**Course Syllabus**

**Materials & Processes I (#774)**

**1/2 Credit –Semester**

**Name** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Instructor:** Mr. Steve Hatfield

**Office:** Industrial Technology Office Back Left Corner

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**Prerequisite:** None

**Grades:** 9-12

**Text:** Wright, Thomas R. (1990). Processes of Manufacturing. Muncie, Indiana: Ball

 State University

**Course Description:** Students will be involved in a variety of activities that deal with two material types: woods and metals. The student will also be given information required to use hand and power tools safely and efficiently. A variety of techniques will be used to construct projects that not only teach about the materials but also the processes needed to construct the projects. Students will be challenged to use and enhance their critical thinking skills and their planning and problems solving abilities. This course is designed to apply what has been learned in other disciplines such as science and math.

**Goals:**

\*To develop insight and understanding of the processes used in industrial and commercial applications to construct projects/objects.

\*To develop safe work practices as it relates to hand and power tools as well as general laboratory operations.

\*To gain knowledge in the areas of woods, metals, and other related materials.

\*To gain knowledge of the types of occupations that deal with the main material areas such as harvesting, refinement, extracting, production, recycling, manufacturing, and design.

\*To read, interpret, and make simple sketches that are descriptive plans of products that can be made form common materials.

\*To develop insight and understanding in the area of material testing and measurement of design qualities.

\*To develop practical mathematical abilities as it relates to residential, industrial, and commercial applications. The use geometric principles, estimating, and measurement will be emphasized.

**Resources/Panther Time:** You must be here with a purpose and not just hang out. Panther time is limited to 10 students per session on a first come first serve basis. If you need to schedule a slot please ask me.

**Requirements/Projects:** Sheet Metal Tray, Sheet Metal Cell Phone Holder, Low Temperature Pewter Cast, Wooden Roll-Top Bread Box, Wooden Twist Pen, and Segmented Wooden Basket.

**Evaluation:** The following percentages are based upon the points earned for the term and are subject to change each term. The accumulation of points and further evaluation is an ongoing process. Grades are calculated on the points earned divided by the points possible. SIS and Parent Link should be consulted for the most current grades and for missing assignments.

**In class written activities 10% Unit Tests/Quizzes 15%**

**Projects 65% Final 10%**

**Course Schedule**

**I. Introduction/Organization/Safety**

 a. Use of Facilities/Class Organization

 c. General Safety--Hand tools, Power Tools, Laboratory

**II. Measurement**

1. Fractional
2. Tools
3. Applications

**III. Metals**

1. Sheet Stock
2. Alloy Casting

**IV. Woods and Wood products**

1. Types of Woods, Products, and Properties
2. Types of Tools and Operations
3. Types of Joints and Construction Techniques
4. Finishing

**Examinations:** Unit exams will follow each unit and will address both academic and laboratory operations. Quizzes will be relevant to laboratory operations as well as tools and machines.

**Portfolio/Notebook Requirement.** All students are expected to keep a notebook/portfolio for the class. See the notebook requirement sheet for further explanation.

**Make-up Policy:** Make-up/absence forms are located in the front of the classroom. Follow the directions on this form. The instructor will not remind you of missed tests and assignments or laboratory projects. This is your responsibility.

**\*\*\*\*\*\*If further explanation is required, see the instructor. \*\*\*\*\*\*\***

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