Machine Woodworking
Course Design
2002-2003

Course Information

Organization:	Eastern Arizona College
Division:	ITE
Course Number:	IAR 120
Title:	Machine Woodworking
Credits:	3
Developed by:	Bill Karlinsey and Larry Woodside
Lecture/Lab Ratio:	1 hour lecture, 6 hours lab per week
Transfer Status:	NT to ASU, NT to UofA, Transferrable to NAU as DEC.
Extended Registration Class:	yes
CIP Code:	48.0701
Assessment Mode:	portfolio
Semester Taught:	Fall and Spring Semesters
Gen. Ed. Area:	None
Separate Lab:	No
Awareness Course:	No
Intensive Writing Course:	No
Prerequisites:	1. None
Educational Value:	This course will provide woodworking experience to students who want to go into the field of Technical Education and to students in general education. Many adult education students will find the opportunity to learn procedures to build their own desired projects.
Goals:	1. Students will learn advanced principles of machine tool operation for woodworking machines and advanced methods of woodworking joinery.
Description:	Use of power tools, industrial applications, proper structural relationships, and strength of wood construction. Students will be charged for some supplies.
Textbooks:	None. --. This textbook is not required.
Supplies:	Students will be required to furnish supplies for their own projects.

Competencies and Performance Standards

1. Demonstrate safe and proven methods of shop procedures.

***Domain**--Cognitive* ***Level**--Application* ***Importance**--Essential* ***Difficulty**--Low*

Criteria-- Criteria - Performance will be satisfactory when:	**Conditions--** Competence will be demonstrated:	**Learning Objectives:**
• learner practices recognized safety procedures in the shop at all times and always uses the prescribes safety equipment. • learner demonstrates an ability and willingness to follow designated procedures.	• by completing assigned projects. • by using correct tools for each task and using them correctly.	a. Identify the causes of accidents in the wood shop environment. b. List the safety equipment required in woodshop operations. c. List the safety rules for each piece of wood shop equipment. d. Identify the conditions in the shop which could be considered hazardous.

2. Prepare complete project plans which are detailed and accurate.

***Domain**--Cognitive* ***Level**--Synthesis* ***Importance**--Important* ***Difficulty**--High*

Criteria-- Criteria - Performance will be satisfactory when:	**Conditions--** Competence will be demonstrated:	**Learning Objectives:**
• learner demonstrates an understanding of the planning process. • learner interprets drawings and all drawing symbols correctly. • learner produces a manufacturing outline to complete the assigned projects. • learner describes all of the processes necessary to complete the assigned project.	• using the tools and equipment in the EAC woodshop.	a. Learn to interpret drawings and drawing symbols. b. Learn the planning process. c. List the steps in preparing project manufacturing outlines. d. Choose hardware and fittings appropriate for the assigned projects.

3. Set up and operate all shop saws correctly.

***Domain**--Psychomotor* ***Level**--Practice* ***Importance**--Essential* ***Difficulty**--Medium*

Criteria-- Criteria - Performance will be satisfactory when:	**Conditions--** Competence will be demonstrated:	**Learning Objectives:**
• learner adjusts the tilt angle and the depth of cut on the table saw and the radial arm saw. • learner adjusts the table tilt and changes the blade on the band saw. • learner sets the angle on the power miter saw. • learner sets up a dado blade on the table saw. • learner produces correct detail using the scroll saw. • learner uses the sabre saw for straight, curved and angle cuts.	• using the saws in the EAC wood shop.	a. Identify the adjustments and the adjustable parts in all of the woodworking saws. b. Demonstrate the correct operational procedures for all woodworking saws. c. Demonstrate correct material handling around woodworking saws. d. Make precise cuts on student projects using shop woodworking saws.

4. Use the wood lathe, planer, jointer and router to produce finished shaped surfaces.

***Domain**--Psychomotor* ***Level**--Practice* ***Importance**--Essential* ***Difficulty**--High*

Criteria-- Criteria - Performance will be satisfactory when:	**Conditions--** Competence will be demonstrated:	**Learning Objectives:**
• learner sets up the wood lathe correctly. • learner produces shaped surfaces on the wood lathe using turning and facing tools. • learner correctly adjusts the depth of cut on the planer and jointer. • learner installs the router bits on the router correctly. • learner demonstrates the correct use of the planer to produce finished surfaces. • learner demonstrates the correct use of the jointer to produce flat straight edges. • learner demonstrates the correct use of the router to produce correctly contoured surfaces.	• using the wood lathe, planer, jointer and router in the EAC wood shop.	a. List the parts of the wood lathe, woodworking planer, jointer, and router. b. Adjust the settings on the wood lathe, planer, jointer, and router. c. Select the correct router bit for each router job. d. List the safety hazards connected to each of these machines. e. Demonstrate correct operating procedures for the wood lathe, planer, jointer, and router.

5. Produce complete cabinet units to high stardards of craftsmanship.

***Domain**--Cognitive* ***Level**--Application* ***Importance**--Important* ***Difficulty**--High*

Criteria-- Criteria - Performance will be satisfactory when:	**Conditions--** Competence will be demonstrated:	**Learning Objectives:**
• learner identifies all the types of joints commonly used in cabinet making. • learner produces lap butt, mortise and tenon, lip rabbet, and dove-tail joints correctly. • learner produces face frames, using pocket drill and face frame screws. • learner correctly cuts, trims and installs plastic laminate. • learner installs all cabinet hardware properly.	• using the all the equipment and the tools and equipment in the EAC wood shop.	a. Describe common types of home cabinets. b. Demonstrate the strengths and weaknesses of various types of wood joints. c. Demonstrate the machine operations required to produce cabinet joints. d. Use a pocket drill to produce face frame joints. e. Show the procedures for all cutting, trimming and mounting of plastic laminate. f. Describe the different types of cabinet hardware and evaluate their utility.

Types of Instruction

Classroom Presentation
Lab

Grading Policy

Evaluation Methods: Students are graded on their student project, their attendance and their professionalism. Final evaluation is summarized in a student portfolio.

Student project=75%
Attendance=15%
Professionalism=10%

Grading Scale:

Grade	Requirement
A	89-100%
B	79-88%
C	69-78%
D	59-68%
F	58% or lower
Pass/Fail	59% or higher will be passing. 58% or lower will be a failing grade.

Learning Plans

Learning Plan 1-- Learning Plan 1

Overview: A series of learning activities and accessment activities are applied to each unit.

Competency: **1. Demonstrate safe and proven methods of shop procedures.**

Competency: **2. Prepare complete project plans which are detailed and accurate.**

Competency: **3. Set up and operate all shop saws correctly.**

Competency: **4. Use the wood lathe, planer, jointer and router to produce finished shaped surfaces.**

Competency: **5. Produce complete cabinet units to high stardards of craftsmanship.**

Learning Activities:

_____1. Read the information sheets given out by the instructor.

_____2. Participate in discussion of this material.

_____3. Participate in the demonstration of the assigned process.

_____4. Practice to develop skills in the assigned process.

_____5. Complete the assigned project.

Performance Assessment Activities:

_____1. Complete the assigned projects and turn them in for evaluation.