

<b>Department of Computer Engineering</b>			
<b>Microprocessor for Mechtronics Lab. (66476)</b>			
<b>Total Credits</b>	<b>1</b>		
<b>major compulsory</b>			
<b>Prerequisites</b>	P1 : Microprocessor for Mechatronics II (66474) OR Microprocessor (67424) P11Synch. : Microprocessor for Mechatronics II (66474)		
<b>Course Contents</b>			
Introduction to the Microprocessors (Intel 80386) and its Architecture, Addressing Modes, Data Movement Instructions, Arithmetic and Logic Instructions, Program Control Instructions, Programming the Microprocessor, Interrupts. ADC, DAC, and I/O interfacing and control.			
<b>Intended Learning Outcomes (ILO's)</b>		<b>Student Outcomes (SO's)</b>	<b>Contribution</b>
1	Demonstrate an understanding of the microprocessor architecture, its instructions and addressing modes	A	40 %
2	Develop assembly language programs for microprocessor applications such as data acquisition, DC and stepper motor control, and dealing will sensors.	K	30 %
3	Understand and demonstrate the microprocessor signals, bus cycles, timing a memory system and I/O circuit interface and how to interface them to a microprocessor	C	30 %
<b>Textbook and/ or References</b>			
1. Barry B. Brey. The Intel Microprocessors, 2. Kits User guides (from ElettronicaVeneta)			
<b>Assessment Criteria</b>		<b>Percent (%)</b>	
Laboratory Work		60 %	
Final Exam		40 %	
<b>Course Plan</b>			
<b>Week</b>	<b>Topic</b>		
1	Introduction to the microprocessor kits and its components		
2	Exp1: Introduction To Basic Input Output		
3	Exp2: Analog to Digital Conversion		
4	Exp3: Kepad		
5-6	Exp4: Digital to Analog Conversion		
7-8	Exp5: Strain Gage and Temperature Sensor Acquisition		
9	Exp6: Ultrasonic Receiver and Transmitter		
10-11	Exp7: D.C Motor Control (Part 1 + Part2)		
12	Exp7: Stepper Motor		
13-14	Exp8: Stepper Control Positioner		
15	Exp9: Calculator		
15	Final Exam		