

### Basic Course Information

Semester	<b>Fall 2021</b>	Instructor's Name	Jose (Joe) Roman
Course Title & #	<b>Electrical Feeder Service &amp; Circuits EWIR 125</b>	Email	<a href="mailto:jose.roman@imperial.edu">jose.roman@imperial.edu</a>
CRN #	<b>10645</b>	Webpage (optional)	<b>NCCERconnect</b>
Room	<b>3113</b>	Office (PT Faculty:809)	<b>3121</b>
Class Dates	<b>8/16/21 – 12/10/21</b>	Office Hours (n/a for PT Faculty)	<b>'Ask the Instructor' forum in NCCERconnect</b>
Class Days	<b>Face-to-Face</b>	Office Phone # Cell/Text phone	<b>(760) 355-5719 (760) 960-1782 (Include your name in text)</b>
Class Times Units	<b>Face-to-Face 4 Units</b>	Who students should contact if emergency or other absence	Dept Secretary: Tisha Nelson <a href="mailto:tisha.nelson@imperial.edu">tisha.nelson@imperial.edu</a> <b>760-355-6161 Tues &amp; Thurs/760- 355- 6361 Mon/Wed/Friday</b>

### Course Description

This course includes instruction in feeder service and branch load calculations for circuits and electrical appliances; introduction to and identification of electrical constructors; devices used for overprotection of loads, currents, circuits and fuses; fill requirements for boxes/raceways; principles of wiring devices, switches and receptacles and their locations; requirements for distribution equipment; settings for voltage, switch gear, circuits, and components; distribution system transformers and their characteristics; types of components; NEC requirements; methods for locating and troubleshooting problems. (Nontransferable AA/AS degree only)

### 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. Identify Alternating Current AC waveforms, power calculation in AC circuits, & transformers explain how they operate. (ILO1, ILO3, IL04)
2. Explain the technological advancements in electrical feeder service, branch circuits, overprotection of loads for motors, currents, circuits, fill requirements for boxes/raceways, & types of components that are NEC requirements for distribution system transformers & their characteristics. (ILO1, ILO2, IL04)
3. Understand the use of mechanical benders, sizing pull & junction boxes, electric lighting, conductor terminations & splices, grounding & bonding, motor theory & application. (ILO2, ILO3)
4. Discuss the rating systems for Overcurrent protective devices, equipment grounding, the operation of ground fault circuits interrupters and arc-fault circuit interrupters. (ILO1, ILO2, ILO3, IL04)

### Course Objectives

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

1. Demonstrate and practice OSHA safety & Lab procedures.
2. Explain & identify AC waveforms, unknown values in AC circuits..
3. Identify direct current (DC), alternating current (AC) motors & describe their operating characteristics.
4. Identify motor enclosures, frame designations, connections & terminal markings for AC motors.
5. Identify & select lighting fixtures for various applications, lighting controls, install lamp & ballast.

6. Use equations to find bend distances using mechanical benders.
7. Identify boxes, fittings, & specialty enclosures. Size pull & junction boxes.
8. Identify electrical connections, make wire connections, strip & train conductors.
9. Identify grounding requirements, service grounding methods & applications.
10. Size & select equipment grounding methods, bond service equipment & test for effective grounds.
11. Identify the NEC requirements for conduit bends.
12. Identify the NEC requirements for motors.

### Textbooks & Other Resources or Links

**NCCER Custom book-** Trainee Guide 2017 NEC Revision (Electrical Level 2/3) Pearson **Note:** You can purchase the eBook from NCCERconnect.

**Dewalt-**Electrical Professional Reference 2017 Code

**Motor Control e-Book-**Download Handouts through NCCERconnect

**National Fire Protection Association (2017).** *NEC - National Electrical Code Handbook (1st/e).*

NFPA (**Recommendation text**)

**Electrical materials** &/or handouts through NCCERconnect

### Course Requirements and Instructional Methods

We will be using NCCERconnect **not canvas** to conduct for classroom instruction, book assignments, &/or class online.

#### Logging into NCCERconnect : TBA

This will be given during 1<sup>st</sup> week of school (**Refer to Face-to-Face notes**).

