SRM UNIVERSITY
(Under section 3 of UGC Act 1956)

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CSE

COURSE PLAN

Course Code : **CS1007**
Course Title : **MICROPROCESSOR & INTERFACING**
Semester : **III**
Course Time : JULY – DEC 2014

Day	SECTION									
	A		B		C		D		E	
	Hour	Timing	Hour	Timing	Hour	Timing	Hour	Timing	Hour	Timing
1		**-**	**6**	**2.20-3.10**	**6**	**2.20-3.10**				
2	**2**	**9.35-10.25**			**6**	**2.20-3.10**			**4**	**11.25-12.15**
3	**4,6**	**11.25-12.15, 2.20-3.10**					**2**	**9.35-10.25**	**2**	**9.35-10.25**
4			**2**	**9.35-10.25**					**3**	**10.35-11.25**
5			**4**	**11.25-12.15**	**4**	**11.25-12.15**	**1,4**	**8.45-9.35, 11.25-12.15**		

Day	SECTION									
	F		G		H		I		J	
	Hour	Timing	Hour	Timing	Hour	Timing	Hour	Timing	Hour	Timing
Monday			**5**	**1.30-2.20**	**7**	**3.10-4.00**	**2**	**9.35-10.25**		
Tuesday	**1**	**8.45-9.35**			**1**	**8.45-9.35**			**2**	**9.35-10.25**
Wednesday			**2**	**9.35-10.25**			**1**	**8.45-9.35**		
Thursday	**1**	**8.45-9.35**							**4**	**11.25-12.15**
Friday	**5**	**1.30-2.20**	**2**	**9.35-10.25**	**2**	**9.35-10.25**	**5**	**1.30-2.20**	**1**	**8.45-9.35**

Day	SECTION					
	K		L		M	
	Hour	Timing	Hour	Timing	Hour	Timing
Monday	**-**	**-**			**1**	**8.45-9.35**
Tuesday	**4**	**11.25-12.15**				
Wednesday			**3**	**10.35-11.25**		
Thursday	**2**	**9.35-10.25**	**5**	**1.30-2.20**	**4,7**	**11.25-12.15, 3.10-4.00**
Friday	**6**	**2.20-3.10**	**2**	**9.35-10.25**		**-**

FACULTY DETAILS

Sec.	Name	Office hr	Mail id
A	C.Jayavarthini	8.00-4.00	Jayavarthini.c@ktr.srmuniv.ac.in
B	Vathana.D	8.00-4.00	vathana.d@ktr.srmuniv.ac.in
C	Vaishnavi Moorthy	8.00-4.00	vaishnavi.m@ktr.srmuniv.ac.in
D	Anitha.J	8.00-4.00	anitha.jo@ktr.srmuniv.ac.in
E	Ida Seraphim.B	8.00-4.00	idaseraphim.b@ktr.srmuniv.ac.in
F	Karthikeyan.M	8.00-4.00	karthikeyan.m@ktr.srmuniv.ac.in
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H	Girija.S	8.00-4.00	girija.s@ktr.srmuniv.ac.in
I	Sowmiya.T	8.00-4.00	sowmiya.t@ktr.srmuniv.ac.in

J	Nithya Kalyani.A	8.00-4.00	nithyakalyani.a@ktr.srmuniv.ac.in
K	Irene Beril Yazhini.P	8.00-4.00	ireneberilyazhini.p@ktr.srmuniv.ac.in
L	Prathiba.J	8.00-4.00	prathipa.j@ktr.srmuniv.ac.in
M	Saranya.S S	8.00-4.00	saranya.ss@ktr.srmuniv.ac.in

