

CE505: COMPUTER ARCHITECTURE

Teaching Scheme			Examination Scheme							
Lect	Prac	Total	Theory				Practical			Grand Total
			Int Ass	Sem End		Total	Int Ass	Sem End	Total	
				Marks	Hrs					
3	2	5	30	70	3	100	25	25	50	150

Basic Computer Organization and Design:

Instruction Codes, Computer Registers, Computer Instructions, Timing and control, Instruction cycle.

Micro programmed Control:

Control Memory, Address sequencing, Micro program example, Design of control unit.

Central Processing Unit:

Introduction, General register organization, Stack organization, Instruction formats, Addressing modes, Data Transfer and manipulation, Program control, Reduced Instruction Set Computer.

Pipeline And Vector Processing:

Parallel processing, Pipelining, Arithmetic pipeline, Instruction pipeline, RISC pipeline, Vector processing, Array processors.

Input-Output Organization:

Peripheral devices, Input-Output interface, Modes of Transfer, Priority interrupt, Direct memory access, Input-Output Processor, Serial communication.

Memory Organization:

Memory hierarchy, Main memory, Auxiliary memory, Associative memory, Cache memory, Memory management hardware.

Multiprocessors:

Characteristics of multiprocessors, Interconnection structures, Interprocessor arbitration, Interprocessor communication and synchronization, Cache coherence.

Reference Books:

1. Computer System Architecture : Third edition
By M. Morris Mano
2. Computer Organization And Design
By P. Pal Chaudhury
3. Computer Organization
By Carl Hamacher