SRI VENKATESWARA COLLEGE OF ENGINEERING

COURSE DELIVERY PLAN - THEORY

Department of Electrical and Electronics Engineering	LP: EE18503 Rev. No: 00 Date: 04.07.2023
B.E/~~B.Tech/M.E/M.Tech~~ : EEE Regulation: 2018A PG Specialisation : - Sub. Code / Sub. Name : EE18503 MICROPROCESSORS AND MICROCONTROLLERS Unit : I	

Unit Syllabus: 8085: Functional block diagram -- Signals – Memory interfacing – I/O ports and data transfer concepts – Timing Diagram – Interrupts - Study of Architecture and programming of ICs: 8255 PPI, 8259 PIC, 8251 USART, 8279 Key board display controller and 8254 Timer/ Counter.

Objective: To introduce the rudiments of architecture of microprocessor and microcontroller

Session No *	Topics to be covered	Ref	Teaching Aids
1	Introduction to Microprocessors	1	PPT
2	8085: Functional block diagram	1	PPT
3	8085 Pinouts, Timing Diagram	1	PPT
4	Memory interfacing	1	PPT
5	I/O ports and data transfer concepts	1	PPT
6	Interrupts	1	PPT
7	Study of Architecture and programming of ICs: 8255 PPI, 8254 Timer/ Counter.	1	PPT
8	Study of Architecture and programming of ICs: 8259 PIC, 8279 Key board display controller	1	PPT
9	Study of Architecture and programming of ICs: 8251 USART	1	PPT
Content beyond syllabus covered (if any): Introduction to 8086 and Intel processors.			

* Session duration: 50 minutes

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Sub. Code / Sub. Name: EE18503 MICROPROCESSORS AND MICROCONTROLLERS
Unit : II

Unit Syllabus : Instruction -format and addressing modes – Assembly language format – Data transfer, data manipulation & control instructions – Programming: Loop structure with counting & Indexing – Look up table - Subroutine instructions - stack

Objective: To address the various programming aspects of microprocessor

Session No *	Topics to be covered	Ref	Teaching Aids
10	Instruction format and Assembly language format of 8085	1	PPT
11	Addressing modes of 8085	1	PPT
12	Introduction to programming in 8085	1	PPT
13	Data transfer and Data manipulation instructions	1	PPT
14	Control instructions	1	PPT
15	Programming: Loop structure with counting & Indexing	1	PPT
16	Look up table and Subroutine instructions of 8085	1	PPT
17	8085 Stack and Stack instructions	1	PPT
18	Programming examples	1	PPT,BB

Content beyond syllabus covered (if any): Programming with 8085 simulator

* Session duration: 50 mins

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Sub Code / Sub Name : EE18503 MICROPROCESSORS AND MICROCONTROLLERS
Unit : III

Unit Syllabus : Hardware Architecture, pin-outs – Functional Building Blocks of Controller – Memory organization –I/O ports and data transfer concepts– Timing Diagram –Interrupts-Timer-Serial communication - Peripheral Interfacing

Objective: To impart in depth knowledge on functional aspects of 8051 microcontroller.

Session No *	Topics to be covered	Ref	Teaching Aids
19	Introduction of 8051 microcontroller	2,4	PPT
20	8051 Hardware Architecture and Pinouts	2,4	PPT
21	Functional Building Blocks of 8051	2,4	PPT
22	Memory organization of 8051	2,4	PPT
23	8051 I/O ports and data transfer concepts	2,4	PPT
24	8051 Timing Diagram	2,4	PPT
25	8051 Interrupt structure	2,4	PPT
26	Architecture and configuration of 8051 Timer	2,4	PPT
27	Serial communication - Peripheral Interfacing	2,4	PPT
Content beyond syllabus covered (if any): Architecture of PIC microcontroller.			

* Session duration: 50 mins

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Sub Code / Sub Name: EE18503 MICROPROCESSORS AND MICROCONTROLLERS
Unit : IV

Unit Syllabus: Instruction sets and addressing modes- Simple programming exercises-Keyboard and display interface –Temperature monitoring and control – Traffic light control – Frequency Measurement – Waveform generation-Closed loop control of servo motor- stepper motor control –Washing Machine Control.

Objective: To develop programming skills of 8051 microcontroller with interfacing and to explore applications of 8051 microcontroller.

Session No *	Topics to be covered	Ref	Teaching Aids
28	Instruction sets and addressing modes of 8051 microcontroller	2,4	PPT
29	Programming in 8051 microcontroller	2,4	PPT
30	Keyboard and display interface	2,4	PPT
31	Temperature monitoring and control	2,4	PPT
32	Traffic light control	2,4	PPT
33	Frequency Measurement	2,4	PPT
34	Waveform generation	2,4	PPT
35	Closed loop control of servo motor	2,4	PPT
36	Stepper motor control	2,4	PPT
37	Washing Machine Control.	2,4	PPT
Content beyond syllabus covered (if any): Introduction to IDE and Keil programming.			

* Session duration: 50 mins

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Sub Code / Sub Name: EE18503 MICROPROCESSORS AND MICROCONTROLLERS

Unit : V

Unit Syllabus: ARM Architecture overview - Processor modes – Data types – Registers – Program status registers – ARM Instruction Set – Thumb Instruction Set – Simple programs.

Objective: To impart in depth knowledge on functional aspects of ARM microcontroller

Session No *	Topics to be covered	Ref	Teaching Aids
38	ARM Architecture overview	3	PPT
39	ARM microcontroller modes of operation	3	PPT
40	ARM Microcontroller Data types, Registers	3	PPT
41	Format of Program status registers	3	PPT
42	ARM Instruction Set,	3	PPT, BB
43	ARM Instruction Set, simple programs	3	PPT, BB
44	Thumb Instruction Set	3	PPT
45	Simple programs.	3	PPT
Content beyond syllabus covered (if any): Applications of ARM microcontroller.			

* Session duration: 50 mins

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TEXT BOOKS:

1. Ramesh S. Gaonkar, 'Microprocessor Architecture Programming and Applications with 8085', Penram Intl. Publishing, 6th Edition, 2013.

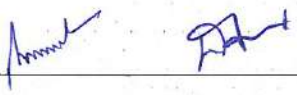
2. Muhammad Ali Mazidi, Janice Gillispie Mazidi, Rolin McKinlay 'The 8051 Microcontroller and Embedded Systems using Assembly and C', Prentice Hall Publications, 2nd Edition, 2008.

3. William Hohl and Christopher Hinds, "ARM Assembly Language Fundamentals and Techniques", CRC Press, second edition, 2015.

REFERENCES:

1. Sencer Yeralan, Helen Emery, 'Programming and Interfacing the 8051 Microcontroller', Addison- Wesley Publications, 1st Edition, 2000.

2. Krishna Kant, 'Microprocessors and Microcontrollers, Architecture, Programming and System Design - 8085, 8086, 8051, 8096', Prentice Hall India Ltd Publications, 1st Edition, 201

	Prepared by	Approved by
Signature		
Name	Dr. T Annamalai/ Dr. D. Amudhavalli	Dr. KR. Santha
Designation	Associate Professor / Assistant Professor	Professor and HOD/EEE
Date	04/07/2023	4.7.2023
Remarks *:		
Remarks *:		

* If the same lesson plan is followed in the subsequent semester/year it should be mentioned and signed by the Faculty and the HOD