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| **UNIT** | **Lec. No.** | **Topics to be covered** | **Date**  **Planned** | **Date**  **Completed** | **References** | **Co-relation with POs** |
| **UNIT-1** | 1. | Introduction :Operating system and functions |  |  |  |  |
| 2. | Classification of Operating systems- Batch,  Interactive, Time sharing, Real Time System, Multiprocessor Systems |  |  |  |  |
| 3. | Multiuser Systems,  Multiprocess Systems, Multithreaded Systems |  |  |  |  |
| 4. | Operating System Structure- Layered structure, System Components, |  |  |  |  |
| 5 | Operating System services, Reentrant Kernels |  |  |  |  |
| 6. | Monolithic and Microkernel  Systems |  |  |  |  |
| UNIT-2 | 7. | Concurrent Processes: Process Concept, Principle of Concurrency |  |  |  |  |
| 8. | Producer / Consumer  Problem |  |  |  |  |
| 9. | Mutual Exclusion, |  |  |  |  |
| 10. | Critical Section Problem |  |  |  |  |
| 11 | Dekker’s solution |  |  |  |  |
| 12. | Peterson’s solution |  |  |  |  |
| 13. | Semaphores, |  |  |  |  |
| 14 | Test and Set operation |  |  |  |  |
| 15 | Classical Problem in Concurrency- Dining Philosopher Problem |  |  |  |  |
| 16 | Sleeping Barber Problem |  |  |  |  |
|  | 17 | Inter Process Communication models and Schemes |  |  |  |  |
|  | 18. | Process  Generation |  |  |  |  |
| UNIT-3 | 19. | CPU Scheduling: Scheduling Concepts, Performance Criteria |  |  |  |  |
|  | 20. | Process States, Process Transition  Diagram |  |  |  |  |
|  | 21. | Schedulers, Process Control Block (PCB) |  |  |  |  |
|  | 22. | Process address space, Process identification information |  |  |  |  |
|  | 23. | Threads and their management |  |  |  |  |
|  | 24. | Scheduling Algorithms |  |  |  |  |
|  | 25. | Scheduling Algorithms |  |  |  |  |
|  | 26. | Scheduling Algorithms |  |  |  |  |
|  | 27. | Scheduling Algorithms |  |  |  |  |
|  | 28. | Multiprocessor Scheduling |  |  |  |  |
|  | 29. | Deadlock: System model, Deadlock characterization, Prevention  Deadlock: Avoidance and detection, |  |  |  |  |
|  | 30 | Recovery from deadlock |  |  |  |  |
| UNIT-4 | 32. | Memory Management: Basic bare machine, Resident monitor |  |  |  |  |
|  | 33. | Multiprogramming with fixed  Partitions |  |  |  |  |
|  | 34. | Multiprogramming with variable partitions |  |  |  |  |
|  | 35 | Protection schemes, Paging, Segmentation |  |  |  |  |
|  | 36. | Paged segmentation, Virtual memory concepts |  |  |  |  |
|  | 37. | Demand paging, Performance of  demand paging |  |  |  |  |
|  | 38. | Page replacement algorithms, Thrashing |  |  |  |  |
|  | 39. | Cache memory organization, Locality of reference |  |  |  |  |
| **UNIT-5** | 41. | I/O subsystems, I/O buffering |  |  |  |  |
|  | 42. | Disk storage |  |  |  |  |
|  | 43. | disk scheduling |  |  |  |  |
|  | 44. | RAID File |  |  |  |  |
|  | 45. | RAID File |  |  |  |  |
|  | 46 | System: File concept |  |  |  |  |
|  | 47. | File organization and Access mechanism |  |  |  |  |
|  | 48. | File organization and Access mechanism |  |  |  |  |
|  |  | File directories, File sharing |  |  |  |  |
|  |  | File system implementation issues, File system  protection and security |  |  |  |  |
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|  |  | Revision |  |  |  |  |

**Signature of Course Instructor Name, Designation & Department**