

### Basic Course Information

Semester:	<b>Fall 2019</b>	Instructor Name:	<b>Jimenez, Ricardo</b>
Course Title & #:	<b>Electronic Devices / ELTR 120</b>	Email:	ricardo.jimenez@imperial.edu
CRN #:	<b>10801</b>	Webpage (optional):	
Classroom:	<b>3110</b>	Office #:	
Class Dates:	<b>Aug 19, 2019 to Dec 14, 2019</b>	Office Hours:	
Class Days:	<b>Tuesdays and Thursdays</b>	Office Phone #:	
Class Times:	18:00 – 21:10 Hrs	Emergency Contact:	<b>760-355-6361</b>
Units:	4.00		

### Course Description

This course covers a study of basic electronics laws and components in dc circuits. It emphasizes voltage, current and resistance relationships. An introduction to magnetism is also included. (CSU)

### 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. Demonstrate the ability to use scientific and engineering notations, and basic electrical qualities. (ILO2, ILO4).
2. Describe the functions of DC meters and how each is used in measuring voltage, current and resistance. (ILO2, ILO4).
3. Analyze series/parallel circuits using Ohm's Law, Kirchhoff's Law, Thevenin's theorem, Norton's theorem; solving for multiple voltage source circuits using Superposition theorem and Mesh analysis and power laws. (ILO2, ILO4).
4. Construct, test and troubleshoot various series/parallel DC circuits. (ILO2, ILO4).

### Course Objectives

MEASURABLE COURSE OBJECTIVES AND MINIMUM STANDARDS FOR GRADE OF "C":

Upon satisfactory completion of the course, students will be able to (these objectives are subject to change):

1. Demonstrate the correct safety practices and procedures used in the laboratory.
2. Properly operate and accurately read conventional dc. meters; utilize dc meters in testing various circuits.
4. Construct resistive circuits utilizing the protoboard, resistors, and conventional hand tools.
5. Experimentally validate Ohm's law expression.
6. Recognize series of circuits and compare mathematical relationships and calculations to the measured values.
7. Construct series aiding and opposing circuits and measure current and voltage, and anticipate correct polarity of connections.
8. Accurately measure current in parallel circuits utilizing Ohm's Law to verify measurements.

9. Analyze series/parallel circuits using Ohm’s Law, Kirchhoff’s Law, Thevenin’s theorem, Norton’s theorem; solving for multiple voltage source circuits using Superposition theorem and Mesh analysis and power laws.
10. Understand magnetism, magnetic units and Lenz’s Law.
11. Construct, test, and troubleshoot various series dc circuits.
12. Construct, test, and troubleshoot various parallel dc circuits.
13. Experimentally validate Kirchhoff’s voltage and current laws.

### Textbooks & Other Resources or Links

1. Floyd, Thomas L. & Buchla, David M. (2009). Electronic Fundamentals: Circuits, Devices and Applications. (8<sup>th</sup>/e). New Jersey Prentice Hall. ISBN: 0135072956.

### Course Requirements and Instructional Methods

Assignments are designed to elicit your demonstration of critical thinking, understanding and application of the course concepts, and your proficiency in the subject matter.

#### Required Activities or Assignments                      Points

- |                            |    |
|----------------------------|----|
| 1. Homework, Assignments:  | 10 |
| 2. Laboratory Experiments: | 40 |
| 3. Laboratory Reports:     | 10 |
| 3. Mid-Term Exam:          | 20 |
| 4. Final Exam:             | 20 |

Teaching Methods: Discussion of assignments and instructional methods will be a combination of all methods of instruction, which can be classified as telling, lecturing, or discussing; showing or demonstrating.

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

The course grade is based on total points accumulated during the semester. There is a maximum of 100 points. Very limited extra credit points may be available, either through some class participation activity, group work or perfect attendance. Failing to turn in regular assignments will stop you from being able to earn extra credit points and late assignments will have points subtracted.

Final Grades are calculated as follows:

Points	Grade
90-100	A
80-89	B
70-79	C
60-69	D
Below 60	F

Grading Rubrics: In addition to the percentages and points listed above the following grading rubric (standards expected) will be used when grading student assignments. The description that best fits your work will be the assigned grade.

Grade	Rubric or Standard Expected
A	Focused and clearly organized. Contains advanced critical thinking and analysis. Convincing evidence is provided to support conclusions. Clearly meets or exceeds assignment requirements.
B	Generally focused with some development of ideas, but may be simplistic or repetitive. Evidence is provided to support conclusions. Occasional grammatical errors. Meets assignment requirements, but does not exceed.
C	Unfocused, underdeveloped, or rambling, but has some coherence. Minimal evidence is provided to support conclusions. Several grammatical errors. Meets minimum assignment requirements.
D	Unfocused, underdeveloped, and/or rambling. Limited evidence is used to support conclusions. Serious grammatical errors that impede overall understanding. Does not address the assignment requirements
F	Unfocused, underdeveloped, and/or rambling. Incomplete or too brief. No evidence is used to support conclusions. Serious grammatical errors that block overall understanding. Does not meet assignment requirements. Minimal to no student effort.

Late Assignments will be accepted until the graded assignment is returned to the class, but assessed a penalty of 10 points per calendar day it is late.

### 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, no one who is not enrolled in the class may attend, including children.

## 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.

- **Blackboard Support Site.** The Blackboard Support Site provides a variety of support channels available to students 24 hours per day.
- **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 and El Centro Regional Center provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC [Student Health Center](#) at 760-355-6310 in Room 2109 for more information.
- **Mental Health Counseling Services.** Short-term individual, couples, family, and group therapy are provided to currently enrolled students. Contact the IVC [Mental Health Counseling Services](#) at 760-355-6196 in Room 2109 for more information.

### 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

Below is a tentative, provisional overview list (the dates and Activities, Assignments and/or Topics are subject to change) of weekly activities and assignments that will assist you in meeting the course objectives and the Student Learning Outcomes.

Date	Activity, Assignment, and/or Topic	Assignment Due
Week #1	Syllabus & Introduction.	
Week #1	Electricity (Engineering Notation, Conductors, Insulators.).	
Week #2	Basic Electrical Quantities; Voltage, Current, Resistance, Power.	
Week #2	Electronic Components and Symbols.	
Week #3	Ohm's Law and Kirchoff's Laws and Using Multi-Meters.	
Week #4,5	Series Circuits and Voltage Dividers.	
Week #6, 7, 8	Parallel Circuits and Current Dividers.	
Week #9	Review for Mid. Exam.	
Week #9	Mid Term Exam.	
Week #10,11,12	Analyze series/parallel circuits using Ohm's Law, Kirchoff's Law; solving for multiple voltage source circuits using Mesh analysis and power laws.	
Week #13	Magnetism and Magnetic Units and Lenz's Law.	
Week #14	Magnetism and Electromagnetic induction and Lenz's Law.	
Week #15	Troubleshooting DC Circuits.	
Week #16	Review for Final Exam.	
Week 17	Final Examination.	

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