



## Imperial Valley College Course Syllabus – EWIR 115: Electrical Wires & Protection

### Basic Course Information

|                   |   |                     |  |
|-------------------|---|---------------------|--|
| Semester:         | Spring 2021                             | Instructor Name:    | Jose (Joe) Roman   |
| Course Title & #: | EWIR 115: Electrical Wires & Protection | Email:              | <b>Jose.roman@imperial.edu</b>   |
| CRN #:            | <b>21050</b>                            | Webpage (optional): | NCCERconnect   |
| Classroom:        | Hybrid Online-TBA                       | Office #:           | 3121   |
| Class Dates:      | <b>2/16/21-6/11/21</b>                  | Office Hours:       | 'Ask the Instructor' forum in NCCERconnect   |
| Class Days:       | Hybrid Online-TBA                       | Office Phone #:     | (760) 355-5719   |
| Class Times:      | Hybrid Online-TBA                       | Emergency Contact:  | Dept Secretary: Tisha Nelson 760-355-6161 Tues & Thurs / 760-355-6361 Mon/Wed/Friday |
| Units:            | 4                                       | Class Format:       | Hybrid Online-TBA  |

### Course Description

This course wires installation and connection for conductor termination and splices; use of cable pulling instruments and NEMA and NEC standards for cable tray; installation of electrical services and electrical protection components and equipment; use of material take-off methods and troubleshooting techniques; identification of ratings for current breakers and fuses; regulations for sizing use and installation of relay switches, conductors and overrides, and application. (CSU)

### Course Prerequisite(s) and/or Corequisite(s)

None.

### 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. To discuss, define & identify the principles of Electrical Wiring & Protection that include branch circuits, feeders, electrical service & calculation. (ILO2, ILO3)
2. Explain the Electrical Wiring & Protection's principles, applications, configurations, sizing, components, wiring methods, materials for general use and overcurrent protection. (ILO1, ILO2)
3. Understand Electrical Wiring & Protection, electrical service & calculation, disconnects means, blueprint reading, grounding, installation, maintenance and troubleshooting utilizing National Electrical Code. (ILO2, ILO3)

### Course Objectives

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

1. Explain & explore many job titles related to electricity.
2. List safety procedures to follow when troubleshooting electrical circuits.
3. Explain procedures for testing fuses, receptacles, ground continuity, switches & fixtures.
4. Explain overloaded neutrals & unbalance currents.



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5. Know where to find codes & authorities for an installation using NEC.
6. List the different conductor systems used in residential & light commercial wiring
7. Explain the basics of conduit bending.
8. Identify the types of prints that an electrician may read.
9. List the standards parts of a drawing, use standard electrical symbols, understand the standard & read an electrical print.
10. Calculate branch circuit loads, determine the number of branch circuits for a house, explain noncoincident loads.
11. Perform load estimates using electrical load requirements use national electrical code.
12. Identify the different electrical devices: receptacle, switches, breakers, & GFCI.
13. Calculate feeders & service loads.
14. Discuss NEC regulations for appliance circuits & other special circuits.
15. Discuss installation practices for various appliances & special circuits

### Textbooks & Other Resources or Links

NCCER Electrical Level 1, 9th Edition 2017 Book, ISBN: 13: 978-0-13-469299-9 **Note:** You can purchase the eBook from NCCERconnect.

DeWalt: Electrical Professional References, 2017 CODE

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

### Course Requirements and Instructional Methods

We will be using NCCERconnect to conduct this class online.

#### Logging into NCCERconnect

1. Go to <https://registration.mypearson.com>
2. Under Register, select Student
3. Confirm you have the information needed, then select **OK! Register now**
4. Enter your instructor's course ID: **Note:** *Course code will be given by Instructor*
5. Enter your existing Pearson account **username** and **password** to **Sign In**. You have an account if you have ever used a MyLab or Mastering product. » If you don't have an account, select Create and complete the required fields.
6. Select an access option. » Enter the access code that came with your textbook or that you purchased separately from the bookstore. » If available for your course,
  - Buy access using a credit card or PayPal.
  - Get temporary access.If you're taking another semester of a course, you skip this step.
7. From the **You're Done!** page, select **Go To My Courses**.
8. Select the course name EWIR 110 Spring 2021
9. Become familiar with the course & start your work given by Professor.

