



**MANGALORE UNIVERSITY**  
**Department of Physics**  
**MSc Physics**

**PHS 554: ELECTRONICS III**

**(52 Hrs.)**

**Course outcome**

CO1 The candidate will have the knowledge on 8085 microprocessor architecture.

CO2 The candidate will be able program 8085 microprocessor.

CO3 Will be able to write programs with Stack and subroutines.

CO4 Will have knowledge of 16 bit microprocessors.

Unit I Review of binary and hexadecimal number system - negative number representation.

Basic structure of computer systems – Microprocessors, Single chip micro controller system. Introduction to CPU architecture and interfacing the devices. Instruction classification, instruction, data format and storage.

8085 architecture - register organization – Memory, input and out put devices, Example of microcomputer system. 8085 instruction set – classification.

Instruction cycle, machine cycle, timing diagram.

[13 hrs]

Unit II **Programming with 8085.**

8085 instructions – data transfer, arithmetic, logic and branch operations. Writing assembly language programs. Programming techniques with additional instructions. Counters and time delays.

[13 hrs]

Unit III Stack and subroutines, conditional CALL and RETURN instructions.

Interrupts – 8085 interrupts – vectored interrupts, software interrupt instructions.

[13 hrs]

Unit IV **Peripherals: 8155, 8255, 8254, 8259A, DMA 8237.**

Interfacing data converters – ADC and DAC

Introduction to 16 bit microprocessors. 8086/8088

[13 hrs]

**Reference Books:**

1. Gaonkar R S, 'Microprocessor architecture, programming and applications with the 8085', IV Edn. (Penram International, 2000)
2. Hall D V, 'Microprocessors and interfacing, programming and hardware', II Edn. (Tata McGraw Hill, 1992)
3. Mazidi M A & Mazidi J G, 'The 8051 Microcontroller', (Pearson Education Asia, 2001).
4. Ayala Kenneth J, 'The 8051 microcontroller' (Penram International, 1996)
5. Ayala K J, 'The 8086 Microprocessor', (Penram International, 1995)

