**Course Syllabus**

**Materials & Processes II (#7751)**

**1 Credit –Full Year**

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

**Instructor:** Mr. Steve Hatfield

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

**Phone:** (816) 892-1443

**E-mail:** steven.hatfield@raypec.org

**Prerequisite:** Successful completion of Materials and Processes I

**Laboratory Fee:** None

**Grades:** 11-12

**Text:** Wright, Thomas R. (1993). Exploring Manufacturing. Muncie, Indiana: Ball State University

**Course Description:** Students will be involved in a variety of advanced activities dealing with materials used in industry such as woods, laminates, metals, composites, glass, and adhesives. Use of machine tools such as engine lathes, mills, and precision measuring devices will be utilized. Students will be encouraged to build upon principles and knowledge learned in Materials and Processes I such as design concepts, safe use of tools and equipment, and material selection. Students will be introduced to industry concepts such as mass production, quality control, and precision inspection.

**Goals:**

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

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

\*To develop insight and understanding in the area of mass production and contrast the pros and cons.

\*To gain knowledge and practical experience in the area of machine tool technology and be able to use the engine lathe and mills to construct precision parts.

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

\*To gain knowledge of the types of occupations that use material and processing applications and show students that opportunities exist.

\*To utilize materials and procedures properly and efficiently.

**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 Bar-B-Que Grill, Machinist Hammer Head, Machinist Hammer Handle, Round Top Double Twist Pen made from laminated wood, Plastic laminated Oak Cabinet

**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 5%**

**Projects 75% Final 10%**

**Course Schedule**

**I. Introduction/Organization/Safety**

 a. Use of Facilities/Class Organization

 c. Safety revisited

**II. Precision Measuring**

1. Tools
2. Devices
3. Applications

**III. Metals**

1. Sheet Stock (advanced)
2. Machining applications
3. Manufacturing/Mass production

**IV. Woods and Wood products**

1. Advanced Machine Applications
2. Advance Joinery Techniques
3. Wood Products (uses and applications)

**V. Alternative Materials/Fasteners**

 a. Amorphous materials (glass)

 b. Laminates

 c. Composites

 d. Fasteners

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

**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. \*\*\*\*\*\*\***

f:mp2syllabus rev8-17