IMPERIAL COMMUNITY COLLEGE DISTRICT
IMPERIAL VALLEY COLLEGE

COURSE OUTLINE

DIVISION : Industrial Technology **ORIGINATION DATE** : May 1990

MODIFICATION DATE: Nov 2008

COURSE TITLE: Electronics Circuits ans Semiconductors **COURSE No** : ELTR140 **UNITS** : 4

LEC HRS : 2 **LAB HRS :** 3 **TBA** :_____

If cross-referenced, please complete

COURSE NO. (S) _____ **COURSE TITLE** _____

I. CATALOG DESCRIPTION:

A continuation of Electronics 120. Topics will include: Semiconductor devices. Amplifiers and solid state components.

II. PREREQUISITES, IF ANY:

III. COREQUISITES, IF ANY:

IV. GRADING CRITERIA:

_X_ Course must be taken on a “letter-grade” basis only.

____Course may be taken on a “credit” basic or for a letter grade.

____Course must be taken on a “credit” basis only.

RECOMMENDED PREPARATION:

Math 90

V. MEASURABLE COURSE OBJETIVES AND MINIMUM STANDARDS FOR GRADE OF "C":

1. THE STUDENT WILL BE ABLE TO MEASURE THE INDUCTOR ABILITY TO STORE ELECTROMAGNETIC ENERGY

2. THE STUDENT WILL BE ABLE TO SOLVE PROBLEMS RELATED TO AC SERIES, AC PARALLEL, AND AC SERIES-PARALLEL RL CIRCUITS

3. THE STUDENT WILL BE ABLE TO MEASURE THE TRANSFORMER ABILITY TO INCREASE/DECREASE VOLTAGE & CURRENT AMPLITUDES.

4. THE STUDENT WILL BE ABLE TO VERIFY THE PN JUNCTION SEMICONDUCTOR BEHAVIOR.

5. THE STUDENT WILL BE ABLE TO DESIGN AND SOLVE CIRCUITS RELATED TO DIODES.

6. THE STUDENT WILL BE ABLE TO SOLVE AND DESIGN CIRCUITS RELATED TO BJT AND FET TRANSISTORS.

7. THE STUDENT WILL BE ABLE TO SOLVE AND APPLY POWER CIRCUITS RELATED TO THYRISTORS.

8. THE STUDENT WILL BUILD AND TEST A POWER SUPPLY.

VI. CORE CONTENT TO BE COVERED IN ALL SECTIONS:

1. INDUCTORS	Approx. % of Course or hours 10%
2. RL CIRCUITS	Approx. % of Course or hours 10%
3. RLC CIRCUITS	Approx. % of Course or hours 20%
4. TRANSFORMERS	Approx. % of Course or hours 15%
5. INTRODUCTION TO SEMICONDUCTORS	Approx. % of Course or hours 15%
6. DIODES AND APPLICATIONS	Approx. % of Course or hours 10%
7. TRANSISTORS AND THYRISTORS	Approx. % of Course or hours 20%

VII. METHOD OF EVALUATION TO DETERMINE IF OBJECTIVES HAVE BEEN MET BY STUDENTS: (Check all that apply)

Essay	X	Class Activity	X	Written Assignments	X
Problem Solving Exercise	X	Final Exam	X	Oral Assignments	X
Skill Demonstration	X	Objective	X	Quizzes	X

Other _____

INSTRUCTIONAL METHODOLOGY: (Check all that apply)

Lecture	X	Discussion	X	Demonstration	X
Audio Visual	X	Group Activity	X	Lab Activity	X
Computer Assisted Instruction	X	Individual Assistance	X	Simulation/ Case Study	X

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. _____

Other _____

VIII. REQUIRED AND MAJOR OPTIONAL READING (S), INCLUDING TEXTBOOK (S) AND SOFTWARE:

Texts: Floyd, Electronics Fundamentals: Circuits, Devices, and Applications, 8th Ed. 2008.
Floyd, Experiments in Electronics Fundamentals and Electric Circuits Fundamentals, 8th Ed. 2009.

Journals: Electronic Design, EDN, ECN, Circuit Cellar Ink.

Software: Multisim 2009, Electric & Electronics Simulation Program