

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

Course Syllabus

1. General Information:	
Alpha-numeric codification: INEL4206 Course Title: Microprocessors Number of credits: 3 Contact Period: 3 hours of lecture per week Required in INEL and ICOM	
2. Course Description:	
English: Architecture, organization and operation of microprocessors and their supporting devices; design of microprocessor-based systems.	
Spanish: Arquitectura, organización y operación de microprocesadores y sus dispositivos de apoyo; diseño de sistemas basados en microprocesadores.	
3. Pre/Co-requisites and other requirements:	
Prerequisite: INEL 4205 and INEL 4201	
Prerequisite by topics:	
Number systems, knowledge of logic circuit design, knowledge of basic electronic circuits analysis and design, basic programming concepts.	
4. Course Objectives:	
The course is designed to introduce students to the architecture, operation, programming, and basic interfacing of microprocessors . The course, also, includes the study of the microprocessor instruction set and the use assembly language programming for the Intel family of microprocessors.	
5. Instructional Strategies:	
<input checked="" type="checkbox"/> conference <input checked="" type="checkbox"/> discussion <input type="checkbox"/> computation <input type="checkbox"/> laboratory <input type="checkbox"/> seminar with formal presentation <input type="checkbox"/> seminar without formal presentation <input type="checkbox"/> workshop <input type="checkbox"/> art workshop <input type="checkbox"/> practice <input type="checkbox"/> trip <input type="checkbox"/> thesis <input type="checkbox"/> special problems <input type="checkbox"/> tutoring <input type="checkbox"/> research <input checked="" type="checkbox"/> other, please specify: Team work in software and computer hardware design	
6. Minimum or Required Resources Available:	
Computer labs, high level languages compilers, simulator for digital systems.	
7. Course time frame and thematic outline	
Outline	Contact Hours
Introduction to microprocessor and computer	2
Microprocessor architecture	1
Addressing modes	2
Data movements instructions	3
Arithmetic and logic instructions	5
Program control instructions	2
Programming the microprocessor	7
8086/88 hardware specifications	2

Memory interface	5
Basic I/O interface	8
Interrupts	2
Direct memory access	3
Exams	3
Total hours: (equivalent to contact period)	45

8. Grading System

Quantifiable (letters) 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 checked="" type="checkbox"/> Exams	3	45
<input checked="" type="checkbox"/> Final Exam	1	20
<input type="checkbox"/> Short Quizzes		
<input type="checkbox"/> Oral Reports		
<input type="checkbox"/> Monographs		
<input type="checkbox"/> Portfolio		
<input checked="" type="checkbox"/> Projects	3	35
<input type="checkbox"/> Journals		
<input type="checkbox"/> Other, specify:		
TOTAL:		100%

10. Bibliography:

Brey, Barry B. The Intel Microprocessors 8th Edition, Prentice Hall.

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

- | | |
|--------------------------------------------------------------|-----|
| 1. Design applications in assembly language | (a) |
| 2. Design microprocessors based/related systems/components | (c) |
| 3. Develop projects working in EE-CE teams | (d) |
| 4. Write reports to present projects development process | (g) |
| 5. Present projects in front of an audience | (g) |
| 6. Use a digital circuits simulator to test hardware designs | (k) |

Person (s) who prepared this description and date of preparation: José Navarro. Submitted by: Gladys O. Ducoudray, October 2007