The hybrid online version of this course is not self-paced. There are strict deadlines that need to be met one to two week. You will be given a list of weekly deliverables that you will be responsible for. You can find these under the appropriate weekly heading (ie. Week 1 Things To Do). Any questions you may have about the course can be posted in the 'Ask the Instructor' forum inside NCCERconnect. You must have access to a computer. The computer must have



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access to the Internet. You will also need access to a computer that has Microsoft Office installed on it (MS Word, Excel, and PowerPoint).

**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.

**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.

### What if I need to borrow technology or access to WIFI?

1. To request a loaner laptop, MYFI device, or other electronic device, please submit your request here: <https://imperial.edu/students/student-equity-and-achievement/>
2. If you'd like access the WIFI at the IVC campus, you can park in parking lots "I & J". Students must log into the IVC student WIFI by using their IVC email and password. The parking lots will be open Monday through Friday from 8:00 a.m. to 7:00 p.m.

#### Guidelines for using parking WIFI:

- Park in every other space (empty space BETWEEN vehicles)
- Must have facemask available
- For best reception park near buildings
- Only park at marked student spaces
- Only owners of a valid disabled placard may use disabled parking spaces
- Only members of the same household in each vehicle
- Occupants MUST remain in vehicles
- Restrooms and other on-campus services not available -College campus safety will monitor the parking lot - Student code of conduct and all other parking guidelines are in effect
- Please do not leave any trash behind
- No parking permit required If you have any questions about using parking WIFI, **please call Student Affairs at 760- 355-6455**

## 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:

***\*Grade breakdown is subject to change***

Breakdown (1200 points)

Exams: 550 Pts

Assignments: 250 Pts

Lab activities: 250 Pts.

**\*Participation: 150 Pts.**

Total points 1200pts.



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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 online lecturing, discussing; showing or demonstrating.

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

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

### Course Policies

#### 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. What does it mean to "attend" an online class?

#### What does it mean to "attend" an online class?

Attendance is critical to student success and for IVC to use federal aid funds. Acceptable indications of attendance are:

- Student submission of an academic assignment
- Student submission of an exam
- Student participation in an instructor-led Zoom conference

Logging onto NCCERconnecty alone is NOT adequate to demonstrate academic attendance by the student.

#### 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.



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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.

### 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.
- 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, only students enrolled in the class may attend; children are not allowed.

### How do I act differently if I have an on-ground class during COVID?

#### 1. DO NOT COME TO CAMPUS OR ATTEND AN OFF-CAMPUS CLASS IF YOU FEEL SICK, HAVE A FEVER, OR HAVE A COUGH

- a. Even if your symptoms are mild, stay home.
- b. Email your instructor to explain why you are missing class.
- c. **If you are sick with COVID-19 or think you might have COVID-19**, provides CDC guidance.
- d. If you have tested positive for COVID-19, you must self-quarantine for 14 days and then be without symptoms for at least 72 hours. Clearance is required prior to returning to any face-to-face interaction. It is recommended that you undergo a final COVID-19 test to confirm that you are no longer infected.
- e. If you are exposed through direct contact with a person known to be COVID-19 positive, then you must submit negative COVID-19 test results prior to returning to any face-to-face interaction

#### 2. ARRIVE AT CAMPUS EARLY (at least 15 minutes early is advised).



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a. All people entering the IVC campus will need to pass a screening process, which will occur at the gates as your drive onto campus. You will need to take a short questionnaire and get your temperature taken (the screening is completely touchless and will take place while you remain in your car).

### **3. BRING A MASK TO CLASS (and always wear it).**

a. Be sure that your mask covers both your nose and mouth. If your mask is cloth, then wash it each day. If your mask is disposable, then use a new one each day.

### **4. GO DIRECTLY TO YOUR CLASSROOM.**

a. The IVC campus is mostly closed so you should not visit other areas or seek any face-to-face services. Services are available to students online and can be accessed through [www.imperial.edu](http://www.imperial.edu)

### **5. WASH YOUR HANDS FREQUENTLY (and use the provided sanitation supplies).**

a. Your classroom is equipped with cleaning supplies. Use them as needed.

### **6. BE SURE TO SOCIAL DISTANCE (stay at least 6 feet from other).**

a. The number of students in a classroom at any one time is very limited so you have plenty of space to spread and ensure that you stay at least 6 feet from others.

### **7. BRING YOUR OWN FOOD AND DRINKS**

a. There is no food service currently offered on campus.

