

**INTER AMERICAN UNIVERSITY OF PUERTO RICO
BAYAMON CAMPUS
SCHOOL OF ENGINEERING
ELECTRICAL ENGINEERING PROGRAM**

COURSE SYLLABUS

I. GENERAL INFORMATION

- A. Course Number and Title
ELEN 3311 - Electronics I
- B. Credits
Four (4) credits
- C. Hours of contact
Three (3) hours of lecture per week
Three (3) hours of laboratory per week
- D. Prerequisite
ELEN 3301 - Electric Circuits I

II. COURSE DESCRIPTION

Semiconductor theory and its characteristics. Diodes, bipolar junction transistors and field-effect transistors. Single-stage and multistage amplifier analysis and design considerations. Signal generator circuits. Introduction to operational amplifiers.

III. GENERAL OBJECTIVES

At the end of the semester the student should be able to:

1. Explain the semiconductor physics.
2. Design electronic systems using diodes and transistors.
3. Understand the difference between bipolar junction transistors and field-effect transistors.
4. Understand the ideal operational amplifier behavior and linear applications.
5. Understand and design signal generator circuits.

IV. COURSE CONTENTS

- A. Introduction to operational amplifiers
- B. Semiconductors, PN junction and diodes

- C. Bipolar junction transistors
- D. Field effect transistors
- E. Multistage amplifiers
- F. Signal generation circuits

V. EVALUATION CRITERIA

Student performance will be assessed based on homework, a midterm exam and a final exam. The final grade will be based on the following distribution:

- 60 % — Homework
- 20 % — Midterm Exam
- 20 % — Final Exam

The professor may assign and consider additional coursework at his or her discretion.

Standard curve of qualifications:

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
0 - 59	F

VI. TEXT

Hambley, Allan R.; Electronics, 2nd Edition; Prentice Hall, 2000.

VII. REFERENCES

Malik, Norbert R.; Electronic Circuits: Analysis Simulation, and Design; Prentice Hall, 1995.

Mauro, R.; Engineering Electronics: A Practical Approach; Prentice Hall, 1989.