Course Title :Operating Systems **No. of Credits:4**

Course Code :19CSEAC03 **No. of Teaching Hours:T-30, P-30**

Course Objectives

To impart knowledge to make the students

1. To understand the operating system principles.
2. To understand the Principles of Deadlock, processor scheduling and memory management.
3. To learn using case studies in different OS.

UNIT I

Introduction: Operating System, Types of Operating System. Process: Process Concept – Hierarchy of Process – Critical Section Problem – Semaphores – Inter Process Communication. CPU Scheduling. Deadlock: Deadlock Problem, Characterization, Prevention, Avoidance - Detection - Recovery.

UNIT II

Memory Management: Basics – Swapping – Virtual Memory – Page Replacement Algorithms – Segmentation. Input/output: Principles of I/O Hardware and Software – Discs – Clocks – Graphical User Interface. File Systems: Files – Directories – File System Implementation. Protection and Security Overview.

UNIT III

Linux System: Introduction – Programming Linux. Shell Programming: What is Shell? – Pipes and Redirection – The Shell as a Programming Language – Shell Syntax – The Dialog Utility. Working with Files: Linux File Structure – System Calls and Device Drivers – Library Functions – Low-Level File Access – The Standard i/o Library – Formatted Input Output – File and Directory Maintenance – Scanning Directories.

UNIT IV

The Linux Environment: Program Arguments – Environment Variable – time and Date – Temporary Files – User Information – Host Information – Logging – Resources and Limits. Terminals: Reading from and Writing to the Terminal – Talking to the Terminal – The Term iOS Structure – Terminal Output – Detecting Keystrokes.

UNIT V

The vi Editors: vi Text Editor – Simple Editing – Advance Editing. The vim Editor: Creating and Editing File with vim – Introduction to vim Features – Moving Cursor in Command Mode– Deleting and Changing Text in Command Mode – Input Mode – Searching and Substituting – Copying, Moving and Deleting Text - Reading and Writing Files – Advanced Editing Techniques.