

LESSON PLAN

Theory 1-OPERATING SYSTEM

COMMON TO (CSE/IT)

A. Rationale:

The course provides the students with an understanding of Human computer interface existing in computer system and the basic concepts of Operating System and its working. The students will gather knowledge about efficient utilization of the resources to obtain optimization processing.

B. Objective:

After completion of this course the student will be able to:

- Understand the concept and function of operating system.
- Understand notion of a process and all computation.
- To introduce the critical – section problem whose solutions can be used to ensure the consistency of the shared data.
- Understand the concept of deadlock, its avoidance prevention and recovery.
- To provide a detailed description of various memory management techniques.
- To describe the benefits of a virtual memory system.
- To explain the function of file system.
- To describe the details of implementing local file systems and directory structures.
- Understand the brief idea of Systems Programming.

C. DETAIL CONTENTS:

Sl. No.	Chapters	Periods
1	INTRODUCTION 1.1 Objectives and Explain functions of operating system. 1.2 Evolution of Operating system 1.3 Structure of operating system.	3
2	PROCESS MANAGEMENT 2.1 Process concept, process control, interacting processes, inter process messages. 2.2 Implementation issues of Processes. 2.3 Process scheduling, job scheduling. 2.4 Process synchronization, semaphore. 2.5 Principle of concurrency, types of scheduling.	10

3	MEMORY MANAGEMENT 3.1 Memory allocation Techniques 3.1.1 Contiguous memory allocation 3.1.2 Non contiguous memory allocation 3.2 Swapping 3.3 Paging, Segmentation, virtual memory using paging, 3.4 Demand paging, page fault handling.	10
4	DEVICE MANAGEMENT 4.1 Techniques for Device Management 4.1.1 Dedicated, 4.1.2 shared and 4.1.3 virtual. 4.2 Device allocation considerations I/O traffic control & I/O Schedule, I/O Device handlers. 4.3 SPOOLING.	10
5	DEAD LOCKS 5.1 Concept of deadlock. 5.2 System Model 5.3 Dead Lock Detection 5.4 Resources allocation Graph 5.5 Methods of Deadlock handling 5.6 Recovery & Prevention, Explain Bankers Algorithm & Safety Algorithm	10
6	FILE MANAGEMENT 6.1 File organization, Directory & file structure, sharing of files 6.2 File access methods, file systems, reliability 6.3 Allocation of disk space 6.4 File protection, secondary storage management.	10
7	SYSTEM PROGRAMMING 7.1 Concept of system programming and show difference from Application Compiler: 7.2 Compiler, functions of compiler. 7.3 Compare compiler and interpreter. 7.4 Seven phases of compiler, brief description of each phase.	7

Coverage of Syllabus upto Internal Exams (I.A.) Chapter 1,2,3,4

Books recommended:-

Sl. No	Name of Authors	Title of the Book	Name of the publisher
1	Donovan	Operating System	TMH

2	Silverschz & Galvin,	Operating System	PHI
3	Er. Rajiv Chopra	Operating System	S.CHAND

D. LESSON PLAN

Sl. No.	Topic	Expected Date of Completion	Actual Date of Completion	Teaching Learning Process	Remarks Shortfall if any (Y/N)
1. INTRODUCTION					
1.	1.1 Objectives and Explain functions of operating system.	15/04/21	15/04/21	Video Lecture & PPT	No
2.	1.2 Evolution of Operating system	19/04/21	19/04/21	Video Lecture & PPT	No
3.	1.3 Structure of operating system.	20/04/21	20/04/21	Video Lecture & PPT	No
LMS	ASSIGNMENT-1			Lecture Notes	
2. PROCESS MANAGEMENT					
4.	2.1 Process concept, process control, interacting processes, inter process messages.	22/04/21, 26/04/21	22/04/21, 26/04/21	Video Lecture & PPT	No
5.	2.2 Implementation issues of Processes.	27/04/21, 28/04/21	27/04/21, 28/04/21	Video Lecture & PPT	No
6.	2.3 Process scheduling, job scheduling.	29/04/21	29/04/21	Video Lecture & PPT	No
7.	2.4 Process synchronization, semaphore.	03/05/21, 05/05/21	03/05/21, 05/05/21	Video Lecture & PPT	No
8.	2.5 Principle of concurrency, types of scheduling.	06/05/21, 10/05/21	06/05/21, 10/05/21	Video Lecture & PPT	No
LMS	ASSIGNMENT-2			Lecture Notes	
3. MEMORY MANAGEMENT					
9.	3.1 Memory allocation Techniques 3.1.1 Contiguous memory allocation	11/05/21, 13/05/21	11/05/21, 13/05/21	Video Lecture & PPT	No
10.	3.1.2 Non-contiguous memory allocation 3.2 Swapping	17/05/21 18/05/21	17/05/21 18/05/21	Video Lecture & PPT	No

11.	3.3 Paging, Segmentation,	19/05/21 20/05/21	19/05/21 20/05/21	Video Lecture & PPT	No
12.	3.3 virtual memory using paging (conti...) 3.4 Demand paging, page fault handling	24/05/21 31/05/21	24/05/21 31/05/21	Video Lecture & PPT	No
LMS	ASSIGNMENT-3			Lecture Notes	
4. DEVICE MANAGEMENT					
13.	4.1 Techniques for Device Management 4.1.1 Dedicated, 4.1.2 shared and 4.1.3 virtual.	01/06/21 02/06/21	01/06/21 02/06/21	Video Lecture & PPT	No
14.	4.2 Device allocation considerations I/O traffic control & I/O Schedule, I/O Device handlers.	03/06/21 05/06/21	03/06/21 05/06/21	Video Lecture & PPT	No
15.	4.3 SPOOLING.	07/06/21 08/06/21	07/06/21 08/06/21	Video Lecture & PPT	No
LMS	ASSIGNMENT-4			Lecture Notes	
5. DEAD LOCKS					
16.	5.1 Concept of deadlock. 5.2 System Model	09/06/21	09/06/01	Video Lecture & PPT	No
17.	5.3 Dead Lock Detection 5.4 Resources allocation Graph	11/06/21	11/06/21	Video Lecture & PPT	No
18.	5.5 Methods of Deadlock handling	17/06/21	17/06/21	Video Lecture & PPT	No
19.	5.6 Recovery & Prevention, Explain Bankers Algorithm & Safety Algorithm	18/06/21	18/06/21	Video Lecture & PPT	No
LMS	ASSIGNMENT-5			Lecture Notes	
6. FILE MANAGEMENT					
20.	6.1 File organization, Directory & file structure, sharing of files	21/06/21	21/06/21	Video Lecture & PPT	No
21.	6.2 File access methods, file systems, reliability	22/06/21	22/06/21	Video Lecture & PPT	No
22.	6.3 Allocation of disk space	24/06/21	24/06/21	Video Lecture & PPT	No
23.	6.4 File protection, secondary storage management.	25/06/21	25/06/21	Video Lecture & PPT	No

LMS	ASSIGNMENT-6			Lecture Notes	
7. SYSTEM PROGRAMMING					
24.	7.1 Concept of system programming and show difference from Application Compiler:	28/06/21	28/06/21	Video Lecture & PPT	No
25.	7.2 Compiler , functions of compiler.	29/06/21	29/06/21	Video Lecture & PPT	No
26.	7.3 Compare compiler and interpreter.	01/07/21	01/07/21	Video Lecture & PPT	No
27.	7.4 Seven phases of compiler, brief description of each phase.	02/07/21	02/07/21	Video Lecture & PPT	No
LMS	ASSIGNMENT-7			Lecture Notes	