials

Timeline:

Scale Reading and Math	1 week
Hand Tools	1 ½ weeks
Machine Operation	3 ½ weeks
Wood Joints	2 weeks
Wood Identification	1 week
Wood Finishing	1 week
Project Construction	22 weeks
Wood Carving	2 weeks
Woodworking DVDs and videos	2 weeks

Resources:

Montana Standards for Career and Vocational Technical Education