TEXT BOOK

1. Ray A K, K M Bhurchandi, "*Advanced Microprocessor & Peripherals"*, Tata McGraw, Hill, Second Edition, 2012.

REFERENCES

1. Soumitra Kumar Mandal, "*Microprocessor & Microcontrollers"*, TataMcGraw Hill, Second Edition, 2012.
2. Barry B. Brey, "The Intel *Microprocessor8086/8088, 80186*", Pearson Education, Eighth Edition, 2009.
3. Uma Rao, Andhe Pallavi, "*The 8051Microcontrollers*", Pearson Education, Second Impression, 2011.
4. Krishna Kant, "*Microprocessors & Microcontrollers*", PHI Learning Private Limited, Eighth Printing, 2011.
5. http://nptel.iitm.ac.in/courses/

Web resources

1. **www.emu8086.com**
2. **www.cpu-world.com**
3. **www.hobbyprojects.com**
4. **www.8052.com**

Pre-requisite : NIL

Objectives :

1. To study the Architecture of 8085 microprocessors
2. To study the Architecture of 8086 and 8088 microprocessors
3. To learn the design aspects of I/O and Memory Interfacing circuits
4. To study about communication and bus interfacing
5. To study the Architecture of 8051 microcontroller

Assessment Details :

Cycle Test – I	:	10 Marks
Surprise Test – I	:	5 Marks
Cycle Test – II	:	10 Marks
Attendance	:	5 Marks
Model Exam	:	20 Marks

Total = 50 Marks

Test Schedule :

S.No.	DATE	TEST	TOPICS	DURATION
1	As per Calendar	Cycle Test - I	Unit I & II	2 periods
2	As per Calendar	Cycle Test - II	Unit III & IV	2 periods
3	As per Calendar	Model Exam	All 5 units	3 Hrs

Outcomes :

Students who have successfully completed this course will have full understanding of the following concepts.

Course outcome	Program outcome
To learn about Microprocessor 8085 Architecture & Instructions Microprocessor 8086 & 8088 Architecture & Instructions design aspects of I/O and Memory Interfacing circuits communication and bus interfacing 8051 microcontroller	• An ability to understand the basic functioning of 8085 and do programs • An ability to understand the basic functioning of 8086, 8088 and do programs • An ability to design memory systems, and do programs for communication and peripheral interfacing • An ability to understand the basic functioning of 8051 microcontroller

Detailed Session Plan :

INTEL 8085 ARCHITECTURE

Introduction to 8085 - 8085 architecture - Pin Details - Addressing Modes -Instruction Set and Assembler Directives - Instruction Timing Diagram – Assembly Language Programming with 8085.

Session No.	Topics to be covered	Time (min)	Ref	Teaching Method	Testing Method
1	Introduction to 8085 and its architecture	50	R4	BB/PP	Discussion Quiz
2	Pin Details, Addressing modes	50	R4 R4	BB/PP	Quiz
3	Instruction Set	50	R4	BB/PP	Quiz
4	Instruction Timing Diagram	50	R4	BB/PP	Quiz
5	Assembly Language Programming with 8085.	50	R4	BB/PP	Quiz
6	Assembly Language Programming with 8085.	50	R4	BB/PP	Discussion Objective type test
7	Programming with 8085.	50	R4	BB/PP	Discussion Objective type test

INTEL 8086/8088 ARCHITECTURE

Introduction to 8086/8088-8086/8088 Architecture - Pin Details – Addressing Modes - Instruction Set and Assembler Directives - Assembly Language Programming with 8086/8088-Basic Peripherals and their interfacing with 8086/8088 - Semiconductor Memory interfacing-Dynamic RAM Interfacing.

