

University of Puerto Rico  
 Mayagüez Campus  
 College of Engineering  
 Department of Electrical and Computer Engineering  
 Bachelor of Science in Electrical Engineering

**Course Syllabus**

<b>1. General Information:</b>	
Alpha-numeric codification: INEL 4225	
Course Title: DIGITAL ELECTRONICS LABORATORY	
Number of credits: 3	
Contact Period: One three-hour laboratory per week.	
Required in ICOM	
<b>2. Course Description:</b>	
English: Experiments with digital electronic circuits and analog gates.	
Spanish: Experimentos con circuitos electrónicos digitales y compuertas analógicas.	
<b>3. Pre/Co-requisites and other requirements:</b>	
Prerequisites: INEL 4211 and INEL 4207	
<b>4. Course Objectives:</b>	
The objective of the course is to provide the students with practical experience in the design, assembly and testing of prototypes for digital and analog electronic circuits.	
<b>5. Instructional Strategies:</b>	
<input checked="" type="checkbox"/> conference <input checked="" type="checkbox"/> discussion <input type="checkbox"/> computation <input type="checkbox"/> laboratory  <input checked="" type="checkbox"/> seminar with formal presentation <input type="checkbox"/> seminar without formal presentation <input checked="" type="checkbox"/> workshop  <input type="checkbox"/> art workshop <input type="checkbox"/> practice <input type="checkbox"/> trip <input type="checkbox"/> thesis <input checked="" type="checkbox"/> special problems <input type="checkbox"/> tutoring  <input type="checkbox"/> research <input type="checkbox"/> other, please specify:	
<b>6. Minimum or Required Resources Available:</b>	
<b>7. Course time frame and thematic outline</b>	
<b>Outline</b>	<b>Contact Hours</b>
Voltage Regulators	
Multivibrators	
Logic Families	
Operational amplifier circuits	
A/D, D/A converters	
LED's applications	
Frequency counter	
Project	
Exams	
<b>Total hours: (equivalent to contact period)</b>	
<b>8. Grading System</b>	
<input checked="" type="checkbox"/> Quantifiable (letters) <input type="checkbox"/> Not Quantifiable	

**9. Evaluation Strategies** (Suggested): The faculty member teaching the course will provide the student with the evaluation strategy he/she will be using throughout the semester. This will be done within the first week of classes.

	Quantity	Percent
<input type="checkbox"/> Exams		
<input type="checkbox"/> Final Exam		
<input type="checkbox"/> Short Quizzes		
<input type="checkbox"/> Oral Reports		
<input type="checkbox"/> Monographies		
<input type="checkbox"/> Portfolio		
<input type="checkbox"/> Projects		
<input type="checkbox"/> Journals		
<input type="checkbox"/> Other, specify: Homework	_____	
<b>TOTAL:</b>		<b>100%</b>

**10. Bibliography:**

Digital Electronics Lab. Manual; RUM.

**11. According to Law 51**

Students will identify themselves with the Institution and the instructor of the course for purposes of assessment (exams) accommodations. For more information please call the Student with Disabilities Office which is part of the Dean of Students office (Chemistry Building, room 019) at (787)265-3862 or (787)832-4040 extensions 3250 or 3258.

12. Contribution of Course to meeting the requirements of Criterion 5:

Math	Basic Science	General	Engineering Topic
			√

**13. Course Outcomes**

**Map to  
Program  
Outcomes**

- Apply circuit analysis techniques to understand the physical operation of an electrical circuit system. a
- Be able to set up and safely perform basic electrical laboratory procedures. b
- Be able to graphically and verbally represent or describe experimental data sets. b
- Be able to analyze, interpret, and draw conclusions based on experimental data. b
- Be able to work in teams to complete laboratory work and assignment. d
- Be able to interpret and draw electrical schematic diagrams. g
- Simulate electrical circuits using commercially available software for circuit analysis. k

Person(s) who prepared this description and date of preparation: Raúl E. Torres.  
Submitted by: Dr. Raúl E. Torres mar 2007. Revised by: Academic Affairs Committee,  
May, 15, 2008.

