

**SES's L.S. RAHEJA COLLEGE OF ARTS AND COMMERCE
(AUTONOMOUS)**



BOARD OF STUDIES: Information Technology and Data Science

Programme: B.Sc. (Cyber Security & Digital Forensics)

Semester: II

Nomenclature of the Course: Linux Shell Scripting

NEP Vertical: SEC

Credit: 02

Total Marks: 50

Academic Year: 2026–27

(As per Choice Based Credit System under NEP 2020)



Unit-wise Detailed Syllabus

Unit	Detailed Contents	Andragogy	Hours
Unit I: Linux Basics & Command Line Environment	1. Introduction to Linux Operating System 2. Linux File System Structure 3. Basic Commands (ls, cd, pwd, mkdir, rm, cp, mv) 4. File Permissions & Ownership 5. Process Management Commands 6. Redirection and Pipes	Live terminal demonstration. Hands-on: • Navigate file system • Create and manage files/directories • Modify file permissions • Use pipes and redirection	15
Unit II: Shell Scripting & Automation	1. Introduction to Shell & Bash 2. Writing Basic Shell Scripts 3. Variables and Input Handling 4. Conditional Statements (if, case) 5. Looping (for, while) 6. Functions in Shell Script 7. Simple Automation Tasks	Script development sessions. Hands-on: • Write basic script to display system info • Script for file backup • Script for user input validation • Automate simple log monitoring	15

Learning Objectives

1. To understand Linux command-line environment.
2. To manage files and permissions in Linux.
3. To write and execute shell scripts.
4. To automate basic system tasks.

Course Outcomes (CO)

CO No.	Course Outcome	Bloom's Level
CO1	Use Linux commands effectively	Apply (L3)
CO2	Manage file permissions and processes	Apply (L3)
CO3	Develop basic shell scripts	Apply (L3)
CO4	Automate simple system operations	Apply (L3), Analyze (L4)

Suggested Readings

Sr. No.	Title	Author / Source
1	The Linux Command Line	William E. Shotts Jr.
2	Linux Shell Scripting Cookbook	Sarath Lakshman
3	Bash Guide for Beginners	Machtelt Garrels
4	Linux Administration Handbook	Nemeth et al.

QUESTION PAPER PATTERN

(A) Continuous Evaluation – 20 Marks

Particulars	Marks
Class Test	10
Script-based Assignment / Journal	10
Total	20

(B) Semester End Examination – 30 Marks

Duration: 1 Hour

Question No.	Description	Total Marks
Q1	Attempt Unit I	15
	A – Remembering	
	B – Analysing	
	C – Applying	
OR		
	P – Remembering	15
	Q – Analysing	
	R – Applying	
Q2	Attempt Unit II	15
	A – Remembering	
	B – Analysing	
	C – Applying	
OR		
	P – Remembering	15
	Q – Analysing	
	R – Applying	