ARIZONA WESTERN COLLEGE
SYLLABUS

WLD 224 TECHNICAL SPECIALIZED WELDING PROCESS
Credit Hours: _3__ Lec _1.5__ Lab _3__

PREREQUISITE: MAT 105 eligibility and a reading score of 61 or higher or ENG 100 eligibility
COREQUISITE: WLD 109

COURSE DESCRIPTION
Acquisition of knowledge associated with welding applications and processes to include plasma arc welding, resistance seam and spot welding, submerged arc welding, electroslag welding, laser beam welding, and electron beam welding; with special emphasis on the set up and use of submerged arc welding and gas metal arc welding automation equipment. Student will develop welding procedures for weld automation applications using robotic welding equipment and the use of welding simulation technology.

1. COURSE GOAL
   Develop an understanding of the science, technology and art of welding specific to processes using semi-automatic, automation and simulation control technology.

2. OUTCOMES
   Upon satisfactory completion of this course, students will be able to:
   - 2.1 demonstrate the safe use and set up of equipment for automated plasma arc cutting (PAC), resistance spot welding (RSW), gas metal arc welding (GMAW, submerged arc welding (SAW).
   - 2.2 demonstrate understanding of the theory and industrial applications for plasma arc cutting (PAC), plasma arc welding (PAW), resistance spot welding (RSW), gas metal arc welding (GMAW), submerged arc welding (SAW), electro slag welding (ESW), laser welding (LB) and electron beam (EB) welding.
   - 2.3 demonstrate ability to complete a cut or welding using PAC, SAW, RSW and GMAW robotic equipment according to a welding procedure specification by programming and setting up automation equipment to perform weld applications.
   - 2.4 demonstrate knowledge associated with qualifying as a welder in the performance of a weld using these procedures.
   - 2.5 demonstrate a variety of arc welding techniques using weld simulator technology.
   - 2.6 complete an in class oral presentation and written paper explaining power technology variables and parameters associated with weld processes automation equipment applications.
   - 2.7 demonstrate an understanding of welder certification requirements for industry by completing a guided bend test using weld simulator technology.
   - 2.8 demonstrate understating of the need for, use of, and selection of criteria associated with fume control systems.

3. METHODS OF INSTRUCTION
   - 3.1 Lecture
   - 3.2 Demonstration
   - 3.3 Multi-media presentation
   - 3.4 Formal and informal discussion
   - 3.5 Outside assignments
   - 3.6 Lab assignments

4. LEARNING ACTIVITIES
   - 4.1 Survey and development of PAW and PAC
   - 4.2 Survey and development of the wire-feed processes

4.3 Survey of EBW
4.4 Non-ferrous alloys and their weld ability

5. EVALUATION
5.1 Written examinations
5.2 Practical exams

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 Accessibility 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