Imperial Valley College

COURSE SYLLABUS FOR:

ELECTRONIC CIRCUITS AND SEMICONDUCTORS (ELTR 140)

4.0 Credit Units. CRN 10727, Fall 2012

Javier Jimenez Instructor.
Javier.Jimenez@imperial.edu

Course Description:

Recommended Preparation: ELTR 120. A continuation of ELTR 120. Topics will include: semiconductor devices, amplifiers, and solid state components. (CSU)

Student Learning Outcomes:

1. Familiarize with Alternating Current (AC) Theory and meters.
2. Analyze, read and interpret AC Circuits with RC, RL and RLC.
3. Understand the operation of a Transformer and practical uses.
4. Built a Power Supply using Semiconductor Diodes and understanding the operation of the transistor.

Lecture Course Goals And Objectives:

Upon successful completion of this course, the student will be able to:

1. The student will be able to solve problems related to AC series, AC parallel, and AC series-parallel RC, RL, and RLC circuits.
2. The student will be able to verify the PN junction semiconductor behavior.
3. The student will be able to design and solve circuits related to diodes and transistors.
4. The student will be able to solve and design circuits related to Transformers.

Laboratory Course Goals And Objectives:

Upon successful completion of this course, the student will be able to:

1. Demonstrate the correct safety practices and procedures used in the Laboratory.
2. Properly operate and accurately read conventional AC meters and oscilloscope.
3. Construct resistive circuits utilizing the protoboard, printed circuit board (soldering), resistors and conventional hand tools.
4. Experimentally validate Ohm's and Kirchoff's laws on A. C. circuits.
5. Recognize series of circuits and compare mathematical relationships and calculations to the measured values.
6. The student will be able to construct, test, and troubleshoot circuits in AC and DC series, parallel, and series-parallel RC circuits.
7. The student will be able to measure the transformer ability to increase/decrease voltage amplitudes.
8. The student will build and test a power supply.

Class Hours:

Fridays (Lecture/Discussion) from 0830-1130a.m. at room 1307.
Fridays (Lecture/Discussion) from 1145-0245p.m. at room 1307.

Important Dates:

Class Start Date: 24-AUG-12 (20-AUG-12).
Class End Date: 07-DEC-12.
Last day to add class: 01-SEP-12.
Last day to drop with a refund: 01-SEP-12.
Last day to drop without a "W": 03-SEP-12.

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Last day to drop with a "W": 10-NOV-12.

Detail Course Schedule:

1. AC Resistive Series Parallel Circuits (24-AUG-12)
2. Capacitors (7-SEP-12)
3. RC Circuits (14-SEP-12)
4. Inductors, RL and RLC Circuits (28-SEP-12)
5. Review for Mid Term Exam (05-OCT-12)
6. Mid Term Exam (12-OCT-12)
7. Introduction to semiconductors (19-OCT-12)
8. Diodes and applications (26-OCT-12)
9. Transformers (9-NOV-12)
10. Transistors (16-NOV-12)
11. Review for Final Exam (30-NOV-12)
12. Final Examination (07-DEC-12)

Discussion Of Assignments And Instructional 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.

Statement Of Grading Procedures:

1. Homework, Assignments:	10%
2. Lab. Experiments and Reports:	21% Working Experiment and 9% Report
3. Mid-Term Exam:	30%
4. Final Exam:	30%

Attendance Policy:

Students are expected to attend class meetings regularly.

An absence is arriving more than 20 minutes after the beginning of the class, or leaving more than 20 minutes before the end of the class also if you leave the room for more than 20 minutes for whatever reason, you are absent.

A tardy is arriving within the first 20 minutes after the beginning of the class or leaving within the last 20 minutes before the end of the class, if you need to use the restroom, you are expected to return within a reasonable time period. A student who is tardy three times may be considered as having been absent one class. If a student reaches the third absence after the deadline to drop the class with a "W", his/her grade will be reduced one letter grade for each subsequent absence.

Textbook:

Electronics Fundamentals: Circuits, Devices, and Applications. Floyd & Buchla. Prentice Hall. ISBN: 0-13-507295-6.

Required Materials:

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Scientific Calculator CASIO fx-115MS or equivalent.
All other materials with the exception of the text book and calculator will be supplied.

Accommodations For Disabilities:
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.

Policy On Plagiarism And Cheating:
If a student is found cheating in a test or assignment, he/she will receive a grade of zero for the test or assignment.