C. U. SHAH UNIVERSITY – WADHWAN CITY

FACULTY OF TECHNOLOGY AND ENGINEERING
DEPARTMENT OF INFORMATION TECHNOLOGY
B. TECH. SEMESTER: - V

Subject Name: <u>Advanced Micro-Processors (AMP)</u>
Subject Code: <u>4TE05AMP1</u>

Teaching & Evaluation Scheme: -

Subject Code	Subject Name	Teaching Scheme (Hours)				Credits	Evaluation Scheme							Total
							Theory				Practical (Marks)			
							Sessional Exam		University Exam		Internal		University	
		Th	Tu	Pr	Total		Marks	Hours	Marks	Hours	Pr/Viva	TW	Pr	
5TE05AMP1	Advanced Micro - Processors (AMP)	3	0	2	5	4	30	1.5	70	3.0	-	20	30	150

Objectives:

The objective of the course is to introduce students to the architecture, instruction set of typical 8-bit, 16 Bit, 32-Bit microprocessor. It also deals with Assembly Language Programming using a macro-assembler. The study of Input-output techniques and important programmable support chips used in microprocessor-based systems are discussed in detail.

Prerequisites:

- Knowledge of digital logic circuit and computer architecture.

Course outline:

Sr. No.	Course Contents	Total Hrs.
1	Introduction to Microprocessor, Microprocessor systems with bus organization, Microprocessor Architecture & Operations, Memory, I/O Device, Memory and I/O Operations	06
2	8085 Microprocessor Architecture, Address, Data And Control Buses, Pin Functions, Demultiplexing of Buses, Generation of Control Signals, Instruction Cycle, Machine Cycles, T-States	09
3	Introduction to 16-bit microprocessors, 8086 architecture, Segments, Flags, 8086 pin functions, Minimum and maximum mode operations, Memory banks.	08
4	Assembly Language Programming Basics, Classification of Instructions,	08

	Addressing Modes, Instruction Set, Instruction and Data Formats, Decision Making, Looping, Stack & Subroutines, Interrupts	
5	80286/386/486 register set, Data types, Overview of instruction set, Memory segmentation with descriptor tables including LDT and GDT, Privilege levels, Changing privilege levels, Paging including address translation, Page level protection, MMU cache, Virtual memory, Paging and segmentation	**09**
6	Technical overview (only features) of the Pentium architecture including Pentium-Pro, MMX, Hyper Threading, Core-2-duo	**05**
	Total	**45**

Learning Outcomes:

At the end of this module the student will be well familiar with:
• Detailed operation of a microprocessor.
• Designing Concepts
• Assembly language programming.

Books Recommended:

1. Microprocessor architecture Programming & its appl, 5th Edition, **R.S. Gaonkar**,PRI(2010).
2. Microprocessor X86 programming ,K.R. Venugopal ,BPB (2009).
3. Microcomputer System:The 8086/8088 family Archi., program.&design 2nd Edition,**Liu & Gibson**, PHI(1986).
4. Microcomputers & microprocessor ,3rd Edition ,**John Uffenback** ,PHI(2000).
5. Microprocessor & interfacing ,2nd Edition,**Douglas V. HALL**, TMH(2006).
6. Advanced Microprocessor Interfacing & Programming ,**K. Wandra & H. Wandra**.
7. Advanced microprocessor & Interfacing ,4th Edition,**B. Ram** ,TMH(1993).
8. Intel Micro processor ,4th Edition,**Brey** ,PHI(1997).
9. Advance Microprocessors & Peripherals ,2nd Edition,**A.K.Ray& K.M.Bhurchadi,** TMH (2006).