## **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 (!!!!)].

### **How am I expected to act in an online "classroom" (especially Zoom)?**

Attending a virtual meeting can be a challenge when there are many students on one conference call. Participating in such meetings may count as class attendance, but disruptive behavior may also result in you not being admitted to future meetings. Follow the tips below for best results:

#### **1) Be RESPECTFUL**

a. Your written, verbal, and non-verbal communications should be respectful and focused on the learning topics of the class.

#### **2) Find a QUIET LOCATION & SILENCE YOUR PHONE (if zooming)**

a. People walking around and pets barking can be a distraction.

#### **3) EAT AT A DIFFERENT TIME.**

a. Crunching food or chugging drinks is distracting for others.

b. Synchronous zoom times are set in advance so reserve meals for outside class meetings.

#### **4) ADJUST YOUR LIGHTING SO THAT OTHERS CAN SEE YOU**

a. It is hard to see you in dim lighting so find a location with light.

b. If your back is to a bright window, you will be what is called "backlit" and not only is it hard on the eyes (glare) but you look like a silhouette.

#### **5) POSITION THE CAMERA SO THAT YOUR FACE AND EYES ARE SHOWING**

a. If you are using the camera, show your face; it helps others see your non-verbal cues.



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b. You may be at home, but meeting in pajamas or shirtless is not appropriate so dress suitably. Comb your hair, clean your teeth, fix your clothes, etc. before your meeting time to show self-respect and respect for others

### **6) Be READY TO LEARN AND PAY ATTENTION**

- Catch up on other emails or other work later.
- If you are Zooming, silence your phone and put it away.
- If you are in a room with a TV – turn it off.

### **7) USE YOUR MUTE BUTTON WHEN IN LOUD PLACES OR FOR DISTRACTIONS**

a. Pets barking, children crying, sneezing, coughing, etc. can happen unexpectedly. It's best if you conference in a private space, but if you can't find a quiet place, when noises arise **MUTE** your laptop.

### **8) REMEMBER TO UNMUTE WHEN SPEAKING**

- Follow your instructor's directions about using the "raise hand" icon or chat function to be recognized and to speak, but make sure you have unmuted your device.
- Do not speak when someone else is speaking

### **9) REMAIN FOCUSED AND PARTICIPATE IN THE MEETING**

- Especially when the camera is on YOU, we can all see your actions. Engage in the meeting. Look at the camera. Listen to instruction. Answer questions when asked.
- Do not use the Zoom meeting to meet with your peers or put on a "show" for them.

### **10) PAUSE YOUR VIDEO IF MOVING OR DOING SOMETHING DISTRACTING**

- Emergencies happen. If you need to leave the room or get up and move about, stop your video.

## **Students 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**.

## **Other Course Information**

### **Additional Services for Students**

Imperial Valley College offers various services in support of student success. The following are some of the services available for students. Please speak to your instructor about additional services which may be available.

#### **How do I access services now that we are mostly online?**

- **CANVAS LMS.** Canvas is Imperial Valley College's Learning Management System. **To log onto Canvas**, use this link: [Canvas Student Login](#). **The Canvas Student Guides Site** provides a variety of support available to students 24 hours per day. Additionally, a 24/7 Canvas Support Hotline is available for students to use: 877-893-9853.
- **Learning Services.** In order to accommodate students and maximize student success during the COVID-19 Pandemic, all tutoring support is being provided through one Zoom link (**IVC online Tutoring**). When campus is open again, there are several learning labs to assist students. Whether you need support using computers, or you need a tutor, please consult your **Campus Map** for the **Math Lab; Reading, Writing & Language Labs**; and the **Study Skills Center**.
- **Library Services.** Visit the Spencer Library's page on the IVC website for a wealth of valuable resources and online access to databases, e-books and more. Contact us so we can help you with instructional and research development skills (for those conducting research and writing academic papers). When campus re-opens, students also have access to



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tutoring services in the Study Skills Center as well as private study rooms for small study groups. There is more to our library than just books!

