



Sub Committee for Curriculum Development

Course Name: Computer Organization and Microprocessor

(UG/PG): UG

Number of Credits: 4

Level: 2

Learning Objective(s):

- To understand the concept of computer Architecture
- Organize a computer based on the defined architecture.
- Understand basics Memory segmentation and pipelining

Pedagogy

- Class Room
- Case Studies
- Role Plays
- Case based

Pre-learning:

- Understanding of concept of Digital Circuit design.
- Introductory level of knowledge of any CPU Architecture(Von Neumann/8085)

Course Outline:

S.No.	Topic	Hours
1	Recap	2
	Brief Recall of Functional Units of a Computer System, Operational Concepts, Bus Structures, Performance Measurements, Introduction to Computer Architecture and Organization	
2	CPU organization	12
	Introduction, General registers organization, Stack organization. Instruction formats, Addressing modes. Data transfer, data manipulations and Program control Instructions. Control unit: Hardwired control design and Micro programmed Control	
3	Memory Organization Characteristics of memory systems, Memory hierarchy, Auxiliary Memory, Main Memory design, Cache Organization, Cache Mapping, Concept of Virtual Memory and Memory Management	10
4	I/O organization Peripheral devices, Input output Interface, Asynchronous and Synchronous data transfer. Modes of data transfer: Interrupt driven, direct memory access, Programmed I/O, IOP, Serial Communication	10

	Memory mapped I/O and peripheral I/O. Interfacing of keyboards and displays. Memory interfacing	
5	Case Study Intel 8086-Hardware details, Memory segmentation, addressing modes, instruction set,	12
6	Intel 8086 , Interrupt structure, Assembly programming (Either on TASM/MASM) Simple programmes, arithmetic, array based, interrupt based	14
	Total	60

Books Recommended

- Computer System Architecture by Morris Mano.
- Computer Organization and Architecture by William Stallings
- Computer organization by Zaky
- Modern Computer Architecture by Rafiquzzaman & Chandray
- Intel Manuals for Interfacing Chips
- Computer System Architecture and Organization by Hays
- Hall, Microprocessors, Interfacing and Programming and Applications, TMH
-

Suggested Evaluation Methods

- Assignments
- Presentations
- Design Examples
- Examination
- Quizzes

Parallel/Similar courses the existing curriculum:

S.No.	Name of the course	Institute where it was offered

Name of Member	Dr. Rajashree Jain		
Designation	Assoc. Professor		
Org. / Inst.	SICSR		
Signature			

Name of the Expert:

Signature:

Date: