B.Sc. Part – III Computer Science (Optional) (Semester – VI)
Course Code: DSE-F23   Computer Science Paper –XV
Course Title: Advanced Linux OS
Total Contact Hours: 36 Hrs (45 Lectures of 48 Min.)
Teaching Scheme: Theory – 03 Lect. / Week

Credits: 02   **Total Marks: 50**

Course Outcomes:

After successful completion of this course, students will able to:

1) understand the working and use of NANO editor.
2) learn Regular expressions using metacharacters.
3) learn filters with the help of regular expression.
4) learn advanced BASH shell Programming.

Unit – 1: Memory Management, NANO Editor and Regular Expressions   (18 Hrs.)

Memory Management: Swapping, Demand Paging, Paging, and Segmentation.

NANO Editor: Installing the Nano Text Editor in Linux, Nano Command Keys, Create a New File using Nano, Open an Existing File Using Nano, Edit Files Using Nano Text Editor in Linux, Cut and Paste Lines of Text Using Nano, Valid Shortcuts in Nano Text Editor, Search Text Using Nano, Spell Check Using Nano, Save Your Work Using Nano, Save with Backups.

Regular Expressions: Metacharacters, Controlling Repeated Characters through *, +, and ?, Using and Modifying the '.' Metacharacter, Controlling Where a Pattern Matches, Matching from a List of Options, Matching Characters That Must Not Appear, Matching Metacharacters Literally, Controlling Repetition, Selecting between Sequences

Unit – 2: Filters and Advanced BASH Shell Programming   (18 Hrs.)

Filters: cat, tac, head, tail filters and options, sed and sed options, grep and grep options, Line Addressing, Multiple Instruction(-E and -F), Context Addressing, Writing Selected Lines to a File.

Advanced BASH Shell Programming: Seq Command for sequence, Shell and subshell, Exporting Shell Variables, Arrays, String Manipulation, Shell Functions.

Reference Books –
1. LINUX with Operating System Concepts by Richard Fox, CRC Press
2. Linux Commands- Instant Reference by Bryan PF affenberge
3. The Design of the Unix Operating System- Bach
4. Unix Shell Programming- Yashwant Kanetkar
5. Unix Concepts and Application – Sumitabhadas
6. Linux : The Complete Reference- Richard Peterson