SRM UNIVERSITY

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ICE

Course Code	:	IC0307 & EI0307
Course Title	:	MICROPROCESSORS AND MICROCONTROLLERS
Year& Semester	:	V semester
Course duration	:	Odd semester (July-Nov 2010)
Location	:	Tech Park

Faculty Details:

Name of the staff	Section	Office	Office Hours	Mail ID
D.Tamijselvan	EIE A,B	Tech Park	8.45-4 pm	tamijselvan@yahoo.com
B.P.Vinothkumar	ICE A	Tech Park	8.45-4 pm	bpvinoth@gmail.com
Sam jebakumar	ICEB	Tech Park	8.45-4 pm	jsjebakumar@yahoo.co.in

Required Text Books:

1. Ramesh S.Gaonkar, Microprocessor architecture, programming and its application with 8085, Penram Int. Pub. (India) IV edition.
2. A.K.Roy, K.M. Bhurchandi, Intel Microprocessors Architecture, Programming and Interfacing, McGraw Hill International Edition - 2001
3. Muhammad Ali Mazidi and Janica Gilli Mazidi, The 8051 microcontroller and embedded systems, Pearson Education, 5th Indian reprint, 2003

Web Resource:

- www.wikipedia.org/wiki/Intel_8085
- http://www.techinterviews.com/8085-micr0processor-questions
- http://en.wikipedia.org/wiki/Intel_8086
- http://www.cpu-world.com/Arch/8086.html
- en.wikipedia.org/wiki/Intel_8255
- www.electronics.dit.ie/staff/tscarff/8255PPI/8255.htm
- www.rbainnovations.com

Prerequisite :

Digital systems, Electronic devices and Electronic circuits

Objective:

1. To learn the concepts of basic microprocessors
2. To get knowledge in interfacing devices
3. To know the concepts of microcontroller and its applications
4. To develop programming skills in microprocessor and microcontroller

Tentative test details and portions:

Cycle Test - I:09.08.11 Unit I & II

Cycle Test –II: 15.09.11 Unit III

Model Exam:20.10.11 All five units

Assessment details

Cycle test I	10 points
Cycle test II	10 points
Model test	15 points
Surprise test (2* 7.5 Points)	15 points
TOTAL	50 Points

Outcomes

Students who have successfully completed this course

Course outcome	Program outcome
• Architecture and Programming of 8085 microprocessor • Architecture and Programming of 8086 microprocessor	A: The student will be able to do program in 8085. B: The student will be able to do program in 8086.

• Architecture and Programming of 8051 microcontroller • Various Peripheral interfacing • Applications of microprocessor based system	C. The student will be able to do program in 8051.

Detailed Session Plan

Day	Name of the topics	Reference
	UNIT-I	
DAY 1	8085 Microprocessor: Evolution of microprocessors	Ramesh S.Goankar
DAY 2	8085 Microprocessor Architecture	Ramesh S.Goankar
DAY 3	Addressing modes	Ramesh S.Goankar
DAY 4	Instruction Set	Ramesh S.Goankar
DAY 5	Memory Interfacing	Ramesh S.Goankar
DAY 6	Basic timing diagram	Ramesh S.Goankar
DAY 7	Interrupts	Ramesh S.Goankar
DAY 8	Software Interrupts	Ramesh S.Goankar
DAY 9	Data transfer schemes	Ramesh S.Goankar
DAY 10	Surprise Test- I	
	UNIT II	
DAY 11	Peripheral Interfacing: Programmable Peripheral Interface 8255	Ramesh S.Goankar
DAY 12	Programmable Communication Interface 8251 USART	Ramesh S.Goankar
DAY 13	Programmable Interrupt Controller 8259A	Ramesh S.Goankar
DAY 14	Programmable Interval Timer 8253	Ramesh S.Goankar
DAY 15	Keyboard/Display Controller 8279	Ramesh S.Goankar
DAY 16	DMA Controller 8237	Ramesh S.Goankar

DAY 17	Floppy Disk Controller 8272 and CRT Controller 8275	Ramesh S.Goankar
DAY 18	Surprise Test-II	
	UNIT III	
DAY 19	INTEL 8086/8088 Microprocessor: Architecture of 8086/8088	A.K.Roy
DAY 20	Register Organization	A.K.Roy
DAY 21	Signal Description of 8086	A.K.Roy
DAY 22	Minimum mode	A.K.Roy
DAY 23	Maximum mode and timings	A.K.Roy
DAY 24	8086 Instruction set	A.K.Roy
DAY 25	Addressing modes	A.K.Roy
DAY 26	Assembler Directives and operators	A.K.Roy
DAY 27	Simple programs	
	UNIT IV	
DAY 28	8031/8051 Microcontroller: Single chip microcontroller	Muhammed Ali Mazidi and Janica Gilli Mazidi
DAY 29	Introduction to 8-bit microcontroller	Muhammed Ali Mazidi and Janica Gilli Mazidi
DAY 30	Architecture of 8031/8051	Muhammed Ali Mazidi and Janica Gilli Mazidi
DAY 31	Signal descriptions of 8051	Muhammed Ali Mazidi and Janica Gilli Mazidi
DAY 32	Register set of 8051and Operational features of 8051	Muhammed Ali Mazidi and Janica Gilli Mazidi
DAY 33	Memory and I/O Interfacing	Muhammed Ali Mazidi and Janica Gilli Mazidi
DAY 34	Interrupts	Muhammed Ali Mazidi and Janica Gilli Mazidi
DAY 35	Instruction set	Muhammed Ali Mazidi and Janica Gilli Mazidi
DAY 36	Addressing mode and simple programs	Muhammed Ali Mazidi and Janica

		Gilli Mazidi
	UNIT V	
DAY 37	Interfacing: Microprocessor based process control system	Douglas V.Hall
DAY 38	Microcomputer based scale	Douglas V.Hall
DAY 39	Interfacing alphanumeric displays	Douglas V.Hall
DAY 40	Keyboard interface	Douglas V.Hall
DAY 41	Speed control of stepper motor	Douglas V.Hall
DAY 42	High power devices interfacing	Douglas V.Hall
DAY 43	A/D interfacing	Douglas V.Hall
DAY 44	D/A interfacing	Douglas V.Hall
DAY 45	Discussion of 2 marks	Douglas V.Hall