

Mayagüez Campus
College of Engineering
Electrical and Computer Engineering Department

INEL 4076 - Fundamentals of Electronics

Number of credits: 3

Contact Period: 3 hours of lecture per week

Description: Fundamentals and Applications of Analog and Digital Electronics.

Pre-requisites INEL 4075

Course time frame and thematic outline:

Outline	Contact Hours
Number systems and base conversion methods	2.0
Binary arithmetic	1.0
Basic logic gates and definitions	3.0
Boolean algebra	3.0
Minimization of Boolean functions	3.0
Design and minimization of combinational circuits	3.0
Flip-Flops, registers and counters	4.0
TTL and CMOS logic families	2.0
Memories	3.0
Microprocessors	5.0
Operational Amplifiers	3.0
Conduction Mechanisms in Solids and electrical properties of semiconductors	2.0
The semiconductor Diode and models	1.0
Diode circuits and power supplies	2.0
The Zener diode voltage regulator	1.0
The bipolar junction transistor (BJT) construction	2.0
The BJT voltage and current components	2.0
BJT bias and circuits	3.0
Total hours: (equivalent to contact period)	45

Grading System: A:100-90, B:89-80, C:79-70, D:69-60, F:59-0.

Evaluation Strategies:

Quizzes	10 pts
Assignments	40 pts
Partial Exams	300 pts (3 @ 100 pts each)
Final Exam	100 pts
Total Points:	450 pts

Partial Exams: All during class period. [Sep 14](#), [Oct 17](#), [Nov 21](#).

Textbook: Allan R. Hambley, *Electrical Engineering Principles and Applications*, 6th Ed., Prentice Hall, 2014

Instructor: José M. Rosado Román, PhD

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RULES IN CLASS:

- Students are not allowed to leave the classroom during class except in exceptional circumstances.
- Exam attendance is required unless you have a medical excuse or equivalent documented emergency.
- Class attendance is required. You are expected to arrive on time to class. I reserve the right to lock the door after 5 minutes of class start for the benefits of the other students.
- Dishonest behavior, as commonly understood, which includes exam cheating or plagiarism, will result in at least a zero for the item, and for an aggravated incident, failure in the course and initiation of University disciplinary action. In research, you expect to build on others' work, but it should be very clear what is yours and what is theirs, clearly referenced or acknowledged.
- If there is a conflict with my Office Hours => schedule by appointment.
- No beepers and/or cellular phones are allowed during exams, and their use during classes should be limited to emergencies. Leave the room if the need to use it arrives.
- No baseball caps allowed during quizzes or exams.
- No "special" projects will be given to anyone to improve grades or for any other reason.
- Disabilities: Reasonable accommodations will be coordinated in accordance with the needs of the student.
- Read your email frequently: I communicate announcements like quiz cancellation and changes by email.