**SRI RAMAKRISHNA MISSION VIDYALAYA**

**COLLEGE OF ARTS & SCIENCE- COIMBATORE - 641 020**

 For candidates admitted from academic year 2013-2014 onwards under New CBCS.

 **OPERATING SYSTEM**

**Year : II Semester : IV**

**Hours / Week : 5 Subject Code : 4CT09**

 **Credits : 4**

Unit I

INTRODUCTION: What is an Operating System?-Mainframe Systems-Desktop Systems-Multiprocessor Systems-Distributed Systems-Clustered System-Real-Time Systems-Handheld Systems. Operating-System Structures:-System Components-Operating-System Services-System Calls-System Programs-System Structure-Virtual Machines.(Pages 3-19, 55-80)

Unit II

PROCESS MANAGEMENT: Process Concept-Process Scheduling-Operations on Processes-Cooperating Processes-Inter process Communication. CPU Scheduling:-Basic Concepts-Scheduling Criteria- Scheduling Algorithms-Multiple-Processor Scheduling-Real-Time Scheduling. Deadlocks:-System Model-Deadlock Characterization-Methods for Handling Deadlocks-Deadlock Prevention- Deadlock Avoidance- Deadlock Detection-Recovery from Deadlock. (Pages 95 – 109, 151-170, 243 - 264)

Unit III

STORAGE MANAGEMENT: Memory Management:-Background-Swapping-Contiguous Memory Allocation-Paging-Segmentation- Segmentation with Paging. Virtual Memory:-Background-Demand Paging-Process Creation-Page Replacement-Allocation of Frames-Thrashing. (Pages 273-309, 317 – 348)

Unit IV

File-System Implementation:-File-System Structure- File-System Implementation- Directory Implementation-Allocation Methods-Free-Space Management. Mass-Storage Structure:-Disk Structure-Disk Management-Swap-Space Management-RAID Structure-Disk Attachment-Stable-Storage Implementation-Tertiary-Storage Structure. (Pages 411 – 430, 491 – 516)

Unit V - CASE STUDIES:

Windows2000: History-DesignPrinciples-SystemComponents-Environmental Subsystems-File System-Networking-Programmer Interface. Windows XP: History-Design Principles-System Components-Environmental Subsystems-File System-Networking-Programmer Interface. (Pages 743-780, 789 – 839)

TEXT BOOK :

1. SILBERSCHATZ, GALVIN, GAGNE, OPERATING SYSTEM CONCEPTS, Wiley India Edition (sixth edition), 2007

REFERENCE BOOKS:

1. DeitelDeitelChoffnes, Operating Systems, Pearson Education (third edition), 2003.
2. Stuart E. Madnick, John J.Donovan, Operating Systems, Tata McGraw Hill (third edition),2003