

EC 506 : COMPUTER ORGANISATION

Teaching Scheme			Examination Scheme							
Lect.	Pract	Total	Theory				Practical			Grand Total
			Int. Assess.	Sem Marks	End Hrs	Total	Int. Assess.	Sem End	Total	
3	0	3	30	70	3	100	00	00	00	100

1. Basic Structure of Computers:

Computer types, Functional Units, Basic Operational Concepts, Bus structure, Software, Performance, Multiprocessor & Multicomputers, Historical perspective

2. Number System:

Floating points numbers and operations

3. The Memory System:

Some basic concepts, Read only memory, Speed, size and cost, Cache memories, Performance considerations, Virtual memories, Memory management requirements, Secondary storage, memory organization techniques

4. Basic Processing Unit:

Some fundamental concepts, Execution of a complete instruction, Multiple-Bus Organization, Hardwired Control, Microprogrammed Control

5. Pipelining:

Basic concepts, Data Hazards, Instruction Hazards, Influence on instruction sets, Data path and control considerations, Superscalar operation, Performance considerations

6. Input/Output Organization:

Accessing I/O Devices, Interrupts, Buses, Interface Circuits, Standard I/O Interfaces

7. Reduced Instruction Set Computers:

Instruction Execution Characteristics, The use of a Large register File, Compiler-Based Register Optimization, Reduced Instruction Set Computers, RISC Pipelining, MIPS R4000, SPARC, RISC versus CISC Controversy

8. IO Subsystem Architecture:

IO Subsystem Performance Measure, Design of IO Subsystem, Architecture of IO Bus, SCSI Bus, ISA Bus Architecture, PCI Bus, Microchannel Architecture

Reference Books:

1. Computer Organization & Architecture (Sixth Edition) By William Stallings (PHI)
2. Computer Organization (Fifth Edition) By Carl Hamacher, Zvonko Vranesic & Safwat Zaky (TMH).
3. Computer Organization and Design (Second Edition) By P. Pal Chaudhury (PHI)