

Learning Outcomes:

The educational objectives of the course are to educate students to attain the following:

- To introduce the operation, programming, and application of microprocessor.
- To teach different external peripheral Interfacing
- To teach low level assembly language Programming

SYLLABUS

Unit No.	Topics	Lectures (Hours)
1	MICROPROCESSOR ARCHITECTURE: Generic 8 bit microprocessor and its architecture, 8085 functional block diagram, Architecture, functions of different sections, Memory mapping, Memory interfacing	7
2	8085 MICROPROCESSOR INSTRUCTION SET: Opcode and operand, Instruction format, addressing modes, instruction set of 8085 CPU, instruction cycle, timing diagram, different machine cycles, fetch and execute operations, estimation of execution time	10
3	PROGRAMMING 8085: Writing assembly language programs, counter and time delays, Subroutine, nested subroutine, Interrupts (Software/Hardware) , Parameter passing techniques, debugging techniques, peripheral and memory mapped I/O	8
4	INTERFACING DEVICES: 8255 programmable peripheral interface, 8253 programmable interval timer, 8155 and 8255 multipurpose programmable devices, 8279 programmable keyboard display interface, 8251 USART, Interfacing data converters ADC and DAC	8
5	APPLICATIONS OF MICROPROCESSORS: Stepper motor control, temperature control, thermocouple linearization, frequency measurement, Measurement of voltage, current, resistance, Measurement of strain, deflection and water level	9

Term Work and Practical shall be based on the above syllabus.

Text Books:

- Ramesh S Gaonkar, “Microprocessor Architecture, Programming and application with 8085”, 4th Edition, Penram International Publishing, New Delhi, 2000

Reference Books:

- B. Ram, “Fundamentals of Microprocessors and Microcomputers, Dhanpat Rai Publications, 2001
- A.K. Ray and K.M.Burchandi, “Intel Microprocessors Architecture Programming and Interfacing”, McGraw Hill International Edition, 2000