

ARIZONA WESTERN COLLEGE
SYLLABUS

MFG 195 MATERIALS SCIENCE AND METALLURGY

Credit Hours: 3 Lec 2 Lab 2

PREREQUISITE: None

COURSE DESCRIPTION

Survey and application of materials science and metallurgy.

1. COURSE GOALS

- 1.1 Acquire an understanding of materials and materials science.
- 1.2 Develop the elementary mastery of laboratory practices, techniques and procedures associated with testing of materials.

2. OUTCOMES

Upon satisfactory completion of this course, students will be able to:

- 2.1 describe and discuss the three fundamental groups of materials properties.
- 2.2 prepare a sample for microscopic examination.
- 2.3 explain the structure of materials and the importance of said structure on macroscopic behavior.
- 2.4 describe the essential components of materials to be controlled to attain desired results in mechanical treatment, thermal treatment and service of materials.

3. METHODS OF INSTRUCTION

- 3.1 Lecture
- 3.2 Media presentations
- 3.3 Formal and informal discussions
- 3.4 Field assignments

4. LEARNING ACTIVITIES

- 4.1 The structure of materials
- 4.2 Production of ferrous materials
- 4.3 Production of non-ferrous materials
- 4.4 Iron alloys
- 4.5 Thermal treatment of materials
- 4.6 Mechanical treatment of materials
- 4.7 Corrosion

5. EVALUATION

- 5.1 Class participation and attendance required
- 5.2 Tests (4 per semester)
- 5.3 Assignments (technical report, class exercises, and homework)
- 5.4 Final examination and project
- 5.5 Quality of work

6. STUDENT RESPONSIBILITIES

- 6.1 Under AWC Policy, students are expected to attend every session of class in which they are enrolled.
- 6.2 If a student is unable to attend the course or must drop the course for any reason, it will be the responsibility of the student to withdraw from the course. Students who are not attending as of the 45th

day of the course may be withdrawn by the instructor. If the student does not withdraw from the course and fails to complete the requirements of the course, the student will receive a failing grade.

- 6.3 Americans with Disabilities Act Accommodations: Arizona Western College provides academic accommodations to students with disabilities through AccessABILITY Resource Services (ARS). ARS provides reasonable and appropriate accommodations to students who have documented disabilities. It is the responsibility of the student to make the ARS Coordinator aware of the need for accommodations in the classroom prior to the beginning of the semester. Students should follow up with their instructors once the semester begins. To make an appointment call the ARS front desk at (928) 344-7674 or ARS Coordinator at (928) 344-7629, in the College Community Center (3C) building, next to Advising.
- 6.4 Academic Integrity: Any student participating in acts of academic dishonesty—including, but not limited to, copying the work of other students, using unauthorized “crib notes”, plagiarism, stealing tests, or forging an instructor’s signature—will be subject to the procedures and consequences outlined in AWC’s Student Code of Conduct.
- 6.5 Texts and Notebooks: Students are required to obtain the class materials for the course.
- 6.6 Arizona Western College students are expected to attend every class session in which they are enrolled. To comply with Federal Financial Aid regulations (34 CFR 668.21), Arizona Western College (AWC) has established an Attendance Verification process for "No Show" reporting during the first 10 days of each semester.

Students who have enrolled but have never attended class may be issued a “No Show” (NS) grade by the professor or instructor and receive a final grade of “NS” on their official academic record. An NS grade may result in a student losing their federal financial aid.

For online classes, *student attendance in an online class is defined as the following* (FSA Handbook, 2012, 5-90):

- Submitting an academic assignment
- Taking an exam, an interactive tutorial or computer-assisted instruction
- Attending a study group that is assigned by the school
- Participating in an online discussion about academic matters
- Initiating contact with a faculty member to ask a question about the academic subject studied in the course