

Course Code	Course Name	Course Type	Cd	L	T	P	Marks		
							Sessional	Final Exam	Total
COM-503	Microprocessors	PCC	4	3	1	0	50	100	150

Course Outcomes:

At the end of the course the student will be able to:	
CO1	Appreciate the architectural elements in a Microprocessor and their functionality.
CO2	Analyze, design, implement and test various assembly language programs of moderate complexity.
CO3	Classify the instruction set of 8085 and 8086 microprocessors and distinguish the use of different instructions and apply them in assembly level programming.
CO4	Appreciate the evolution of RISC and ARM processors and the improvements over older microprocessor architectures.
CO5	Appraise the architecture of advanced processor families

Detailed Syllabus**Section-A**

Unit 1: Architecture of 8085: Block diagram, Pin Description of 8085, Instruction Set and Instruction Format, Addressing Modes, Looping, Counting and Indexing. 8085 Interrupts, Interrupt handling in 8085, Enabling, disabling and masking of interrupts. **(8 Hrs)**

Unit 2: Programmable Interface Devices: - Basics of Programmable I/O, General Purpose Programmable Peripheral Devices – 8255A, 8259A, Direct Memory Access Controller – 8237.K9 **(12 Hrs)**

Unit 3: Architecture of 8086: Memory Address space and data organization, segment registers and memory segmentation, generating memory addresses, IO address space, addressing modes, Minimum mode and Maximum mode. **(8 Hrs)**

Section-B

Unit 4: RISC Processors and ARM: The RISC revolution, RISC Architecture and its characteristics, Pipeline bubbles, accessing external memory in RISC systems, Reducing the branch penalties, Branch prediction, ARM processors, ARM registers, ARM instructions, The ARM built-in shift mechanism, ARM branch instructions, sequence control, Data movement and memory reference instructions. **(12 Hrs)**

Unit 5: Advanced Microprocessors: Concept of core processor. Basic features of Advanced Microprocessors: Pentium I3, I5, and I7. **(8 Hrs)**

Text Books

S. No.	Name of the Books	Author	Publisher	Edition (Pub. Yr.)
1	Microprocessor Architecture, Programming and Applications with 8085	Ramesh S. Gaonkar	Penram International Publishing	2 nd (2010)
2	Microprocessor and Interfacing	Douglas V. Hall	McGraw Hill Education	5 th (2017)
3	Advanced Microprocessors and Peripherals	K. M. Bhurchandani and A. K. Ray	McGraw Hill Education	3 rd (2018)