

Sem.	Subject code	Course title	No. of hours	Credits	Paper type
VI	17U6PSM4	8085 $\mu$ P Architecture and programming	2	2	SBE Major (Skill Based Elective)

**Objectives:**

(i). The students should be introduced to architectural details of 8085 microprocessor ( $\mu$ P). (ii)  
To make the students understand the topics on instruction set, looping counting and advanced instructions, counters and time delays and stack and sub-routine etc.

**Learning outcome:**

- (i) The students will have a through vision of hardware part of 8085 microprocessor ( $\mu$ P) (ii)  
They will be able to write assemble language programs with the instruction available in instruction set (software part) by his own for different practical applications.

**Unit I: 8085  $\mu$ P architecture**

Microprocessor initiated operations and bus organization–pins and signals–Architecture

**Unit II: Instruction set**

8085 Instruction–Data transfer instruction–Addressing modes–Arithmetic and Logic instruction – Branch instruction.

**Unit III: Looping, counting and advanced instructions**

Looping counting and Indexing–16 bit arithmetic instruction–Arithmetic operations related to memory–Logic operations – Simple programs

**Unit IV: Counter and time delays**

Counters and time delays–Time delay using one register–Loop within a loop technique–Counter design with time delay– Simple programs

**Unit V: Stack and subroutine**

Stack–Subroutine-traffic signal control program– Simple programs

**Text book(s):**

1. Microprocessor Architecture, Programming, and Applications with the 8085, Ramesh S Gaonkar, VI th Edition, Penram International Publishing (India) Private Limited, (2016)

**Unit I:** Sections 3.1, 3.1.1, 3.1.2, 4.1, 4.1.1-4.1.3, 4.1.5

**Unit: II:** Sections 6.1, 6.1.1, 6.2, 6.2.1, 6.2.2, 6.3, 6.3.1-6.3.3, 6.4, 6.4.1-6.4.4

**Unit III:** Sections 7.1, 7.2, 7.2.1-7.2.4, 7.2.6, 7.3, 7.3.1, 7.4, 7.4.1, 7.5, 7.5.1, 7.5.3

**Unit IV:** Sections 8.1, 8.1.1, 8.1.3, 8.1.5

**Unit V:** Sections 9.1 (Pages 296-302), 9.2, 9.2.1(Upto page 314)

**Book for reference:**

1. Fundamentals of microprocessor and microcomputer, B. Ram, Danpatrai publications, New Delhi, (2007).