



Note to Instructor: Replace the placeholder text beneath the headings with the appropriate information for your course. Please note that all sections, with the exception of "Other Course Information," are required elements.

Basic Course Information

Semester:	Spring 2021	Instructor Name:	Sanchez, Alfred
Course Title & #:	Electronic Circuits & Semiconductors/ELTR 140	Email:	alfred.sanchez@imperial.edu
CRN #:	20861	Webpage (optional):	
Classroom:	3110	Office #:	
Class Dates:	02-16-2021 to 06-10-2021	Office Hours:	
Class Days:	Tuesdays and Thursdays	Office Phone #:	(760)235-5684
Class Times:	6:00 P.M. to 9:00 P.M.	Emergency Contact:	alfred.sanchez@imperial.edu
Units:	4	Class Format:	Online/Classroom

Course Description

A continuation of ELTRN-120. Topics will include semiconductor devices, amplifiers, and solid-state components. (CSU)

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

ELTRN 120

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. Analyze AC Circuits, Power Supplies. (ILO2, ILO4).
2. Describe the functions of Capacitors and Inductors and its Lenz's Law. (ILO2, ILO4).
3. Analyze RC, RL and RLC circuits and obtain their respective equations. (ILO2, ILO4).
4. Construct, Test, and Troubleshoot various RC, RL, and RLC 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. Measure AC voltage and current sine wave form patterns.
2. Measure capacitor ability to store electrical energy.
3. Solve problems related to AC series, AC parallel, and AC series-parallel RC circuits.
4. Measure the inductor ability to store electromagnetic energy and the direction of induced voltage (Lenz's Law).
5. Solve problems related to AC series, AC parallel, and AC series-parallel RL circuits.
6. Solve problems related to AC series, AC parallel, and AC series-parallel RLC circuits.
7. Measure the transformer ability to increase/decrease voltage & current amplitudes.
8. Verify the PN junction semiconductor behavior.

Textbooks & Other Resources or Links

1. Floyd, Thomas L. & Buchla, David M. (2013). *Electronics Fundamentals: A System Approach* 1st. New Jersey. Pearson Education Limited ISBN: 978-0133143638.
2. Floyd, Thomas L. & Buchla, David M. (2009). *Electronic Fundamentals: Circuits, Devices and Applications*. (8th/e). New Jersey Prentice Hall. ISBN: 0135072956.
3. *Basic Mathematics for Electricity and Electronics* (8th/e). Bertrand B. Singer, Harry Forster, and Michael E. Schultz (2000). New York Macmillan/McGraw-Hill. ISBN: 0-02-805022-3.

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: 5
3. Laboratory Reports: 5
4. Mid-Term Exam: 40
5. Final Exam: 40

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 to 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.

Course Policies

- **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.**
- **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.**

IVC Student Resources

- **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.

Anticipated Class Schedule/Calendar

DATE	Activity, Assignment, and/or Topic	Assignment Due
WEEK 1 Feb 16 and Feb 18	Syllabus and Introductions	
WEEK 2 Feb 23 and Feb 25	Introduction to Alternating Current and Voltage	
WEEK 3 Mar 2 and Mar 4	AC Resistive Series Parallel Circuits	
WEEK 4 Mar 9 and Mar 11	Capacitors and RC Circuits	
WEEK 5 Mar 16 and Mar 18	RC Circuits and Inductors	
WEEK 6 Mar 23 and Mar 25	RL Circuits	
WEEK 7 Mar 30 and Apr 1	Review for Mid-term	
WEEK 8 Apr 6 and Apr 8	**No Class. Spring Break**	
WEEK 9 Apr 13 and Apr 15	Mid-TERM	
WEEK 10 Apr 20 and Apr 22	RLC Circuits	
WEEK 11 Apr 27 and Apr 29	Chap. 16 Introduction to Semiconductors	
WEEK 12 May 4 and May 6	Diodes and Applications	
WEEK 13 May 11 and May 13	Chap. 14 Transformers	
WEEK 14 May 18 and May 20	Chap. 17 Transistors	
WEEK 15 May 25 and May 27	Digital	
WEEK 16 June 1 and June 3	Review for Final Exam	
Week 17 June 8 and June 10	Final Exam	

*****Subject to change without prior notice*****