

Guidelines of B.Sc. (H) Computer Science Sem III (CBCS)
Operating System (BHCS06) Core Course - (CC)

Chapter	Topic	Contents	Lectures
1	Introduction	1.1, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.11	10
2	System Structures	2.1, 2.3, 2.4, 2.5, 2.7 – 2.7.4, 2.10 * 2.2 – Coverage with Demo for Practical Purpose	6
3	Process Concept	3.1, 3.2, 3.3 (excluding process creation using Windows API figure 3.11)	4
4	Multithreaded Programming	4.1, 4.2, 4.3, 4.4 – 4.4.1	4
5	Process Scheduling	5.1, 5.2, 5.3 – 5.3.4	5
6	Synchronization	6.1, 6.2, 6.3, 6.6 - 6.6.1	4
7	Deadlocks	7.1 , 7.2, 7.3 (excluding deadlocks with mutex locks)	3
8	Memory-Management Strategies	8.1, 8.2, 8.3, 8.4, 8.5	8
9	Virtual-Memory Management	9.1, 9.2, 9.3, 9.4 – 9.4.3	5
10	File System	10.1, 10.2, 10.3	4
12	Mass-Storage Structure	12.1, 12.4	3

Refe

rences

1. Silberschatz, P.B. Galvin, G. Gagne, Operating System Concepts, 9th edition, John Wiley Publications.

Additional Resources

1. Dhamdhare, D. M. (2006). Operating Systems: A Concept-based Approach. 2nd edition. Tata McGraw-Hill Education.
2. Kernighan, B. W., & Rob Pike, R. (1984). The Unix programming environment (Vol. 270). Englewood Cliffs, NJ: Prentice-Hall
3. Stallings, W. (2018). Operating Systems: Internals and Design Principles. 9th edition. Pearson Education.

4. Tanenbaum, A. S. (2007). Modern Operating Systems. 3rd edition. Pearson Education.

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C – VI Practical List for Operating Systems

1. Write a program (using fork() and/or exec() commands) where parent and child execute:
 - a) same program, same code.
 - b) same program, different code.
 - c) before terminating, the parent waits for the child to finish its task.
2. Write a program to report behaviour of Linux kernel including kernel version, CPU type and model. (CPU information)
3. Write a program to report behaviour of Linux kernel including information on 19 configured memory, amount of free and used memory. (memory information)
4. Write a program to print file details including owner access permissions, file access time, where file name is given as argument.
5. Write a program to copy files using system calls.
6. Write a program to implement FCFS scheduling algorithm.
7. Write a program to implement Round Robin scheduling algorithm.
8. Write a program to implement SJF scheduling algorithm.
9. Write a program to implement non-preemptive priority based scheduling algorithm.
10. Write a program to implement preemptive priority based scheduling algorithm.
11. Write a program to implement SRJF scheduling algorithm.
12. Write a program to calculate sum of n numbers using thread library.
13. Write a program to implement first-fit, best-fit and worst-fit allocation strategies.