



SANATAN DHARMA COLLEGE, AMBALA CANTT

College with Potential for Excellence, UGC, New Delhi

NAAC Accredited Grade "A+" with CGPA 3.51 in 3rd cycle

ISO 9001:2015 & ISO 14001:2015 Certified

Department of Computer Science

Lesson Plan (Session 2022-2023)

Class: BVSD

Course Code: BVSD-21

Nomenclature: Operating Systems II

Sem: II

Duration: 13 Weeks

Dates: (Feb 2023-April 2023)

SYLLABUS

BVSD-21 Operating Systems II

Maximum Marks: 100

External: 80

Minimum Pass Marks: 35

Internal: 20

Time: 3 hours

Note: Examiner will be required to set NINE questions in all. Question Number 1 will consist of objective type/short-answer type questions covering the entire syllabus. In addition to the compulsory question there will be four units i.e. Unit-I to Unit-IV. Examiner will set two questions from each Unit of the syllabus.

Student will be required to attempt FIVE questions in all. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions selecting one question from each Unit. All questions will carry equal marks.

Unit I

File Systems: Functions of the System, File Access and Allocation Methods, Directory Systems: Structured Organizations, Directory and File Protection Mechanisms.

Unit II

Concurrent Processes: Introduction, Parallel Processing, Control Structure for Indicating Parallelism, Mutual Exclusion, Critical Section Problem, Semaphores, Classical Process Co-ordination Problems and Their Solutions, Inter-process Communications.

Unit III

Deadlocks: Introduction, Deadlock Characterization, Deadlock Prevention and Avoidance, Deadlock Detection and Recovery, Practical Considerations.

Unit IV

Case Study: UNIX System: Introduction, History, The Shell, The Kernel, File System, Process Management, Memory Management, I/O System.

Case Study: DOS: Overview of MS-DOS, Fundamental Concepts, MS-DOS System Calls, Implementation of MS-DOS.

TEXT BOOKS:

- Deitel Harvey M., An Introduction to Operating Systems, Addison Wesley, 1990
- Silbershatz Abraham, Galvin Peter B., Operating System Concepts, John Wiley & Sons, 2014

REFERENCE BOOKS:

- Dhamdhare D.M., System Programming & Operating Systems, Tata Mc-Graw Hill, 1999
- Tanenbaum Andrew S., Modern Operating System, Pearson Education, 2014

Course Title	Operating Systems-II
CO No.	Course Outcomes
CO-1	Recall the different structures of operating systems.
CO-2	Discuss theory and implementation of processes, resource control, physical and virtual memory, scheduling, I/O and files
CO-3	Calculate waiting time, response time, turnaround time and disk seek time in disk scheduling
CO-4	Compare the memory allocation methods and differentiate the page replacement algorithms
CO-5	Conclude with a detailed understanding of Linux kernel
CO-6	Gain the necessary knowledge for the employability in teaching profession.

S.No	Instructional Technique	Assessment Methods (AM)
1	Chalk & Talk	Assignments
2	ICT tools	Quiz
3	Group discussions	Group Discussions
4	Industrial visit	Oral Tests
5	Case studies	Sessional
6	Small Projects	Presentations
7	Workshop	Seminar
8	Spoken Tutorials	University Exams
9	Flipped Class	
10.	E-Resources	

