IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	**Spring 2021**	Instructor Name:	**Raul Delatorre**
Course Title & #:	**Hydro Operator VIII APHY 108**	Email:	**raul.delatorre@imperial.edu**
CRN #:	**21713**	Webpage (optional):	**Imperial.edu**
Classroom:	**IID HQ Mechanics Classroom**	Office #:	**Niland, Generation**
Class Dates:	**Feb16, 21 to Jun 11, 21**	Office Hours:	**5:00 a.m. to 3:30 p.m.**
Class Days:	**Thursdays**	Office Phone #:	**N/A**
Class Times:	**4:00 p.m. to 8:15 p.m.**	Emergency Contact:	**760-427-6452**
Units:	**4**	Class Format:	**Lecture/Discussion**

Course Description

Comprehensive review in AC theory and advanced training in distribution line maintenance (i.e., transmission structures, transmission line installation, climbing steel poles and towers, working on de-energized lines, rigging for high voltage work, hot transmission line repair, using temporary structures, and usage of gloves and hot sticks). Preparation for the National Electrical Code Journey Exam. (Nontransferable, non-degree applicable) (Nontransferable, AA/AS degree only)

Course Prerequisite(s) and/or Co-requisite(s)

Successful completion of APHY 107 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 tailgate safety sessions, CIPS awareness training, IID's procedures for hazardous waste and Electrical Shock training. (ILO2, ILO3)
2. Identify hydro plant operation auxiliary systems and their components including Plant air system, cooling water, bearing water, lubrication, oil conditioning and distribution and station services power supply. (ILO2, ILO3)
3. Correlate normal parameters, operation and effect of plant auxiliary systems conditions to generating unit operation. (ILO2, ILO3)
4. Demonstrate proficiency in properly executing sub-station switching, identifying plant station services circuits and lock out-tag out procedures, battery bank and battery charger monitoring. (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. Implement and maintain hydro plant auxiliaries.
4. Identify and resolve power loss and outages in switchyards and substations through given troubleshooting techniques.
5. Develop and implement tailgate sessions.
6. Analyze and replace components by using operating test equipment.
7. Successfully pass the journeyman NEC exam.

Textbooks & Other Resources or Links

- Callahan, Michael and Bill Wusinich 2017. *Electrical Systems Based on the 2017 NEC* 1st. American Technical Publishers ISBN: 978082692034.
- Shoemaker, Thomas M. and James E. Mack 2017. *The Lineman's and Cableman's Handbook* 13th. New York. McGraw-Hill ISBN: 978-0071850032.
- Electrical Lineman Training Committee 2009. *Imperial Irrigation District's Lineman Apprenticeship Training Handbook* Revised. Imperial, CA. Imperial Irrigation District ISBN: -.
- Joint Apprenticeship Committee 2009. *Hydro-Electric Program Standards* Imperial, CA. Imperial Irrigation District ISBN: -.

Course Requirements and Instructional Methods

- Audio Visual
- Computer Assisted Instruction
- Demonstration
- Discussion
- Group Activity
- Individual Assistance
- Lab Activity
- Lecture
- Simulation/Case Study

Course Grading Based on Course Objectives

Grade Scale	Activity	Grade percentage
90-100% = A	Class participation (compilation of questions per class)	10% of grade
80-89% = B	Class assignments, homework, essay, papers.	10% of grade
70-79 =C	Hydro Generating Station Auxiliary Equipment data interpretation and troubleshooting.	10% of grade
60-69% = D	Demonstrate proficiency in properly reviewing Substation Switching Orders implementation.	10% of grade
Below 60% = F	Mid-term examination.	20% of grade
	Final examination	40% of grade
	Final grade total.	100%

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 owned 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 absence 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.

IMPERIAL VALLEY COLLEGE

Anticipated Class Schedule/Calendar

Date/Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
February 18	Syllabus review & Introduction, COVID-19 Awareness. Assessment questionnaire.	APHY 108 Syllabus/Questionnaire.
February 25	Hydro Operator trade progression requirements.	Hydro Operator Job Descriptions
March 4	APHY 105, 6, and 7 review	APHY 105 through 107 Syllabus
March 11	MS Word Processor and Spreadsheet practice.	Software application review.
March 18	Hydro Generator Grid Synchronization/Hydro Single Line Diagrams	Lecture/Technical information review
March 25	Substation Equipment/Switching	Lecture
April 1	Mid-term examination	Test
April 8	Recess	
April 15	Hydro Operator Journeyman level of responsibility in regards to Generation Power Plant Safety Procedures (PPSP).	Generation Power Plant Safety Procedures book.
April 22	Hydro generation auxiliary systems service, maintenance, operation parameters review and troubleshooting.	
April 29	FERC, NERC, WECC/Reliability Regulatory Compliance	
May 6	Field trip, Drop 4 complex	Field trip (Optional - COVID-19)
May 13	System Restoration and The Black Start Unit	Procedure review
May 20	Generation Equipment Maintenance Philosophies	Lecture
May 27	All American Canal Operation	
June 3	Course final examination study guide review	Review
June 10	Final examination	Test

*****Subject to change without prior notice*****