

Basic Course Information

Semester:	Fall	Instructor Name:	Cesar J. Perdomo
Course Title & #:	Hydro Operator V APHY 105	Email:	cesar.perdomo@imperial.edu
CRN #:	11435	Webpage (optional):	
Classroom:	IID Hydros - Drop 4	Office #:	
Class Dates:	Aug. 13 - Dec. 8, 2018	Office Hours:	
Class Days:	Thursday	Office Phone #:	
Class Times:	4:00 pm - 8:30 pm	Emergency Contact:	
Units:	4.0		

Course Description

The course is designed as a comprehensive review in AC theory, application and generation line systems augmented with an introduction of hydro-electric power, generation, dispatching, hydro power operations, maintenance and related construction standards.

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

Successful completion of ELTT 104 class.

Student Learning Outcomes

The program will ensure that operating and technical personnel will have a thorough understanding of the practical aspects of the operation and maintenance of all types of hydro power plant installations and monitoring through SCADA.

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

1. Become familiar with safety procedures and hazardous materials management as well as with standard construction practices related to the power industry. (ILO2, ILO3)
2. Describe the hydro power generation principle and major components, AC electrical power theory, as well as transmission and distribution systems basic components and operation. (ILO1, ILO2)
3. Explain interaction between generating unit components, pond level, flow, spillways, generator and sub-station with emphasis on safe power production optimization. (ILO1, ILO2)
4. Demonstrate ability to resolve basic electricity mathematical problems related to AC three phase circuits. (ILO2, ILO3)

Course Objectives

The course consists of 16 classes with each class dealing with a separate subject and quizzes and review at the end of each subject. The course is designed for Technicians, and Operators to aid in upgrading their knowledge and understanding of hydro-electric power generation.

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. Identify and resolve hydro-electric troubleshooting techniques, water loss, and outages.
4. Maintain and repair dams, spillways, and reservoirs.
5. Implement and maintain levels of reservoirs and spillways.
6. Apply mathematical functions essential to industry standards.
7. Identify and demonstrate practical uses of other safety equipment.

Textbooks & Other Resources or Links

Hydro-electric power plant operations student training work book and handouts.

Course Requirements and Instructional Methods

The course consists of 16 classes with each class dealing with a separate subject and quizzes and review at the end of each subject. Hydro-electric power plant operations student training work book and handouts supplemented with audio and visual computer assisted instruction and class discussion and participation.

Course Grading Based on Course Objectives

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

There are 15 quizzes (15 pts. each) 1 exam. 1 mid-term & 1 final exam. (50 pts. each) total points for the class is 375. Total accumulated points are divided by 375 to arrive at percentage score.

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 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

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.

- **CANVAS LMS.** Canvas is Imperial Valley College's main 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.** 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 counseling services are available for currently enrolled students. Services are provided in a confidential, supportive, and culturally sensitive environment. Please contact the IVC Mental Health Counseling Services at 760-355-6310 or in the building 1536 for appointments or more information..

Veteran's Center

The mission of the [IVC Military and Veteran Success Center](#) is to provide a holistic approach to serving military/veteran students on three key areas: 1) Academics, 2) Health and Wellness, and 3) Camaraderie; to serve as a central hub that connects military/veteran students, as well as their families, to campus and community resources. Their goal is to ensure a seamless transition from military to civilian life. The Center is located in Building 600 (Office 624), telephone 760-355-6141.

Extended Opportunity Program and Services (EOPS)

The Extended Opportunity Program and Services (EOPS) offers services such as priority registration, personal/academic counseling, tutoring, book vouchers, and community referrals to qualifying low-income students. EOPS is composed of a group of professionals ready to assist you with the resolution of both academic and personal issues. Our staff is set up to understand the problems of our culturally diverse population and strives to meet student needs that are as diverse as our student population.

Also under the umbrella of EOPS our CARE (Cooperative Agency Resources for Education) Program for single parents is specifically designed to provide support services and assist with the resolution of 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 on CARE please contact Lourdes Mercado, 760-355- 6448, lourdes.mercado@imperial.edu.

EOPS provides additional support and services that may identify with one of the following experiences:

- Current and former foster youth students that were in the foster care system at any point in their lives
- Students experiencing homelessness
- Formerly incarcerated students

To apply for EOPS and for additional information on EOPS services, please contact Alexis Ayala, 760-355-5713, alexis.ayala@imperial.edu.

Student Equity Program

- The Student Equity 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. Student Equity addresses disparities and/or disproportionate impact in student success across disaggregated student equity groups including gender, ethnicity, disability status, financial need, Veterans, foster youth, homelessness, and formerly incarcerated students. The Student Equity

Program provides direct supportive services 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 education, degree and certificate completion, successful completion of developmental math and English courses, and the ability to transfer to a university. Contact: 760.355.5736 or 760.355.5733 Building 100.

- The Student Equity Program also houses IVC's Homeless Liaison, who provides direct services, campus, and community referrals to students experiencing homelessness as defined by the McKinney-Vento Act. Contact: 760.355.5736 Building 100.

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

[Required Information – Discretionary Language and Formatting: The instructor will provide a tentative, provisional overview of the readings, assignments, tests, and/or other activities for the duration of the course. A table format may be useful for this purpose.]

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Week 1 Aug. 16, 2018	Syllabus & Introduction of role that Hydroelectric has in the power system.	HEP 1
Week 2 Aug. 23, 2018	Characteristics of Hydro plants	HEP 1 Pages 1 – 4 quiz
Week 3 Aug. 30, 2018	The Power system	HEP 1 Pages 6 – 8 quiz
Week 4 Sept. 6, 2018	Transmission and Distribution	HEP 1 Pages 11 – 13 quiz
Week 5 Sept. 13, 2018	Power Dispatch and Power System Operations HEP 1 Exam	HEP 1 Pages 15 – 22 quiz
Week 6 Sept. 20, 2018	Hydro Power Operations – Power From Water	HEP 2 Pages 1 – 3 quiz
Week 7 Sept. 27, 2018	Major Components and Systems	HEP 2 Pages 5 – 7 quiz

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Week 8 Oct. 4, 2018	Hydraulic Systems I & II Mid-Term Exam	HEP 2 Pages 9 – 17 quiz
Week 9 Oct. 11, 2018	Introduction to Water Management “Hydrology”	HEP 3 Pages 1 – 7 quiz
Week 10 Oct. 18, 2018	Construction of Dams, Headworks (Intake Structures) and Spillways	HEP 3 Pages 10 – 21 quiz
Week 11 Oct. 25, 2018	Reservoir Control and Safety of Dams	HEP 3 Pages 23 – 24 quiz
Week 12 Nov. 1, 2018	Capacitance	Video & Handouts quiz
Week 13 Nov. 8, 2018	Series AC circuits Parallel AC circuits	Video & Handouts quiz
Week 14 Nov. 15, 2018	Alternating Current and Three Phase Systems	Video & Handouts quiz
Week 15 Nov. 29, 2018	Review of HEP 1, HEP 2, & HEP 3. Review of quizzes and exams in preparation for APHY 105 Final exam.	Lecture, Questions
Week 16 Dec. 6, 2018	APHY 105 Final Exam	

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