

# GUJARAT TECHNOLOGICAL UNIVERSITY

## B.E. SEMESTER : VIII

### ELECTRONICS ENGINEERING

Subject Name: **ADVANCED MICROPROCESSOR**

Sr. No.	Course Contents
1.	<b>Microprocessor and Its Architecture:</b> Internal 8086/8088 microprocessor architecture, Real mode memory addressing, Addressing modes.
2.	<b>Programming The Microprocessor:</b> Data movement instructions, Arithmetic and logic instructions, Program control instructions, string instruction, assembly language programming, assembler directives, program development tools.
3.	<b>8086 Hardware specifications:</b> 8086 pin-outs and pin functions, Clock generator, Bus buffering and latching, Bus timings, Ready and wait stat, minimum/maximum mode operation, Memory interfacing with 8086, address decoding, Introduction to basic I/O interface, I/O port address decoding.
4.	<b>Basic interrupt processing:</b> The purpose of interrupts, Interrupts, Interrupt instructions, the operation of a real mode interrupt, Interrupt flag bits, storing an interrupt vector in the vector table. Hardware interrupts: INTR and INTA
5.	<b>80186, 80188 and 80286 microprocessors:</b> 80186/80188 basic block diagram and basic features, Introduction to 80286 hardware features, additional instructions.
6.	<b>The 80386 and 80486 microprocessor:</b> Introduction to 80386 microprocessor, Special 80386 registers, Memory Management, Moving to protected mode, Virtual 8086 mode, Memory paging mechanism, 80486 microprocessor architecture and memory system.
7.	<b>Pentium, Pentium Pro, Pentium II, Pentium III, Pentium IV and Core2 microprocessors:</b> Introduction to Pentium microprocessor, Special Pentium registers, Basic and additional features of Pentium Pro, Pentium II, Pentium III, Pentium IV and Core2 microprocessors.

#### Reference Book:

1. The Intel Microprocessors: 8086/8088, 80186/80188, 80286, 80386, 80486, Pentium, Pentium Pro Processor, Pentium II, Pentium III, Pentium 4, and Core2 with 64-bit Extensions, 8<sup>th</sup> Edition , Barry B. Brey , Pearson Education
2. Microprocessors and Interfacing By Douglas V Hall Revised Second Edition, McGraw Hill Publication
3. The 8088 and 8086 Microprocessors, Programming, Interfacing, Software, Hardware and Applications, Fourth Edition, By Walter A Triebel and Avtar Singh, Pearson Education.

#### Practical/Term-work:

Practical/Term-work will be based on the topics covered in the syllabus, Programming using Dos and Bios Function Calls and applications.