

Devi Ahilya University, Indore, India Institute of Engineering & Technology				MSc – I Year (Applied Mathematics) with Specialization in Computing & Informatics Semester- III			
Subject Code & Name	Instructions Hours per Week			Credits			
AM3GE1: OS/Microprocessor	L	T	P	L	T	P	Total
	3	1	-	3	1	-	4
Duration of Theory Paper: 3 Hours							

Objective: Aim of this course is to aware students about the hardware of computers, operating system management and to provide the fundamentals of microprocessor 8085.

Prerequisite(s): Nil

COURSE OF CONTENTS

UNIT-I

Introduction to Operating System

Types of OS: Batch system, Multiprogramming, Time Sharing, Distributed & real time OS. Computer Structures and OS: System Architecture-I/O, Storage, Processor, System Components- OS Service, System Calls, Programs; System Design, Implementation and Generation, Case study.

UNIT-II

Process and Storage Management

Cooperation, Interprocess Communication. CPU Scheduling: Basic idea and Algorithms; Process Synchronization. Swapping, Segmentation, Paging and Contiguous Allocation. Virtual Memory: Demand Paging, Frame Allocation and Thrashing Demand Segmentation. File System: Access method, Directory Structure, File-System Management. Case study.

UNIT-III

I/O Management

I/O Interfacing, I/O Requests and Interrupts. Disk Management: Disk structure & Scheduling, Swapping and Stability Issues. Disk Reliability. Case Study.

UNIT-IV

Introduction of 8085 Microprocessor and Addressing Modes:

Architecture of 8085 processor. Register Architecture: Accumulator, Temporally Register and Flag Register. Program Counter, Stack pointer and Instruction register. Direct addressing mode and Register direct Addressing Mode. Register Indirect Addressing Mode, Immediate Addressing Mode and Implicit or Implied Addressing Mode.

UNIT-V

Processors and Memory Hierarchy: CISC & RISC Architectures – CISC Family – RISC , Scalar processors – Super Scalar Processors and their features – Very Long Instruction word Architecture vector & symbolic processors, Memory hierarchy.

BOOKS RECOMMENDED:

- [1] Silber Schatz and P.B. Galvin, Operating System Concepts, Addison Wesley, 1998.
- [2] P. K. Ghosh, P. R. Sridhar, 0000 to 8085, Introduction to Microprocessor PHI Learning Pvt. Ltd., 2009.
- [3] A.S. Godbole, Operating System, Tata McGraw Hill, 2005.
- [4] Ramesh S. Gaonkar, Microprocessor Architecture, Programming and Applications with 8085, Prentice Hall PTR, 2002.
- [5] W. Stallings, Operating systems, 4th Edition, Pearson Education, 2003.
- [6] Y C Liu and G A Gibson, Microcomputer Systems, PHI, 2nd, Ed., 2003.