IMPERIAL VALLEY COLLEGE

380 E. Aten Road – Imperial, CA 92251 – Phone: (760) 355-6138 – Fax: (760) 355-6172

COURSE SYLLABUS Fall 2013: EWIR 110 Electrical Principles CRN 10677

MW 5:30-6:20 pm 1402
MW 6:30-9:45 p.m. 1402

Instructor: **Francisco Mayoral** Room: 1400-1402
Industrial Electronic Engineer
Master of Information Systems
E-mail: Francisco.mayoral@imperial.edu Message phone:760 554 9673

Course Overview:

This course meets NSF, IID and NABCEP guidelines; this course provides the electrical student with instruction in basic principles of electrical safety. Instruction will include an introduction to power plants and grid functions, electrical theory and test equipment, the use of NEC boxes, fittings and conductors, and the interpretation of related electrical blueprints and commercial/industrial/residential symbols, diagrams, and schematics used for wiring. Electrical principles of residential wiring will be the focus of instruction.

Student Learning Outcomes:

1. Describe conditions likely to affect severity of electrical shock while maintaining safety during installation.
(ILO1, ILO2, ILO3, ILO4)
2. Define and explain the difference between direct current and alternating current. (ILO2, ILO4)
3. Apply the basic power formula to power, voltage, and current. (ILO2, ILO3, ILO4)
4. Select essential tools for residential wiring and be able to discuss basic principles of tool use and care. (ILO2, ILO3)

Course Outline:

1 .- Technical math review for electrical calculations.
2.- Electrical safety, electrical shocks, hazards, and incident control.
3.- Overview of electrical power plants and grid transmission, distribution system.
4 .- Hand bending, equipment, and geometry for bending.
5.- Electrical theory, electromotive force(EMF) and electrical current.
6.- Measuring, current, and resistance with volt/amp meters.
7.- Electrical test equipment, electrical power, and electrical circuits.

8.- Introduction to National Electric Code (NEC), circuits, computation of resistance, ampacity tables, voltage drop and current flow.
9.- Basic of calculation and measurement of capacitance, induction and impedance.
10.- NEC, conductors, wire sizes, marking, and installation.
11.- Electrical blueprints, electrical symbols, schematics, and specifications.
12.- Types of switches, terminal, disconnects, and circuit interrups.

Text book Required:
Book: Modern Residential Wiring (Text book and Workbook) by Harvey N. Holzman based on the 2011 NEC. 9th Edition.
Support books
NEC 2011 handbook.

Attendance Policy:
Regular attendance in this course is expected for all students enrolled. Students must have an explanation for everyday they are absent. The only justifiable absences are injury or serious illness of the student or family member.

A student can be suspended if he/she is disturbing and/or is disrespectful in class.
Profane language is no permitted in the classroom.

Grading Policies and procedures:
Assignments and reviews must be completed by their due date or they will receive no credit.
You will receive notification of points earned on each assignment or reviews.
Assignments they are reading like homework or investigation for to get extra credits. Reviews, individual test, for support or help in the Mid Term and Final Examinations.
Shop practices must to be observed basic safety rules by teacher instructions.

Lab practices 45%
Exams 45%
Research, homework 10%
Total score 100%

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Interaction with the instructor and other students is an integral part of the learning process. However, all work submitted for grading must be your own. School policy states a student may be dropped from a course for cheating or plagiarizing.

Additional information: Please turn off or silence your cell phones, no texting or internet while in class. No music, no horseplay while in shop practices.

Grade scale
90 - 100 = A
80 - 89 = B
70 - 79 = C
60 – 69 = D

A total of 100 points grade is possible for this course if you are taking the course pass/no pass you will need the equivalent 70 % minimum to pass.

NEED FOR ASSISTANCE:

If you have any condition, such as a physical or learning disability, for which you need extra assistance, please provide your instructor with information regarding your special needs so that appropriate accommodations can be made. You should meet with the DSP&S support staff and counselors.

NOTICE:

The instructor reserves the right to modify, change or add the number of assignments or exams.