### Course Grading Based on Course Objectives

The course grade is based on total points accumulated during the semester. There is a maximum of 1200 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:

Below is the Instructional Scale:

Breakdown (1200 points)

Exams: 550 Pts. (include Final Exam 250pts)

Assignments: 300 Pts.

Lab activities: 250 Pts.

**\*Participation: 150 Pts.**

Total points 1200

Teaching Methods: Discussion of assignments and instructional methods will be a combination of all methods of instruction, which can be classified as telling, lecturing, or discussing; showing or demonstrating.

**\*Participation- This Face-to-Face course will meet two days per week of lab and lecture. Therefore, class participation and lab will be part of your grade for this semester.**

Grade	Points
<u>A</u>	1200-1074
<u>B</u>	1073-960
<u>C</u>	959-840
<u>D</u>	839-720
<u>F</u>	Below 719

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**.

<b>Grade</b>	<b>Rubric or Standard Expected</b>
<u>A</u>	Focused and clearly organized. Contains advanced critical thinking and analysis. Convincing evidence is provided to support conclusions. Clearly meets or exceeds assignment requirements.
<u>B</u>	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.
<u>C</u>	Unfocused, underdeveloped, or rambling, but has some coherence. Minimal evidence is provided to support conclusions. Several grammatical errors. Meets
<u>D</u>	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
<u>F</u>	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. **Consider**: specifics for your class/program
- 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.
- 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.

#### **Academic Honesty**

- Plagiarism is to take and present 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 correctly 'cite a source', 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, or assisting others in using materials, which are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or 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 School 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) use of a commercial term paper service

#### **Additional Help – Discretionary Section and Language**

- Canvas support center: N/A
- Learning Labs: There are several ‘labs’ on campus to assist you through the use of computers, tutors, or a combination. Please consult your college map for the Math Lab, Reading & Writing Lab, and Learning Services (library). Please speak to the instructor about labs unique to your specific program
- Library Services: There is more to our library than just books. You have access to tutors in the learning 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. If you feel you need to be evaluated for educational accommodations, the DSP&S office is located in Building 2100, telephone 760-355-6313.

#### **Student Counseling and Health Services**

Students have counseling and health services available, provided by the pre-paid Student Health Fee. We now also have a fulltime mental health counselor. For information see <http://www.imperial.edu/students/student-health-center/>. The IVC Student Health Center is located in the Health Science building in Room 2109, telephone 760-355-6310.

#### **Student Rights and Responsibilities**

Students have the right to experience a positive learning environment and due process. For further information regarding student rights and responsibilities please refer to the IVC General Catalog available online at [http://www.imperial.edu/index.php?option=com\\_docman&task=doc\\_download&gid=4516&Itemid=762](http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762)

#### **Information Literacy**

Imperial Valley College is dedicated to help students skillfully discover, evaluate, and use information from all sources. Students can access tutorials at <http://www.imperial.edu/courses-and-programs/divisions/arts-and-letters/library-department/info-lit-tutorials/>

#### **Anticipated Class Schedule / Calendar**

The instructor will provide a tentative, provisional overview of the reading, assignments, tests, or other activity for the duration of the course. The faculty may find a table format useful for this purpose.

**Face-to-Face.**

**NOTE:** This semester will be **Face-to-Face** in the classroom. We will meet the 1<sup>st</sup> day in classroom to take attendance & roll call. **I will give course schedule in the electrical classroom on the 1<sup>st</sup> day.** Anybody that miss the 1<sup>st</sup> day will be drop & give other crasher to add the class. **It's important to be there on time!** 2<sup>nd</sup> day of class will be to register to NCCER (National Center for Construction Education & Research) to get a NCCER card number for online testing. NCCER is my Industry Certification that we use for all electrical courses. We will also be registered for Interplay Learner for virtual video base that I will assign you for lab assignment. **Notice:** CDC guidelines may give recommendation for social distance in the classroom for COVID-19.

**\*\*\*\*\*Lab Schedule Subject to Change by CDC Guidelines\*\*\*\*\***