8	Introduction to 8086/8088 architecture	50	T1	BB/PP	Discussion
9	Pin Details – Addressing Modes	50	T1	BB/PP	Discussion, Quiz
10	Instruction Set	50	T1	BB/PP	Discussion Comparative Study
11	Instruction Set	50	T1	BB/PP	Comparative Study
12	Assembler Directives	50	T1	BB/PP	Quiz
13	Assembly Language Programming with 8086/8088	50	T1	BB/PP	Quiz
14	Assembly Language Programming with 8086/8088	50	T1	BB/PP	Quiz, Assignment
15	Basic Peripherals and their interfacing with 8086/8088	50	T1	BB/PP	Quiz Group discussion

16	Semiconductor Memory interfacing	50	T1	BB/PP	Quiz Group discussion
17	Dynamic RAM Interfacing	50	T1	BB/PP	Quiz Group discussion
I/O and MEMORY INTERFACING USING 8085/8086 Interrupt of the 8085 Microprocessor- Interrupt of 8086/8087 Microprocessor,Programmable Interrupt Controller 8259A Architecture - Command Words of 8259 - Operating modes, Interfacing I/O Ports - PIO 8255 Architecture - Modes of Operation Programmable Interval Timer 8253 Architecture - Operating modes.					
18	Interrupt of the 8085 Microprocessor,	50	T1	BB/PP	Quiz Group discussion
19	Interrupt of 8086/8087 Microprocessor	50	T1	BB	Discussion
20	Programmable Interrupt Controller 8259A Architecture	50	T1	BB/PP	Discussion, Quiz
21	Command Words of 8259	50	T1	BB/PP	Discussion Comparative Study
22	Operating modes	50	T1	BB/PP	Comparative Study
23	Interfacing I/O Ports	50	T1	BB/PP	Quiz
24	PIO 8255	50	T1	BB/PP	Quiz
25	Modes of Operation	50	T1	BB/PP	Quiz, Assignment
26	Programmable Interval Timer 8253 Architecture	50	T1	BB/PP	Quiz Group discussion
27	Programmable Interval Timer 8253 Architecture	50	T1	BB/PP	Quiz Group discussion
28	Operating modes	50	T1	BB/PP	Quiz Group discussion
COMMUNICATION AND BUS INTERFACING WITH 8085/8086 Introduction - Serial Communication Interface 8251, DMA Controller 8237 -Architecture-Register organization - DMA Operation, Keyboard and Display I/O Interface 8279 - Architecture - Modes of Operation - Command Words of 8279 - CRT Controller 8275 - Analog to Digital Interfacing Architecture - Bus Interface - UART 8250.					
29	Introduction	50	T1	BB/PP	Quiz Group discussion
30	Serial Communication Interface 8251	50	T1	BB	Discussion
31	DMA Controller 8237 –Architecture	50	T1	BB/PP	Discussion, Quiz
32	Register organization - DMA Operation	50	T1	BB/PP	Discussion Comparative Study
33	Keyboard and Display I/O Interface 8279 – Architecture	50	T1	BB/PP	Comparative Study
34	Command Words of 8279	50	T1	BB/PP	Quiz
35	CRT Controller 8275	50	T1	BB/PP	Quiz
36	Analog to Digital Interfacing Architecture	50	T1	BB/PP	Quiz, Assignment
37	Bus Interface - UART 8250	50	T1	BB/PP	Quiz Group discussion

MICROCONTROLLERS 8051

Introduction - Architecture of 8051 Microcontroller - Memory organization - Pindiagram of 8051 Microcontroller - Addressing Modes - Instruction set -Timers/counters - serial Communication- assembly Language programs - Applications of Microcontrollers.

38	Introduction - Architecture of 8051 Microcontroller	50	T1	BB/PP	Quiz Group discussion
39	Memory organization , Pindiagram of 8051 Microcontroller	50	T1	BB	Discussion
40	Addressing Modes	50	T1	BB/PP	Discussion, Quiz
41	Instruction set	50	T1	BB/PP	Discussion Comparative Study
42	Timers/counters	50	T1	BB/PP	Comparative Study
43	serial Communication	50	T1	BB/PP	Quiz
44	assembly Language programs	50	T1	BB/PP	Quiz
45	Applications of Microcontrollers	50	T1	BB/PP	Quiz, Assignment

- BB – Black Board
- PP – Power Point

Prepared by **Approved by**

Mrs.C. Jayavardhini,AP/CSE **HOD/CSE**