

**III/IV B. TECH. FIRST SEMESTER
MICROPROCESSOR AND INTERFACING (Required)**

Course Code : CS 5T2**Credits: 3****Lecture: 3 periods/ wee k****Internal assessment: 30 Marks****Tutorial: 1period/week****Semester end examination: 70 Marks**

Prerequisites: Computer Organization and Logic Design

Course Objectives:

At the end of the course, students are expected to have:

1. Ability to design and conduct experiments related to microprocessor based
2. system design and to analyze their outcomes.
3. learn how the hardware and software components of a microprocessor-based system work together to implement system-level features;
4. learn both hardware and software aspects of integrating digital devices (such as memory and I/O interfaces) into microprocessor-based systems;
5. get practical experience in applied digital logic design and assembly-language programming; and
6. be exposed to the tools and techniques used by practicing engineers to design, implement, and debug microprocessor-based systems (during the Lab).

Course Outcomes:

At the end of this course student will:

CO1) Identify the basic elements and functions of microprocessor

CO2) Describe the architecture of microprocessor and its peripheral devices

CO3) Demonstrate fundamental understanding on the operation between the microprocessor and its interfacing devices

CO4) Understand the evolution of processor architectures

Syllabus:**UNIT 1**

Introduction to Microprocessors, Internal Architecture of 8086, Addressing modes of 8086.

UNIT 2

8086 Assembly Language Programs: 8086 instruction set, Assembler directive, program development method, Writing simple 8086 programs for use with an assembler.

UNIT 3

8086 Interrupts: 8086 Interrupts and Interrupt responses, hardware interrupt application. Interfacing: Digital interfacing, Programming parallel port and handshake I/O, Interfacing a Microprocessor to keyboards & displays

UNIT 4

Introduction to 80286, 80386, 80486 microprocessor, Single chip microcontrollers.

UNIT 5

Introduction to Pentium Processor architecture, Introduction and Evolution of Multicore processors, dual Core and Core Duo Basic characteristics, Architecture and comparison with other CPU's.

Learning Resource**Text Books**

1. Micro Computer System 8086/8088 Family Architecture, Programming and Design - By Liu and GA Gibson, PHI, 2nd Ed.

References

1. Microprocessor Architecture, Programming, and Applications With the 8085 , Ramesh S Gaonkar,prentice hall 5e.
2. The X86 Microprocessors, architecture, Programming and Interfacing(8086 to Pentium), Lyla B Das, Pearson.
3. A.P. Mathur “, Introduction Microprocessor–IIIrd Edition”, (TMH)
4. Tabak. D,” Advanced Microprocessor-2nd edition,” (TMH)
5. The Intel Microprocessors by Barry B.Brey
6. The 8086 Microprocessor: Programming & Interfacing the PC, Ayala: Cengage