

ARIZONA WESTERN COLLEGE
SYLLABUS

ECT 230 PROGRAMMABLE LOGIC CONTROLLERS

Credit Hours: 3 Lec 1 Lab 3

PREREQUISITE: ECT 210

COURSE DESCRIPTION

Introduction to programmable logic controllers (PLC) architecture and programming. Topics include: memory, instruction sets, addressing modes, serial/parallel interfacing, relay/ladder logic, and troubleshooting.

1. COURSE GOALS

Provide the students the understanding of PLC applications in the electrical industry.

2. OUTCOMES

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

- 2.1 Identify and explain the function of each block within PLC architecture and describe memory of a PLC.
- 2.2 Describe the PLC instruction set including addressing modes and write debug programs for a PLC.
- 2.3 Identify, explain and draw ladder logic symbols and diagrams and utilize these to troubleshoot a PLC system.

3. METHODS OF INSTRUCTION

- 3.1 Lecture
- 3.2 Demonstrations
- 3.3 Presentations
- 3.4 Lab activities

4. LEARNING ACTIVITIES

- 4.1 Class assignments
- 4.2 Reading
- 4.3 Lab assignments

5. EVALUATION

- 5.1 Exams/quizzes
- 5.2 Written/lab assignments
- 5.3 Participation

6. STUDENT RESPONSIBILITIES

- 6.1 Under AWC Policy, students are expected to attend every session of class in which they are enrolled.
- 6.2 Classroom Assignments: Students are responsible for work missed and for completing all work before the next class meeting. Students are responsible for participating in all oral drills and for taking all exams.

- 6.3 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 Students who are not attending as of the 45th day of the course may be withdrawn by the instructor.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.
- 6.4 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.
- 6.5 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.
- 6.6 Textbooks and materials: Students are required to bring notebook or looseleaf book, pens, pencils, dictionaries, and purchase textbook required for class.
- 6.7 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