C. U. SHAH UNIVERSITY

FACULTY OF: Computer Science
DEPARTMENT OF: M.Sc(CA & IT)
SEMESTER : III
CODE: 4CS03COA1
NAME: Computer Organization and Architecture

Sr. No	Subject Code	Subject Name	Teaching Hours/Week				Credits	Evaluation Scheme/Semester						Total Marks
1	4CS03COA1	Computer Organization and Architecture	TH	TU	PR	TOTAL		Theory			Practical			
								Sessional Exam		University Exam	Sessional Exam		University Exam	
								Marks	Hrs	Marks	Marks	Hrs	Total Marks	
			4	0	0	4	4	30	1.5	70	50	1.5	50	150

Objectives:

- To impart the knowledge of computer architecture by following a bottom-up approach: by starting from basic hardware components (transistors and logic gates) to construct more sophisticated circuits(adders, decoders, flip-flops, registers, . . .), which are then combined into memory units, processor units as well as a whole computer system.To understand how a modern CPU works

Pre-requisites: Basic knowledge of Computer

Course Outlines

Sr.No	Course Contents	No of Hours
1	**Introduction** • Computer • Hardware, Block Diagram Of Digital Computer • Central Processing Unit(CPU) • Memory(MU) • Arithmetic and Logical Unit(ALU) • Control Unit(CU)	6
2	**Memory Unit** • Definition, Types Of Memory • Types of RAM and Architecture • Types of ROM and Architecture • Cache Memory • Auxiliary Memory • Virtual Memory	7

3	**Input /Output Architecture**	7
4	• CPU Architecture • CPU/IOP Communication • Interrupts, Types of Interrupts • Input/ Output Devices (1) Printer (2) Scanner (3) Joystick (4) Mouse (5) Keyboard (6) Monitor(Video Display Unit) (7) Multi Media Speaker	12
5	**Arithmetic and Logical Unit** • Definition • Introduction • Architecture of Arithmetic and logical unit	10
6	**Control Unit and BUS Organization** • Definition, Introduction of Control Unit • Architecture of control unit • Definition, BUS, Types of BUS • Architecture of Common BUS Organization Architecture	08

Learning Outcomes:

• At the end of the course the learners will aware of gates, CPU registers, I/O organization and Memory organization.

Books Recommended:

1, "*Computer System Architecture"*,Morris Mano, PHI Publication(3rd Edition).
2, "*Digital Logic and Computer Design*",Morris Mano, PHI Publication.
3, *"Modern Digital Electronics"*,R.P.Jain, TMH Publication.
4, "Structure Computer Organization", A. S. Tannanbaum, PHI Publication (4th Edition)
5, "Computer Architecture and Organization", John P. Huyes, McGraw-Hill (3rd Edition)