IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	**Spring 2021**	Instructor Name:	**Hector Mendez**
Course Title & #:	**SCADA/Telecomm Tech V APSC 105**	Email:	**Hector.mendez@imperial.edu**
CRN #:	**21719**	Webpage (optional):	**Imperial.edu**
Classroom:	**WC**	Office #:	**105**
Class Dates:	**16 FEB 2021 to 11 JUN 2021**	Office Hours:	**3:00 pm – 4:00 pm MW**
Class Days:	**T**	Office Phone #:	**7603399073**
Class Times:	4:00pm – 8:15pm	Emergency Contact:	**7603443090**
Units:	4	Class Format:	Lecture/Discussion

Course Description

Instruction in distribution line installation, maintenance, repair, and removal. Training in the use of hot sticks and gloves. An overview of pole top transformer, transmission and distribution line replacement, and working on de-energized transmission lines. Advanced review of high voltage AC systems, and advanced mathematical review. (Nontransferable, AA/AS degree only)(Nontransferable, AA/AS degree only)

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

Successful completion of ELTT 104 with a "C" or better.

Student Learning Outcomes

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

1. understand communication circuit types and speeds. (ILO2, ILO3)
2. identify the different supervisory and data acquisition (SCADA) equipment, protocols and diagnostic tools. (ILO2, ILO3)
3. understand the operation of the (SCADA) substation automation, networking, and data collection. (ILO2, ILO3)

Course Objectives

Upon satisfactory completion of the course, students will be able to:
1. Practice standard safety procedures appropriate to the power utility industry.
2. Recognize and deal appropriately with hazardous materials in the power utility industry.
3. Demonstrate an ability to install, remove, maintain, and repair distribution and transmission lines.
4. Possess the ability to work on de-energized transmission lines.
5. Demonstrate the proper methods to install fiber optic connections.
6. Demonstrate the proper use of hot sticks and gloves while working on energized lines

Textbooks & Other Resources or Links

Axelson, Jan (2008). Serial Port Complete: COM Ports, USB Virtual COM Ports, and Ports for Embedded Systems (Complete Guides series) (2nd/e). Lakeview Research. ISBN: 978-1931448062

Boyer, Stuart A (2010). Scada: Supervisory Control And Data Acquisition (4th/e). ISA: The Instrumentation, Systems, and Automation Society. ISBN: 978-1936007097

Course Requirements and Instructional Methods

Lectures, class discussions, hands-on demonstration,

Course Grading Based on Course Objectives

90-100% = A
80-89% = B
70-79% = C
60-69% = D
Below 60% = F

Special Project (Oral/Written) 20%	= 100 points	
Homework 20%	= 100 points	
Weekly Quiz 15%	= 75 points	
Mid-term 20%	= 100 points	
Final Exam 25%	= 125 points	

Total of 500 pts. Total accumulated points are divided by 500 to arrive at percentage score.

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 IID policy and procedures 4530 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.

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

Online Etiquette

- 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 (!!!!)].
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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.

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visitor click the heart icon in Canvas.

Anticipated Class Schedule/Calendar

WEEK #	DAY	CORE CONTENT	READING ASSIGNMENT
1	Feb 16	Developing & conducting tailgate sessions IID's procedures for hazardous materials	Tailgate and MSD handouts
2	Feb 23	SCADA fundamentals, architecture and communications technology	TM 5-601 chapters 1-4 handout
3	Mar 2	SCADA communications (cont.), radio systems, and telemetry	Boyer Unit 6 and 7
4	Mar 9	RTUs, PLCs and Master Terminals in SCADA	Boyer Unit 8 and 9
5	Mar 16	Sensors, actuators and wiring for SCADA	Boyer Unit 10
6	Mar 23	SCADA Applications and examples	Boyer Unit 11
7	Mar 30	SCADA Applications and examples (cont.)	
8	Apr 13	Mid-term Exam	
9	Apr 20	Ladder Logic and IEC 611131-3 program and projects	
10	Apr 27	Communications ports: Options and choices	Axelson Unit 1
11	May 4	Communications ports: Formats and protocols	Axelson Unit 2
12	May 11	Communications protocols: Modbus	Handout
13	May 18	Communications protocols: DNP3	Handout
14	May 25	COM ports- RS232 use and design	Axelson Units 3, 4, 5
15	June 1	COM ports – RS485 use and design	Axelson Unit 6 and 7
16	June 8	Final Exam	

Subject to change without prior notice