

**ST. ANN'S COLLEGE OF ENGINEERING & TECHNOLOGY: CHIRALA**

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**LESSON PLAN**

**Subject: Operating Systems**

**Academic Year : 2019-20**

**No. of Lectures per week: 5+1\* (Tutorial)**

**Year & Sem/Section: III-I –A,B&C**

S.No.	Sub Topic Names	No. of Classes required
Unit/Topic No.		
I	<b>Introduction to Operating System Concept:</b> Types of operating systems, operating systems concepts, operating systems services, Introduction to System call, System call types.	9
II	<b>Process Management</b> – Process concept, The process, Process State Diagram , Process control block, Process Scheduling- Scheduling Queues, Schedulers, Operations on Processes, Interprocess Communication, Threading Issues, Scheduling-Basic Concepts, Scheduling Criteria, Scheduling Algorithms.	9
III	<b>Memory Management:</b> Swapping, Contiguous Memory Allocation, Paging, structure of the Page Table, Segmentation <b>Virtual Memory Management:</b> Virtual Memory, Demand Paging, Page-Replacement Algorithms, Thrashing	8
IV	<b>Concurrency:</b> Process Synchronization, The Critical- Section Problem, Synchronization Hardware, Semaphores, Classic Problems of Synchronization, Monitors, Synchronization examples <b>Principles of deadlock</b> – System Model, Deadlock Characterization, Deadlock Prevention, Detection and Avoidance, Recovery form Deadlock	8
V	<b>File system Interface-</b> the concept of a file, Access Methods, Directory structure, File system mounting, file sharing, protection. <b>File System implementation-</b> File system structure, allocation methods, free-space management <b>Mass-storage structure</b> overview of Mass-storage structure, Disk scheduling, Device drivers	8
VI	<b>Linux System:</b> Components of LINUX, Interprocess Communication, <b>Android Software Platform:</b> Android Architecture, Operating System Services Android Runtime Application Development, Application Structure, Application Process management	8
	<b>Total No. of hours</b>	<b>50</b>
<b>Text Books</b>		

1	Operating System Concepts, Abraham Silberschatz, Peter Baer Galvin and Greg Gagne 9th Edition, John Wiley and Sons Inc., 2012.
2	Operating Systems – Internals and Design Principles, William Stallings, 7th Edition, Prentice Hall, 2011.
3	Operating Systems-S Halder, Alex A Aravind Pearson Education Second Edition 2016 .
<b>References</b>	
1	Modern Operating Systems, Andrew S. Tanenbaum, Second Edition, Addison Wesley, 2001.
2	Operating Systems: A Design-Oriented Approach, Charles Crowley, Tata Mc Graw Hill Education”, 1996.
3	Operating Systems: A Concept-Based Approach, D M Dhamdhere, Second Edition, Tata Mc Graw-Hill Education, 2007.

**FACULTY**

**HEAD OF THE DEPARTMENT**