Detailed Lesson Plan

Week	Date	B(Voc) (2nd Sem) (BVSD-21)	Instructional technique	Assessment Method
1	01.02.2023	File Systems: Functions of the System	1	1
	02.02.2023	-		
	03.02.2023	-		
	04.02.2023	-		
	05.02.2023	Sunday		
2	06.02.2023	File Access Methods	1	1,2,3,4
	07.02.2023	File Allocation Methods	2-PPT/Projector	1,2,3,4
	08.02.2023	Directory Systems	2-PPT/Projector	1,2,3,4
	09.02.2023	-		
	10.02.2023	-		
	11.02.2023	-		
	12.02.2023	Sunday		
3	13.02.2023	Structured Organizations	2-PPT/Projector	1,2,3,4
	14.02.2023	Directory and File Protection Mechanisms	2-PPT/Projector	
	15.02.2023	Revision	2-PPT/Projector	1,2,3,4
	16.02.2023	-		
	17.02.2023	-		
	18.02.2023	Holiday		
	19.02.2023	Sunday		
4	20.02.2023	Concurrent Processes: Introduction		
	21.02.2023	Parallel Processing	1	1,2,3,4,6
	22.02.2023	Control Structure for Indicating Parallelism	8,10	1,2,3,4
	23.02.2023	-		
	24.02.2023	-	8,10	1,2
	25.02.2023	-		
	26.02.2023	Sunday		
5	27.02.2023	Class Test		
	28.02.2023	Mutual Exclusion, Critical Section Problem	8,10	4
	01.03.2023	Semaphores	2-(PPT/Projector)	1,2,3,4
	02.03.2023	-		

	03.03.2023	-		
	04.03.2023	-		
	05.03.2023	Sunday		
6	06.03.2023	Holi Holidays	--	
	07.03.2023			
	08.03.2023			
	09.03.2023			
	10.03.2023			
	11.03.2023			
	12.03.2023	Sunday		
7	13.03.2023	Assignment-1		1
	14.03.2023	Classical Process Co-ordination Problems and Their Solutions	6	1,2,3,4
	15.03.2023	Inter-process Communications	2-(PPT/Projector)	1,2,3,4
	16.03.2023	-		
	17.03.2023	-		
	18.03.2023	-		
	19.03.2023	Sunday		
8	20.03.2023	Deadlocks: Introduction	2-(PPT/Projector)	
	21.03.2023	Deadlock Characterization, Deadlock Prevention	6	1,2,3,4
	22.03.2023	Deadlock Avoidance		
	23.03.2023	Holiday		
	24.03.2023	-		
	25.03.2023	-		--
	26.03.2023	Sunday		
9	27.03.2023	Deadlock Detection	2-PPT/Projector	
	28.03.2023	Deadlock Recovery	2-PPT/Projector	1,2,3,4
	29.03.2023	Revision	1	1,2,3,4
	30.03.2023	Holiday		
	31.03.2023	-		
	01.04.2023	-		
10	02.04.2023	Sunday		
	03.04.2023	Sessional		5
	04.04.2023	Holiday		
	05.04.2023	Case Study: UNIX System: Introduction	2-PPT/Projector	1,2,3,4
	06.04.2023	-		

	07.04.2023	-		
	08.04.2023	-		
11	09.04.2023	Sunday		
	10.04.2023	History, The Shell, The Kernel,	2-(PPT/Projector)	1,2,3,4,6
	11.04.2023	File System	---	
	12.04.2023	File System(contd.)		
	13.04.2023	-	8,10,2	1,2
	14.04.2023	Holiday		
	15.04.2023	-		
	16.04.2023	Sunday		
	12	17.04.2023	Assignment-2	
18.04.2023		Process Management, Memory Management	1	1,2
19.04.2023		I/O System.	2-(PPT/Projector)	1,2,3,4
20.04.2023		-		
21.04.2023		-		
22.04.2023		-		
23.04.2023		Sunday		
13	24.04.2023	Case Study: DOS: Overview of MS-DOS	1	1,2,3,4
	25.04.2023	Fundamental Concepts, MS-DOS System Calls	2-(PPT/Projector)	1,2,3,4
	26.04.2023	Implementation of MS-DOS.	2-(PPT/Projector)	1,2,3,4
	27.04.2023	-		
	28.04.2023	-		
	29.04.2023	-		
	30.04.2023	Sunday		

	Teacher Incharge	Head of the Department
Name	Harjinder Kaur	Dr. Girdhar Gopal
Sign with Date		