



<b>Course Code:</b> <b>BCA 306</b>	<b>BCA- Semester-III</b> <b>Core Course (CC-5)</b> <b>OPERATING SYSTEM</b>	<b>L-2</b> <b>T-1</b> <b>P-0</b> <b>C-3</b>
<b>Course Outcomes:</b>	<b>On completion of the course, the students will be:</b>	
<b>CO1.</b>	Understanding to describe the functionality of operating system.	
<b>CO2.</b>	Understanding to understand process, its management and synchronization.	
<b>CO3.</b>	Understanding concept of deadlock, how it is detected and prevented.	
<b>CO4.</b>	Understanding concept of memory and its management and various processes to manage it.	
<b>CO5.</b>	Understanding concept of file management and its various techniques.	
<b>Course Content:</b>		
<b>Unit-1:</b>	Introduction to the Operating System (OS), Types of Operating System: Batch System, Time Sharing System, Real Time System. Multi Programming, Distributed System, Functions and Services of OS.	<b>7 Hours</b>
<b>Unit-2:</b>	<b>Process Management:</b> Process Concept, Process State, Process Control Block, Process Scheduling, CPU Scheduling - Scheduling Criteria, Scheduling Algorithms, Preemptive & Non Preemptive Scheduling.	<b>7 Hours</b>
<b>Unit-3:</b>	<b>Deadlocks:</b> System model, Characterization, Deadlock Prevention, Deadlock Avoidance and Detection, Recovery from deadlock.	<b>8 Hours</b>
<b>Unit-4:</b>	<b>Memory Management:</b> Logical Address, Physical Address, External and Internal Fragmentation. Concept of paging, Page table structure - Hierarchical Paging, Hashed Page Tables, Inverted Page Table.	<b>7 Hours</b>
<b>Unit-5:</b>	<b>Information Management:</b> File Concept, Access Methods, Directory Structure. Device Management: Disk Structure, Disk Scheduling Algorithms.	<b>7 Hours</b>
<b>Text Books:</b>	1. Silberschatz and Galvin, "Operating System Concept", Addison Wesley.	
<b>Reference Books:</b>	1. Flynn, Mchoes, "Understanding Operating System", Thomson Press, Third Edition. 2. Tannenbaum, "Operating System Concept", Addison Wesley. 3. Joshi, R. C. and Tapaswi, S., "Operating Systems", Wiley Dreamtech. 4. Nutt, G., "Operating Systems", Addison-Wesley. 5. Godbole Ahyut, "Operating System", PHI.  <b>* Latest editions of all the suggested books are recommended.</b>	



<b><u>Additional Electronic Reference Material:</u></b>	<a href="https://nptel.ac.in/courses/106/105/106105214/">https://nptel.ac.in/courses/106/105/106105214/</a> <a href="https://www.youtube.com/playlist?list=PLsylUObW5M3CAGT6OdubyH6FztKfJCcFB">https://www.youtube.com/playlist?list=PLsylUObW5M3CAGT6OdubyH6FztKfJCcFB</a>	
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