



Mechatronic Engineering Program

Dept. of Mechanical Engineering

Course specification

Electronic Circuits (2) E 401

1. Course Aim

Main Aim	Providing the necessary background both in digital electronics and in computer science. Over viewing of PIC architecture and programming tools. Programming the various functions, modules, and devices.
Sub-Aims	Preparing a microprocessor and microcontroller programmer which is familiar with a host of computer science topics, including: <ul style="list-style-type: none">• low-level data representations• binary arithmetic• computer organization• input/output programming• concurrency and scheduling• memory management• timing operations• system functions At the same time, students must be quite conversant with digital electronics and circuit design

2. Course Content

Microprocessor architecture, Microprocessor families, 8088/8086 microprocessors, Hardware and instruction set, programming Languages, Assembly Language, Microprocessor interfacing. Interfacing microprocessors with dc and stepper motors. Microprocessors.

3. Course Topics		
	Topic	week
1st topic	1. Microprocessor architecture	1,2
	2. microprocessor families	3
	3. 8088/8086 microprocessors	4
2nd topic	4. Hardware and instruction set	5,6
	5. programming Languages	7,8
3rd topic	6. Assembly Language	9,10
4th topics	7. microprocessor interfacing	11,12
5th topics	8. Interfacing microprocessors with dc and stepper motors	13,14

4. Grades Distribution			
Assesment Methods		Percentage	
Final Exam		% 66.66	
Oral Final Exam			
Work year exam		% 33.34	
Assessments	Written Exam	% 66.66	%100
	Oral Exam		
	Tutorial assessment	% 33.34	
	Project assessment		
	Model assessment		
	Report assessment		
	Quiz assessment		
	Presentation assessment		
	Discussion		

	Laboratory test		
	Home Exam		
	Monitoring	.	
Total			% 100

5. List of References

Course notes	
Required books	
Recommended books	Microcontroller Programming, Julio Sanchez & Maria P. Canton 2007 by Taylor & Francis Group, LLC
Periodicals, web sites.. etc.	