

Basic Course Information

Semester:	Spring 2018	Instructor Name:	Jose L. Castillo, Jr.
Course Title & #:	APTL108	Email:	jlcastillo@iid.com
CRN #:	21258	Webpage (optional):	
Classroom:	IID HQ J-15 Conf. Room	Office #:	IID HQ J-15 Bldg
Class Dates:	Feb 12- Jun 8 2018	Office Hours:	0600-1630
Class Days:	Wednesday	Office Phone #:	(760) 482-9865
Class Times:	4-830pm	Emergency Contact:	(760) 427-8428
Units:	4		

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)

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 microwave radio principles. (ILO2, ILO3)
2. use test equipment and diagnostic tools to interpret microwave radio frequency safety. (ILO2, ILO3)
3. understand substation work safety procedures including interpreting PPE requirements. (ILO2, ILO3)
4. understand bandwidth requirements and availability of voice traffic/call detail recording. (ILO2, ILO3)

Course Objectives

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

A. Understand Microwave radio networks

1. Understand microwave radio principles
2. Understand frequency spectrum
3. Understand antenna types/Hot standby and space diversity
4. Understand wave propagation/VSWR (voltage standing wave ratio)
5. Understand NMS (network management system)
6. Apply test equipment and diagnostic tools
7. Interpret microwave radio frequency safety

B. Understand other safety practices & procedures

1. Request a line outage
2. Request a meter outage
3. Requesting a protection communication circuit outage
4. Interpret PPE requirements and substation work safety procedures

C. Understand electronic security

1. Video surveillance and monitoring
2. Understand types of cameras and DVRs (digital video recorders)
3. Interpret Bandwidth requirements and availability voice traffic/call detail recording
4. Interpret physical access control/intrusion detection

Textbooks & Other Resources or Links

[James Harry Green](#), McGraw-Hill Education; 5 edition (November 16, 2005) **The Irwin Handbook of Telecommunications, 5E 5th Edition**, ISBN-10: 0071452222/ ISBN-13: 978-0071452229

Course Requirements and Instructional Methods

Course Requirements

Completion of AP107

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. %
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	OF COURSE
A. Understand Microwave radio networks 1. Understand microwave radio principles 2. Understand frequency spectrum 3. Understand antenna types/Hot standby and space diversity 4. Understand wave propagation/VSWR (voltage standing wave ratio) 5. Understand NMS (network management system) 6. Apply test equipment and diagnostic tools 7. Interpret microwave radio frequency safety	35.00%
B. Understand other safety practices & procedures 1. Request a line outage 2. Request a meter outage 3. Requesting a protection communication circuit outage 4. Interpret PPE requirements and substation work safety procedures	35.00%
C. Understand electronic security 1. Video surveillance and monitoring 2. Understand types of cameras and DVRs (digital video recorders) 3. Interpret Bandwidth requirements and availability voice traffic/call detail recording 4. Interpret physical access control/intrusion detection	30.00%
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

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 February 12-15	Syllabus & Introduction Microwave Radio Principles (The Irwin Handbook of Telecommunications)	
Week 2 February 20- 23	Microwave Radio Principles Frequency Spectrum (The Irwin Handbook of Telecommunications)	
Week 3 Feb 26-Mar 2	Antenna Types Hot Standby and Space Diversity (The Irwin Handbook of Telecommunications)	
Week 4 Mar 5-9	Wave Propagation VSWR (Voltage Standing Wave Ratio	
Week 5 Mar 12-16	NMS (Network Management Systems) (IID Systems: Provision, Nokia)	
Week 6 Mar 19-23	Test Equipment and Diagnostic Tools (IID Testing Equipment: SunSet-MTT, T-Bird, Protocol Analyzer) Mid-Term Review	
Week 7 Mar 26-30	Test Equipment and Diagnostic Tools (IID Testing Equipment: SunSet-MTT, T-Bird, Protocol Analyzer) Mid-Term Exam (Include Material from weeks 1-7)	
Easter Break Apr 2-6	No Classes: IVC Scheduled Holiday Week	
Week 8 Apr 9-13	Microwave Radio Frequency Safety (OET Bulletin 65) (https://www.rsicorp.com/)	
Week 9 Apr 16-20	Requesting a Line Outage Requesting a Meter Outage Requesting a Protection Communication Circuit Outage (IID CLO and HLO Request Forms)	
Week 10 Apr 23-27	PPE Requirements Substation Work Safety Procedures	

Date or Week	Activity, Assignment, and/or Topic	Pages/ Due Dates/Tests
	(IID SWP 00005) (IID Outer Garment SWP)	
Week 11 Apr 30-May 4	Video Surveillance and Monitoring (The Irwin Handbook of Telecommunications) (IID Security Infrastructure: Milestone Surveillance)	
Week 12 May 7-11	Physical Access Control (The Irwin Handbook of Telecommunications) (IID Security Infrastructure: Lenel)	
Week 13 May 14-18	Bandwidth Requirements and Availability (IID Sonet Infrastructure: ICON, Aviat, Constellation)	
Week 14 May 21-25	IID Voice and Recording System (HiPath 4000, Mediatrix, Eventides)	
Week 15 May 29-June 1	Final Exam Review (weeks 8-14)	
Week 16 June 4-8	Final Exam	

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