

Basic Course Information

Semester:	Spring 2016	Instructor Name:	Francisco Mayoral
Course Title & #:	Electrical Equipment and Spec. EWIRE 135	Email:	Francisco.mayoral@imperial.edu
CRN #:	20860	Webpage (optional):	
Classroom:	3113	Office #:	
Class Dates:	16 Feb - 10 Jun	Office Hours:	
Class Days:	Tue-Wen-Thr	Office Phone #:	
Class Times:	6:00-8:05 R, 6:00-9:10 T and W	Emergency Contact:	Dept Secretary Frances Arce
Units:	4		

Course Description

This course provides the electrical worker with instruction in basic lighting and NEC requirements for lighting fixtures for indoor and outdoor use; an introduction to motor basics, calculations, transformers, instruments for testing, wiring, protection, maintenance, and troubleshooting for various types of motors and motor controls; introduction to heating, ventilation, and air-conditioning (HVAC) systems, system maintenance equipment, and safety requirements for varied locations; principles of combustion, hazardous materials and their reactions in varied locations; and the use of safety equipment. (Nontransferable, AA/AS degree only)and industrial,symbols

Student Learning Outcomes

Upon course completion,the successful student will have acquired new skill,knowledge and or attitudes as demonstrated by being able to;

- 1.Describe and know the basic lighting fixtures with NEC requirements base on energy saving and efficiency. (ILO1, ILO2, ILO4)
- 2.Demonstrate familiarity with NEC requirements for type of motor and motor control, circuit loads, and code requirements. (ILO1, ILO2, ILO3. ILO4)
- 3.Describe and know the heating,ventilation and air conditioning (HVAC) systems,maintenance and troubleshooting. (ILO1, ILO2, ILO3, ILO5)
- 4.Obey basic safety on the equipment service and hazardous materials and their reactions in varied locations,base on NEC requirements.(ILO1,ILO2,ILO5)

Course Objectives

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

1. Demonstrate and practice electrical safety.
2. Interpret lighting layouts and fixtures schedules on commercial and industrial blueprints.
3. Design and install motor-control circuits for specific applications per NEC.
4. Calculate and install devices to improve the power factor at motor locations.
5. Select the correct instrumentation and perform motor and generator testing, including collecting and recording the pertinent data.

Textbooks & Other Resources or Links

1. **Modern Commercial Wiring** by Harvey N. Holzman 6th Edition ISBN 978-1-61960-854-2
Bibliographical, NEC (NATIONAL ELECTRIC CODE)

2. **Motor Control and Other Devices**

Course Requirements and Instructional Methods

Below is the Instructional Scale :

Breakdown (100 points)

Reviews: 20%

Shop practices: 30%

Midterm: 25%

Final: 25%

100%

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

Course Grading Based on Course Objectives

The course grade is based on total points accumulated during the semester. There is a maximum of 100 points. Very limited extra credit points may be available, either through some class participation activity, group work or perfect attendance. Failing to turn in regular assignments will stop you from being able to earn extra credit points and late assignments will have points subtracted.

Final Grades are calculated as follows:

Grade Points

A 90-100

B 80-89

C 70-79

D 60-69

F Below 60

Grading Rubrics: In addition to the percentages and points listed above the following grading rubric (standards expected) will be used when grading student assignments. The description that best fits your work will be the assigned grade.

Grade Rubric or Standard Expected

A Focused and clearly organized. Contains advanced critical thinking and analysis.

Convincing evidence is provided to support conclusions. Clearly meets or exceeds assignment requirements.

B Generally focused with some development of ideas, but may be simplistic or repetitive.

Evidence is provided to support conclusions. Occasional grammatical errors. Meets

assignment requirements, but does not exceed.

C Unfocused, underdeveloped, or rambling, but has some coherence. Minimal evidence is provided to support conclusions. Several grammatical errors. Meets

D Unfocused, underdeveloped, and/or rambling. Limited evidence is used to support conclusions. Serious grammatical errors that impede overall understanding. Does not address the assignment requirements

F Unfocused, underdeveloped, and/or rambling. Incomplete or too brief. No evidence is used to support conclusions. Serious grammatical errors that block overall understanding. Does not meet assignment requirements. Minimal to no student effort.

Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See [General Catalog](#) for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.

Classroom Etiquette

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor.
- Food and Drink are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed by the instructor.
- Disruptive Students: Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the [General Catalog](#).
- Children in the classroom: Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

Online Netiquette

- What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.
- Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others' opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple exclamation marks (!!!!)].

Academic Honesty

Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the important of acknowledging and safeguarding intellectual property.

There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

- **Plagiarism** is taking and presenting as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to "cite a source" correctly, you must ask for help.
- **Cheating** is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the [General Catalog](#) for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service.

Additional Student Services

- **Blackboard Support Site.** The Blackboard Support Site provides a variety of support channels available to students 24 hours per day.
- **Learning Services.** There are several learning labs on campus to assist students through the use of computers and tutors. Please consult your [Campus Map](#) for the [Math Lab](#); [Reading, Writing & Language Labs](#); and the [Study Skills Center](#).
- **Library Services.** There is more to our library than just books. You have access to tutors in the [Study Skills Center](#), study rooms for small groups, and online access to a wealth of resources.

Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the instructor or the [Disabled Student Programs and Services](#) (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313. Please contact them if you feel you need to be evaluated for educational accommodations.

Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid Student Health Fee.

- [Student Health Center](#). A Student Health Nurse is available on campus. In addition, Pioneers Memorial Healthcare District provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC [Student Health Center](#) at 760-355-6128 in Room 1536 for more information.
- [Mental Health Counseling Services](#). Short-term individual, couples, family, and group therapy are provided to currently enrolled students. Contact the IVC [Mental Health Counseling Services](#) at 760-355-6196 in Room 2109 for more information.

Student Rights and Responsibilities

Students have the right to experience a positive learning environment and to due process of law. For more information regarding student rights and responsibilities, please refer to the IVC [General Catalog](#).

Information Literacy

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC [Library Department](#) provides numerous [Information Literacy Tutorials](#) to assist students in this endeavor.

Anticipated Class Schedule/Calendar

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Week 1 Feb 16 - 18	Syllabus & Introduction , review of basic concepts and safety	
Week 2 Feb 23-25	Transformers	Feb 27 last add
Week 3 Mar 1- 3	Grounding	
Week 4 Mar 8-11	Branch circuits and feeders: Branch circuits loads	
Week 5 Mar 15-17	Branch circuits and feeders continuation Load computation procedure	
Week 6 Mar 22-24	Motor calculations motor circuits and NEC requirements March 28 to Apr 2 sprig break	
Week 7 Apr 5-7	Multi motor branch circuits and power factor corrections at motor terminals	
Week 8 Apr 12-14	Motor controls Midterm Apr 15	
Week 9 Apr 19-21	Emergency power	
Week 10 Apr 26-28	Hazardous location I and II	

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Week 11 May 3-35	Hazardous location III and other locations	
Week 12 May 10-12	Pools and fountains	May 14 Drop with "W"
Week 13 May 17-19	HVAC systems introduction	
Week 14 May 24-26	HVAC systems circuits	
Week 15 May 31, Jun 1,2	Maintenance and troubleshooting.	
Week 16 Jun 7-9	Final exam	

*****Tentative, subject to change without prior notice*****