

**Course Title:** Exploratory Wood

**Textbook:** Exploring Woodworking – Fundamentals of Technology

**Instructor:** C. Haakenson

**Prerequisite:** None

**Course Value:** .25 unit – 1 Quarter

**Purpose:**

The purpose of Exploratory Wood is to introduce students to the process of changing raw material into a finished product and, in the process, become familiar with the various tools and processes used in the fabrication. Students who are interested in carpentry and the construction trades should enroll in this course.

**Course Outcomes:** The student will:

1. learn and follow an orderly process to create a project from an idea to finished product.
2. learn and demonstrate mechanical skills and basic knowledge of machine operation.
3. demonstrate safe work habits on the job.
4. follow directions.
5. critically evaluate good workmanship.
6. apply problem solving skills in the production of projects of various materials.
7. employ math and scale-reading skills in working with measurements.
8. demonstrate the ability to work with others on group projects.
9. develop a basic knowledge of abrasives and wood finishing procedures.

**Course Goals:** The goals of this course are to:

1. help students appreciate wood as an important part of everyday life and as a beautiful creation of God. In addition, it is hoped students will gain insight into the physical properties and applications of wood.
2. instill in the students a Christ-centered work ethic; i.e., good attendance, punctuality, cooperation, initiative, attitude, reliability, etc.
3. help students determine if God has given them the skills and interests which will allow them to successfully pursue careers in woodworking and related fields.

**School Outcomes:**

- #3. One of the projects will be accomplished by mass production method which will necessitate cooperation and effective communication with the group. Students are frequently paired to check each other's work and encouraged to help one another.
- #4. The skills learned in the exploratory level will serve as a basis for safe and meaningful experiences in further classes, work places, and home recreational pursuits.

- #5. Students will need to demonstrate good stewardship of time in order to complete the assigned projects. Stewardship of materials will be demonstrated by the sharing of tools and the wise use of materials to avoid excess scrap and waste.
- #5. Working with a variety of tools, techniques, and media, students will find areas they like or dislike. They will have opportunities to discover if they have an interest or aptitude for these types of activities. They will also be able to explore the gifts and talents their Creator has given them in this area.
- #6. Through reading and lecture, student will gain the vocabulary necessary to communicate in the field of trade and technology. Demonstration and practice will help them become familiar with the tools and processes used in woodworking.
- #7. By constructing a variety of projects, students will explore possible areas for career or hobby.

### **Course Outline:**

#### **Unit 1** Intro to Mfg. Materials and Processes

Students will learn:

- Machine operation and shop safety rules
- Layout tools
- Scale reading
- Reading and following project process sheet
- Sanding and finishing of wood

Number of days: 20-25

S.O.: 3,4,6,7

D.O.: 1.1, 3.4, 3.5, 4.3, 4.4, 5.2, 5.3, 5.4, 6.1

W.S.S.:

#### **Unit 2** – Ice Scraper Project

The student will learn:

- Processing plastic
- Finishing techniques for plastic
- Forming plastic
- Use CNC router

Number of days: 7 – 10

S.O.: 4, 6, 7

D.O.: 1.1, 3.5, 4.3, 4.4, 5.4, 6.1

W.S.S.:

#### **Unit 3** – Bookends Project

The student will learn:

- Working with tolerances
- Teamwork in checking
- Use of jig devices

Rabbeting techniques  
Countersinking screws  
Using patterns  
Use CNC router

Number of days: 15 – 20

S.O.: 2, 4, 6, 7

D.O.: 1.1, 2.4, 3.4, 3.5, 4.3, 4.4, 5.1, 5.4, 6.1

W.S.S.:

#### **Unit 4 – Mass Production – Cross**

The student will learn:

Mass production processes  
Processing standards  
Use of feather board  
Cutting grooves  
Cutting dados

Number of days: 7 – 10

S.O.: 2, 3, 4, 6, 7

D.O.: 1.1, 2.1, 2.2, 2.3, 2.4, 2.5, 3.4, 3.5, 4.1, 4.3, 4.4, 5.1, 5.3, 5.4, 5.5, 6.1, 6.2

W.S.S.:

#### **Unit 5 Careers (tba)**

### **APPENDIX:**

COURSE: EXPLORATORY WOOD

INSTRUCTOR: CARY HAAKENSEN

#### **Unit 1 – Intro to Mfg. Materials and Processes**

- 1.1 Apply the problem-solving process to challenging situations
- 3.4 Develop their gifts
- 3.5 Use abilities and interests for God-pleasing recreation
- 4.4 Recognize and practice effective work habits
- 5.1 Apply mathematical and scientific principles to industrial applications
- 5.2 Explore technologies
- 5.3 Produce products by using current technology
- 5.4 Produce products with high quality standards
- 6.1 Follow verbal and written direction

#### **Unit 2 – Ice Scraper Project**

- 1.1 Apply the problem-solving process to challenging situations
- 3.5 Use abilities and interests for God-pleasing recreation
- 4.3 Practice Christian stewardship of natural resources
- 4.4 Recognize and practice effective work habits
- 5.4 Produce products with high quality standards

6.1 Follow verbal and written direction

### **Unit 3 – Bookends Project**

- 1.1 Apply the problem-solving process to challenging situations
- 2.4 Encourage others
- 3.4 Develop their gifts
- 3.5 Use abilities and interests for God-pleasing recreation
- 4.4 Recognize and practice effective work habits
- 5.1 Apply mathematical and scientific principles to industrial applications
- 5.4 Produce products with high quality standards

6.1 Follow verbal and written direction

### **Unit 4 – Mass Production – Cross**

- 1.1 Apply the problem-solving process to challenging situations
- 2.1 Assist others in a common goal
- 2.2 Contribute to a common goal
- 2.3 Resolve differences of opinion in a productive manner
- 2.4 Encourage others
- 2.5 Respect and adapt to differences in others
- 3.4 Develop their gifts
- 3.5 Use abilities and interests for God-pleasing recreation
- 4.1 Use their gifts for the good of God’s kingdom in service projects
- 4.3 Practice Christian stewardship of natural resources
- 4.4 Recognize and practice effective work habits
- 5.1 Apply mathematical and scientific principles to industrial applications
- 5.3 Produce products by using current technology
- 5.4 Produce products with high quality standards
- 6.1 Follow verbal and written direction
- 6.2 Communicate clearly and precisely

## **WISCONSIN STATE STANDARDS**

### **Unit 1**

- A1 Contrast the increasing complexities of technology with its ease of use
- B5 Asses the impact new and improved products and services have had on the quality of life; explain how the development of new tools, materials and processes is necessary to maintain and improve high productivity and quality

### **Unit 2**

- C4 Select materials and other resources for a technological design and develop practical solutions
- C6 Design and/or create solutions that are functional, aesthetically pleasing, demonstrate quality, have value greater than the investment, and meet a societal want or need

### **Unit 3**

C6 Design and/or create solutions that are functional, aesthetically pleasing, demonstrate quality, have value greater than the investment, and meet a societal want or need

**Unit 4**

B3 Explain how enterprises apply technological systems for generating wealth by providing goods and services

C5 Identify constraints present in a given technological processes