

ARIZONA WESTERN COLLEGE  
SYLLABUS

## MFG 185 QUALITY CONTROL AND INSPECTION

Credit Hours: 3 Lec 2 Lab 2

PREREQUISITE: Student must be eligible for MAT 105 and have a Reading Score of 65 or higher or instructor's signature

COURSE DESCRIPTION

Survey of quality control and inspection including: precision measurement, inspection techniques for non destructive and destructive testing, sampling plans, investigation methods, and assessment of process variables and controls used in the materials joining / welding manufacturing industry.

1. COURSE GOAL

- 1.1 Acquire an understanding of Quality Control, inspection, precision measurement and quality assurance management used in materials joining manufacturing.
- 1.2 Develop the elementary mastery of techniques, procedures and methods associated with skills and industrial practices associated with quality control used in materials joining manufacturing.

2. OUTCOMES

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

- 2.1 describe and discuss the parameters, variable and factors associated with non destructive testing (NDT), and destructive (DT) inspection and testing for quality control.
- 2.2 prepare the more common control charts, records and procedure documents used in industry.
- 2.3 explain the role and importance of variability and reliability as it relates to major materials joining process variables.
- 2.4 develop and prepare materials receiving, materials joining / welding procedure specifications and in process inspection documents using a recognized industry code such as the American Welding Society Structural Steel welding code.
- 2.5 conduct an investigation of a materials joining / welding qualification test specimen or manufactured product and develop the required inspection specifications, conduct the inspection and report the results as part of a class and or individual project.

3. METHODS OF INSTRUCTION

- 3.1 Lecture
- 3.2 Use of Instructional Technology presentations
- 3.3 Formal and Informal Discussions
- 3.4 Field Assignments
- 3.5 Lab activities

4. LEARNING ACTIVITIES

- 4.1 Metrology and Inspection
- 4.2 Quality Control / Assurance
- 4.3 Total Quality Management
- 4.4 Control Charts, reports and procedures
- 4.5 Non-destructive and destructive inspection
- 4.6 Organizational Aspects of Quality Control
- 4.7 Investigation and testing methods
- 4.8 Variance, reliability and major variable control outcomes
- 4.9 Student Project

5. EVALUATION

- 5.1 Class Participation Required
- 5.2 Written and practical test
- 5.3 Quizzes
- 5.4 Group and individual project
- 5.5 Assignments (technical report, class exercises and homework)
- 5.6 Final examination

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