Department of Computer Engineering & Applications
GLA University, Mathura
Teaching cum Learning Delivery Plan

Course: B.Tech CSE/Specialization(AIML/CCV/DA/CSF/IIOT) **Year/Sem: II/III**

Subject Name & Code: Operating Systems (BCSC0004)

Name of Faculty: **Total No of Lectures:** 40

Lect	Module	Topic	Pre Reading Material	Sub Topic	Instructor	Methodology
1	Module-I	Introduction	https://youtu.be/k51934LHz3k https://youtu.be/YwqexcfbucE https://youtu.be/ENYFsXTaV2Y	Operating System, Operating System Functions and Services		PPT + Chalk & Board
2			https://youtu.be/VtqPyXDaMr4 https://youtu.be/OOLy8jnl1hA https://youtu.be/UcXWaeRikSo	Operating System Classification - Batch, Interactive, Multiprogramming, Time sharing		
3			https://youtu.be/YQZbIT9FcUk	Real Time System, Multiprocessor Systems, Multithreaded Systems		
4			https://youtu.be/8duV1LLHHJU https://youtu.be/tWPa-rZiGM8 https://youtu.be/uMMvYLB4cys https://youtu.be/n5lgcKch3Hk	System Protection, System Calls, Reentrant Kernels		
5			https://youtu.be/n5lgcKch3Hk	Operating System Structure-Layered structure		PPT + Chalk & Board
6			https://youtu.be/XXPBl20J22w	Monolithic and Microkernel Systems		PPT + Chalk & Board
7			https://youtu.be/rAMVA1QJUhU	Operating System Components		PPT + Chalk & Board
8		Processes	https://youtu.be/n5lgcKch3Hk https://youtu.be/2dJdHMpCLIg	Process Concept, Process States		PPT + Chalk & Board
9			https://youtu.be/8xUESrjyj1c	Process State Transition Diagram, Process Control Block (PCB)		PPT + Chalk & Board
10			https://youtu.be/9cuwgiHQyoI https://youtu.be/LNiNOW-_8lw	Threads and their management		PPT + Chalk & Board
11		CPU Scheduling	https://youtu.be/zFnrUVqtiOY https://youtu.be/n7Owxwfr6Ko	Process Scheduling Concepts Performance Criteria		PPT + Chalk & Board
12			https://youtu.be/RzPub5hXFwI https://youtu.be/exlaEOVRWQM	Scheduling Algorithms: FCFS, SJF and SRTF, Round Robin		PPT + Chalk & Board
13			https://youtu.be/_NlmflJQDI4	Scheduling Algorithms: Priority and Multilevel Queue Scheduling		PPT + Chalk & Board
14			https://youtu.be/aKjDqOguxjA	Multiprocessor Scheduling		PPT + Chalk & Board
15-16		Process Synchronization	https://youtu.be/ixq5cpdEO2Q	Principle of Concurrency, Implementation of concurrency through fork/join and parbegin/parend		PPT + Chalk & Board
17			https://www.youtube.com/live/eQuB2Ll123M?feature=share https://youtu.be/4BInccFSKso	Inter Process Communication models and Schemes		PPT + Chalk & Board
18			https://youtu.be/qMQsd7Iy5jo	Producer / Consumer Problem, Critical Section Problem		PPT + Chalk & Board
19-20			https://youtu.be/XAsAAJSotA4	Dekker's solution, Peterson's solution		PPT + Chalk & Board
21			https://youtu.be/eoGkJWgxurQ	Semaphores, Synchronization Hardware		PPT + Chalk & Board
22		Classical Problem in Concurrency	https://youtu.be/HHoB2t_B6MI	Dining Philosopher Problem		PPT + Chalk & Board
23			https://youtu.be/Zdzp5k3eSYg	Readers Writers Problem		
24		Deadlock	https://youtu.be/_zOTMOubT1M	System model, Deadlock characterization		PPT + Chalk & Board
25			https://youtu.be/JABarkXjxpk https://youtu.be/eS_qpUNZINI https://youtu.be/Y14b7_T3AEw	Prevention, Avoidance and detection		
26			https://youtu.be/PzV5hzGRPRs https://youtu.be/U7zKBXg-YOI	Recovery from deadlock, Combined Approach		
27		Memory Management	https://youtu.be/FrTttJLN7Kw https://youtu.be/JdPmsrYqRDY https://youtu.be/N3rG_1CEQkQ	Multiprogramming with fixed partitions, Multiprogramming with variable partitions		PPT + Chalk & Board
28			https://youtu.be/xAvC-MJ_Sz8	Paging		
29			https://youtu.be/dz9Tk6KCMlQ	Segmentation		
30				Paged segmentation		

Lect	Module	Topic	Pre Reading Material	Sub Topic	Instructor	Methodology
31	Module-II	**Virtual memory concepts**	https://youtu.be/g9HTAK0WwkY	Demand paging, Performance of demand paging		PPT + Chalk & Board
32-33			https://youtu.be/8rcUs5RutX0 https://youtu.be/q2BpMvPhhrY https://youtu.be/dYIoWkCvd6A	Page replacement algorithms		
34			https://youtu.be/IyWaK8pbN6A	Thrashing, Locality of reference		

Lect	Module	Topic	Pre Reading Material	Sub Topic	Instructor	Methodology
35			https://youtu.be/F18RiREDkwE	I/O devices, I/O subsystems		
36				I/O buffering		
37-38		**I/O Management and Disk Scheduling**	https://youtu.be/aKmuGwHj3Cw https://youtu.be/034pt6kFLe8 https://youtu.be/0Q-hvtonCfo https://youtu.be/gQqZ7SQ2Yfw https://youtu.be/Au9BxxLEm5M https://youtu.be/5hKKzoLk1RY https://youtu.be/XqE8hka8avY	Disk storage and disk scheduling		PPT + Chalk & Board
39			https://youtu.be/I0bIfv2uw-s	File concept, File organization and access mechanism		
40		**File System**		File directories		
41			https://youtu.be/gK6L3v1b8AM	File allocation methods		PPT + Chalk & Board
42			https://youtu.be/hDBFSQRHPAU	Free space management		

Refrence Books

R1	Silberschatz, Galvin and Gagne , **Operating Systems Concepts** 9th Edition, Wiley, 2012.
R2	SibsankarHalder and Alex a Aravind , **Operating Systems** 6th Edition, Pearson Education, 2009.