

ARIZONA WESTERN COLLEGE  
SYLLABUS

## ECT 113 ELECTRICAL LIGHT COMMERCIAL

Credit Hours: 3 Lec 2 Lab 3

PREREQUISITE: TEC 100

COURSE DESCRIPTION

The application and selection of various type of motors and associated components, application and selection of various lighting with controls and advanced bending methods of conduit within the National Electrical Code requirements.

1. COURSE GOALS

- 1.1 Provides the student with training in commercial light industrial electricity.
- 1.2 Prepares students to identify NEC requirements for motors.
- 1.3 Develops the knowledge for various types of lighting fixtures.

2. OUTCOMES

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

- 2.1 Describe DC motor operations; identify types of DC motors.
- 2.2 Identify 3-phase induction motors, synchronous motors & single phase.
- 2.3 Identify types of adjustable speed loads, motor speed controllers and braking systems.
- 2.4 Identify types of motor encloses, framing designations and use of nameplate data.
- 2.5 Identify wye and delta connected motors.
- 2.6 Identify NEC installation and motor protection requirements.
- 2.7 Explain how the human eye operates with respect to characteristics of light.
- 2.8 Identify and install lamps, ballasts & various types of lighting fixtures.
- 2.9 Select occupancy and photo sensors, as well as lighting timers and energy management systems for various applications.
- 2.10 Identify minimum radius requirements and number of bends for various types of conduit.
- 2.11 Use equations to determine bend distances with respect to mechanical, electrical and hydraulic benders.
- 2.12 Use right angle mathematics to bend distances and circumferences of circles.
- 2.13 Make mechanical, hydraulic and PVC bends.

3. METHODS OF INSTRUCTION

- 3.1 Lecture
- 3.2 Demonstrations
- 3.3 Discussion
- 3.4 Assignments

4. LEARNING ACTIVITIES

- 4.1 Discussion

5. EVALUATION

- 5.1 Examinations

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