- **Career Services Center.** The Career Services Center is dedicated to serve all IVC students and Alumni. Services include Career Assessments, Resume and Cover Letter Assistance, Interview Preparation, Internship Opportunities and Job Placement.
- **Child Development Center.** The Preschool and Infant/Toddler Centers are on-campus demonstration lab programs that meet the educational, research, and service needs of the institution and community at large. The Preschool program (children three to five years of age) and the Infant/Toddler program (newborn to three years of age) is in buildings 2200 and 2300. Service is available to families who meet the California Department of Education qualifications for enrollment. The centers are open during COVID from Monday-Friday 7:15-5:30. Breakfast, lunch and snack are provided through the California Adult and Child Food Program. Location: Buildings 2200 and 2300. Phone: (760) 355-6528 or (760) 355-6232. Application: <https://forms.imperial.edu/view.php?id=150958>

### Extended Opportunity Program and Services (EOPS)

The Extended Opportunity Program and Services (EOPS) offers services such as priority registration, book grants, transportation assistance, individualized counseling, tutoring, and community referrals to eligible students. Our staff is available to assist and support students in navigating personal, psychological, academic, and/or career-related issues through empathy, cultural-competence, and a commitment to equity and social justice. Also under the umbrella of EOPS is the CARE (Cooperative Agency Resources for Education) Program, designed to serve single parents and assist with addressing issues that are particular to this population. Students that are single parents receiving TANF/Cash Aid assistance may qualify for our CARE program. For additional information about the EOPS or CARE Imperial Valley College Course Syllabus – Electrical Trades IV / EWIR-096 11 Programs please contact our Program Office 760.335-6407 and/or visit our Program website [www.imperial.edu/students/eops](http://www.imperial.edu/students/eops) for eligibility criteria and application procedures. We look forward to serving you! - **EOPS/CARE Staff**

### Student Equity Program

The Student Equity & Achievement Program strives to improve Imperial Valley College's success outcomes, particularly for students who have been historically underrepresented and underserved. The college identifies strategies to monitor and address equity issues, making efforts to mitigate any disproportionate impact on student success and achievement. Our institutional data provides insight surrounding student populations who historically, are not fully represented. SEA addresses disparities and/or disproportionate impact in student success across disaggregated student equity groups including gender, ethnicity, disability status, financial need, LGBTQIA+, Veterans, foster youth, homelessness, and formerly incarcerated students. The SEA Program also houses IVC's Homeless Liaison, Foster Youth Liaison, Formerly Incarcerated Liaison, and Military Affiliated Liaison, who provide direct services and referrals to students in need. SEA strives to empower students experiencing insecurities related to food, housing, transportation, textbooks, and shower access. We recognize that students who struggle meeting their basic needs are also at an academic and economic disadvantage, creating barriers to academic success and wellness. We strive to remove barriers that affect IVC students' access to enrollment, education, degree and certificate completion, and the ability to transfer to a university. SEA also provides outreach at local Imperial County high schools to ensure graduating seniors are successfully matriculated into the college and have a strong support system. Please visit us online for assistance at <https://imperial.edu/students/student-equity-and-achievement/> or call us at 760-355-6465 or when campus reopens, visit Building 401.

### What if I cannot afford food, books, or need other help?





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We have many resources that are available to you. Please tell us what you need by submitting your request(s) here: <https://imperial.edu/students/student-equity-and-achievement/>

### IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.

### Anticipated Class Schedule/Calendar

I 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.

### Hybrid Online- TBA.

**NOTE:** This semester will be Remote Online for the **1st six weeks** & Lab on the second week of April & throughout **the rest of the semester**. **I will send you a zoom invitation through your student's IVC email on Monday 15, 2021. Please check your email!** Remote Online will be zoom lecture, virtual video based, & online testing. We will meet the 1st day in Remote Online to take attendance & roll call. I will give course schedule on our 1<sup>st</sup> zoom online. Anybody that miss the 1st day will be drop & give other crasher to add the class. **It's important to be in attendance the 1st day!** 2nd day of class will be to register the following:

1. 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. **FOR NEW STUDENTS IF YOU DON'T HAVE NCCER card number. No charge to get card number.**
2. Register to NCCERconnect. I will give you details instruction for NCCERconnect for you to register, and 1<sup>st</sup> online assignment. I do not use canvas; I use NCCERconnect for online & throughout the semester & it will include e-textbook. **There will be charge for registration & e-textbook. You have a 12 days' window to pay registration.**
3. Register for Interplay Learner for virtual video base that I will assign you for video assignment. I will give you an Interplay Learner sign-in sheet that I will use throughout the semester. **No charge for Interplay Learner registration.**

I look forward to working with you this semester!

\*\*\*\*\*Lab Schedule Subject to Change by President Dr. Garcia from CDC Guidelines\*\*\*\*\*