FAKULTI KEJURUTERAAN ELEKTRIK
UNIVERSITI TEKNOLOGI MALAYSIA
SEMESTER 2011/2012 01
SEE3223 : MICROPROCESSOR

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Objective
This course introduces the principles and applications of microprocessors. Topics emphasized are processor architecture, assembly language and fundamentals of interfacing in a microprocessor-based embedded system

Synopsis
This course emphasizes on the following:
1. Understanding the fundamentals of microprocessor operation
2. Writing coherent and error-free assembly language programs
3. Designing basic interfacing circuits

Course outcomes:
At the end of the course the students should be able to:

CO1	Describe and differentiate all the component of microprocessor-based systems.
CO2	Analyze and design AVR ATMega32 assembly language programs.
CO3	Analyze and design AVR ATMega32 based microcontroller systems.
CO4	Work with AVR Studio and communicate effectively in a team to solve complex AVR ATMega32 design problems.

Mapping of CO to PO1-P10, emphasis and assessment method

	PO1	PO2	PO3	PO4	PO5	P06	P07	P08	P09	P10
CO1	1,a									
CO2			1.a							
CO3			1,a		2,a					
CO4				1,b	1,b	2,b	3,c			

1 = strong emphasis, 2 = medium emphasis, 3 = low emphasis
a = examinations, tests, quizzes; b = assignment, report; c= group presentation, laboratory, seminar; d=thesis

Assessments

Quizzes (4)	40%
Group assignment	10%
Final exam	50%

Course Contents

Week	
Week 1: Introduction to Embedded Systems	
Week 2: Introduction to AVR ATMega32 Architecture	
Week 3: Introduction AVR Assembly Language Programming	**Test 1 27/09/11**
Week 4: AVR ATMega32 Addressing Mode	
Week 5: Basic Instruction Set Architecture (data transfer, rotate, bitwise)	
Week 6: Data Processing Instruction (arithmetic & logic)	**Test 2 10/10/11**
Week 7 : Program control Instruction (branch , selection, repetition)	
Week 8: Stack and subroutine	
Week 9: C programming introduction	
Week 10: General Purpose Input Output (GPIO)	**Test 3 15/11/11**
Week 11 : Pulse Width Modulation , timer , counter	
Week 12: Analog to Digital Conversion	
Week 13: Interrupts & Exceptions	**Test 4 6/12/11**
Week 14: Case Study	

Prepared by:

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Mr. Kamal Khalil
(Course coordinator)

Date: 03 January 2011

Certified by:

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Date: