Basic Course Information

Semester:	**Fall 2017**	Instructor Name:	**Mizael Huereque**
Course Title & #:	**Telecommunications Technician VII-APTL 107**	Email:	**mhuereque@iid.com**
CRN #:	**11250**	Webpage (optional):	
Classroom:	**ECBB**	Office #:	
Class Dates:	**8/19-12/6**	Office Hours:	**n/a**
Class Days:	**Wednesday**	Office Phone #:	**760 482-9872**
Class Times:	4:00-830 pm	Emergency Contact:	**760 427-5012**
Units:	4.00		

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, non-degree applicable)

Student Learning Outcomes

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

- Understand SONET (Synchronous Optical NET-works). (ILO2, ILO3)
- Understand intertie metering including the use of test equipment and diagnostic tools including protocol test set, meter configuration software, WECO-20 meter test board
- Understand antenna types and (VSWR) voltage standing wave ratio. (ILO2, ILO3)
- Understand radio frequency safety; test equipment and diagnostic tools including RF monitor, power meter and spectrum analyzer. (ILO2, ILO3)

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 diagnostic 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)
4. Utilize test equipment and diagnostic tools including protocol test set, meter configuration software, and WECO-20 meter test board

C. Understand voice radio systems
1. RF theory and frequency ranges
2. Understand antenna types and (VSWR) voltage standing wave ratio
3. Understand radio frequency safety; test equipment and diagnostic tools including RF monitor, power meter and spectrum analyzer

Textbooks & Other Resources or Links

Kirk, Franklyn W., Weedon, Thomas A., and Kirk, Philip (2011). *Instrumentation* (5th/e). Homewood, Illinois American Technical Publishers, Inc. ISBN: 978-0826934307

Course Requirements and Instructional Methods

- APTL 106
- Instructional Methods
  - Audio Visual
  - Computer Assisted Instruction
  - Demonstration
  - Discussion
  - Group Activity
  - Individual Assistance
  - Lab Activity
  - Lecture
  - Simulation/Case Study

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	25.00%
B. Understand intertie metering 1. Meter theory and safety 2. Meter classes/forms-types of equipment, meter configuration & installation 3. Real-time meter data application (EMS/SOC/AGC) 4. Test equipment and diagnostic tools including protocol test set, meter configuration software, WECO-20 meter test board and PowerMate meter test set	40.00%
C. Understand voice radio systems 1. RF theory and frequency ranges	35.00%

2. Understand antenna types and (VSWR) voltage standing wave ratio 3. Understand radio frequency safety; test equipment and diagnostic tools including RF monitor, power meter and spectrum analyzer	
TOTAL	100%

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.

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

Week	Date	Activity, Assignment, and/or Topic
1	8/16	Syllabus & Introduction SONET-Basic Theory (Optical Essentials Ch. 17, Survival Guide Ch. 7)
2	8/23	SONET-Bandwidth requirements (Optical Essentials Ch. 16)
3	8/30	Quiz-Weeks 1/2 SONET-Network Management Systems (Optical Essential Ch. 18)
4	9/6	SONET-Test Equipment and Diagnostic Tools (Optical Essentials Ch. 19) Guest Speaker-Joe Castillo (Test Equipment and Diagnostic Tools)
5	9/13	Guest Speaker- Julio Perez (ICON)
6	9/20	Metering-Theory and Safety (Metering Handbook Ch. 1-3)
7	9/27	Metering-Classes and Forms (Metering Handbook Ch. 7)
8	10/4	Midterm Review and Midterm Exam
9	10/11	Metering-Real Time Meter Application (SOC Field Trip)
10	10/18	Metering-Test Equipment (WECO + Arbiter)
11	10/25	Voice Radio Systems-Compass Comm. Guest Speaker-Joel Delgado (IID Radio System) Assignment-Power Point Presentation
12	11/1	Voice Radio Systems-RF Theory (Survival Guide Ch.8)
13	11/8	Voice Radio Systems-Antennae Types (PMR Ch. 4)
14	11/15	Voice Radio Systems-RF Safety and Test Equipment (Safety Videos)
15	11/29	Power Point Presentation Final Review
16	12/6	Final Exam

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