

University of Arkansas - Fort Smith  
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### General Syllabus

#### MACH 1444 Metals and Alloys

**Credit Hours:** 4      **Lecture Hours:** 2      **Laboratory Hours:** 4

**Prerequisite(s):** None

**Effective Catalog:** 2021-2022

#### I. Course Information

##### A. Catalog Description

Provides instruction on chemical, physical, and mechanical properties of different metals.

#### II. Student Learning Outcomes

##### A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Identify metals by appearance, weight, color, spark testing, as well as numeric and color codes
2. Identify and discuss mechanical testing and engineering principles of various types of metals
3. Identify and discuss the physical properties of various types of metals

##### B. University Learning Outcomes

This course enhances student abilities in the following areas:

##### **Communication Skills (written and oral)**

Students will proficiently and accurately interpret blueprints and mechanical data sheets and will effectively communicate to resolve issues or concerns.

##### **Ethical Decision Making**

Students will identify implications of producing and allowing defective components to be used.

**Global and Cultural Perspectives**

Students will identify cultural differences, compare and contrast the implications for interacting with people from other cultures in the context of international industry and customer service.

**III. Major Course Topics**

- A. Chemical of metals
- B. Physical properties of metals
- C. Mechanical properties of metals
- D. Metal applications for effective machining processes