

## OPERATING SYSTEMS LABORATORY

<b>IV Semester: CSE / IT</b>								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
<b>ACS106</b>	<b>Core</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	<b>CIA</b>	<b>SEE</b>	<b>Total</b>
		-	-	3	2	30	70	100
<b>Contact Classes: Nil</b>	<b>Tutorial Classes: Nil</b>	<b>Practical Classes: 45</b>			<b>Total Classes: 45</b>			
<p><b>OBJECTIVES:</b>            The course should enable the students to:</p> <ol style="list-style-type: none"> <li>Understand the basic principles of Scheduling algorithms.</li> <li>Apply the page replacement algorithms.</li> <li>Understand the file allocation strategies.</li> <li>Evaluate the bankers algorithm.</li> <li>Understand the memory management techniques.</li> </ol> <p><b>COURSE LEARNING OUTCOMES (CLOs):</b>            The students should enable to:</p> <ol style="list-style-type: none"> <li>Understand the concepts of different scheduling algorithms</li> <li>Demonstrate the concept of scheduling the process with the shortest burst time to be process first.</li> <li>Understand the Priority Scheduling algorithm used for both pre-emptive and non-pre-emptive scheduling of tasks in operating systems.</li> <li>Demonstrate the replacing the page with page replacement algorithms in memory management in operating systems</li> <li>Determine the importance of different file allocation strategies.</li> <li>Understand the concepts of Bankers algorithm for the purpose of deadlock avoidance.</li> <li>Determine the procedure for deadlock prevention using Bankers algorithm.</li> <li>Understand the basic concepts of MVT memory management techniques.</li> <li>Understand the basic concepts of MFT memory management techniques.</li> <li>Determine the concepts of file organization techniques.</li> <li>Understand the importance of two level directories.</li> <li>Determine the concepts of paging techniques of memory management.</li> </ol>								
<b>LIST OF EXPERIMENTS</b>								
<b>Week-1</b>	<b>CPU SCHEDULING ALGORITHMS</b>							
Write a program to simulate the FCFS and SJF non-preemptive CPU Scheduling algorithms to find turnaround time and waiting time.								
<b>Week-2</b>	<b>CPU SCHEDULING ALGORITHMS</b>							
Write a program to simulate the Round Robin and Priority CPU Scheduling algorithms to find turnaround time and waiting time.								
<b>Week-3</b>	<b>PAGE REPLACEMENT ALGORITHMS</b>							
Write a program to simulate FIFO page replacement algorithm.								
<b>Week-4</b>	<b>PAGE REPLACEMENT ALGORITHMS</b>							

Write a program to simulate LRU and LFU page replacement algorithms.	
<b>Week-5</b>	<b>FILE ALLOCATION STRATEGIES</b>
Write a program to simulate the Sequential file allocation strategies.	
<b>Week-6</b>	<b>BANKER ALGORITHMS</b>
Write a program to simulate Bankers algorithm for the purpose of deadlock avoidance.	
<b>Week-7</b>	<b>BANKER ALGORITHMS</b>
Write a program to simulate Bankers algorithm for the purpose of deadlock Prevention.	
<b>Week-8</b>	<b>MEMORY MANAGEMENT TECHNIQUES</b>
Write a program to simulate the MVT memory management techniques.	
<b>Week-9</b>	<b>MEMORY MANAGEMENT TECHNIQUES</b>
Write a program to simulate the MFT memory management techniques.	
<b>Week-10</b>	<b>FILE ORGANIZATION TECHNIQUES</b>
Write a program to simulate the Single level directory file organization techniques.	
<b>Week-11</b>	<b>FILE ORGANIZATION TECHNIQUES</b>
Write a program to simulate the Two level directory file organization techniques.	
<b>Week-12</b>	<b>PAGING TECHNIQUES</b>
Write a program to Simulate paging technique of memory management.	
<b>TEXT BOOK:</b>	
1. Abraham Silberschatz, Peter B. Galvin, Greg Gagne, "Operating System Principles", Wiley Student Edition, 8th Edition, 2010.	
<b>REFERENCE BOOK:</b>	
1. Andrew S Tanenbaum, "Modern Operating Systems", PHI, 3rd Edition, 2007.	