

Basic Course Information

Semester:	Fall 2019	Instructor Name:	Jose L. Castillo Jr.
Course Title & #:	APTL107	Email:	jlcastillo@iid.com
CRN #:	11571	Webpage (optional):	
Classroom:	IID HQ J-15 Conf. Room	Office #:	IID HQ J-15 Bldg.
Class Dates:	Aug 19 - Dec 14	Office Hours:	0600 - 1630
Class Days:	Tuesdays	Office Phone #:	(760) 482-9865
Class Times:	4-830pm	Emergency Contact:	(760) 427-8428
Units:	4.0		

Course Description

Instruction in advance installation, configuration, testing, maintaining, troubleshooting and repairing the District's SCADA, data-communication, revenue meter, and associated power plant systems. (Nontransferable, nondegree applicable)

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

APTL 106

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 basic theory of data transport methods
2. Understand basic RF Theory
3. Understand NMS (Network Management Systems)
4. Interpret Schematics
5. Use of onboard diagnostic tests, tools and safe practices

Course Objectives

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

A. Understand SONET (Synchronous Optical NET-works)

1. Understand basic theory and data transport methods
2. Interpret bandwidth requirements and channel provisioning/types of redundancy
3. Understand NMS (network management systems)
4. Understand test equipment and diagnostic tools/onboard with the SEL-5051 software

B. Understand intertie metering

1. Understand meter theory and safety
2. Interpret meter classes/forms - types of equipment, meter configuration & installation
3. Understand real-time meter data application (EMS/SOC/AGC)

C. Understand voice radio systems

1. RF theory, terms and frequency ranges
2. Understand antenna types and calculate cable loss using formulas.
3. Understand radio frequency safety; test equipment and diagnostic tools.

Textbooks & Other Resources or Links

Sonet/SDH Third Edition 3rd Edition

by [Walter J. Goralski](#).

ISBN-13: 978-0072225242

ISBN-10: 0072225246

Course Requirements and Instructional Methods

Audio Visual
Computer Assisted Instruction
Demonstration
Discussion
Group Activity
Individual Assistance
Lab Activity
Lecture
Simulation/Case Study
Essay
Mid-Term/Final Exam(s)
Objective
Oral Assignments
Problem Solving Exercise
Quizzes
Skill Demonstration
Written Assignments

Two (2) hours of independent work done out of class per each hour of lecture or class work, or 3 hours lab, practicum, or the equivalent per unit is expected.

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.

Course Grading Based on Course Objectives

CORE CONTENT	APPROX. % OF COURSE
A. SONET (Synchronous Optical NET-works) 1. Basic theory and data transport methods 2. Bandwidth requirements and channel provisioning/types of redundancy 3. NMS (network management systems) 4. Test equipment and diagnostic tools/onboard diagnostic software	40.00%
B. Understand intertie metering 1. Meter theory and safety 2. Meter classes/forms-types of equipment 3. Real-time meter data application (EMS/SOC/AGC) 4. Test equipment and diagnostic tools including protocol test set, SunSet MTT, ASE test set	25.00%
C. Understand voice radio systems 1. RF theory and frequency ranges (IID Frequencies). 2. Understand antenna types and cable loss 3. Understand radio frequency safety; test equipment and diagnostic tools	35.00%
TOTAL	100%

Attendance

[Required Information: *The below information is the IVC attendance policy. Use this information in addition to any specific attendance policies you have for your course.]*

- 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

[Required Information: Describe your policies regarding classroom conduct. The below is suggested language and may be modified for your course.]

- 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

[Required Information for web-enhanced, hybrid and online courses: Describe your policies regarding netiquette. The below is suggested language and may be modified for your course.]

- 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

[Required language.]

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

[Suggested Language.]

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)

[Required language.]

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

[Required language.]

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

[Required language.]

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)

[Required language.]

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

[Required language.]

- 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

[Required language.]

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

[Required language.]

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 19 - 23	Syllabus & Introduction Summary of expectations	
Week 2 Aug 26 - 30	Theory of Synchronous Optical Networks	
Week 3 Sept 2-6	SONET (ICON) <ul style="list-style-type: none"> • Modules • Physical Node 	
Week 4 Sept 9-13	SONET (ICON) <ul style="list-style-type: none"> • Lab Exercises (J15 Lab) 	
Week 5 Sept 16-20	SONET (ICON) <ul style="list-style-type: none"> • Schematics • Summary of SONET 	
Week 6 Sept 23-27	Meter Theory and Safety IID Interties-Definitions	
Week 7 Sept 30- Oct 4	Various Classes/Forms of meters Understand Real-time meter application	
Week 8 Oct 7-11	Mid Term Exam <ul style="list-style-type: none"> • Weeks 1-7 	
Week 9 Oct 14-18	Using Various types of Test equipment <ul style="list-style-type: none"> • SunSet MTT • BERT Protocol Analyzer • ASE test set • Fluke OptiView and O-Scope 	
Week 10 Oct 21-25	Using Various types of Test equipment <ul style="list-style-type: none"> • Lab Exercises (J15 Lab) 	
Week 11 Oct 28-Nov 1	RF Basic Theory and terminology	
Week 12 Nov 4-8	RF Frequency Ranges <ul style="list-style-type: none"> • Examples of IID Frequencies Various types of Antennas	
Week 13 Nov 11-15	RF testing and diagnostic tools <ul style="list-style-type: none"> • Lab Exercise (J15 Lab) • Imperial HQ MW Shelter and Tower 	
Week 14 Nov 18-22	Nokia 9500 MPR System and NMS Aviat Eclipse and Provision NMS	
Thanksgiving Week	No Class-Thanksgiving Holiday	

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
Nov 25-29		
Week 15 Dec 2-Dec 6	Summary of IID MW Systems and RF Safety Review for Final Exam	
Week 16 Dec9-13	Final Exam • Weeks 9-15	

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