



**C. U. Shah University, Wadhwan City**  
**Faculty of Computer Science**  
**Name of Program: Bachelor of Computer Application**  
**(BCA)**  
**Semester : VI**  
**W.e.f. June-2015**

**Teaching & Evaluation Scheme**

Sr. No	Subject Code	Subject Name	Teaching Hours/Week				Credits	Evaluation Scheme/Semester							
			Th	Tu	Pr	Total		Theory				Practical			Total Marks
								Sessional Exam		University Exam		Internal		Uni.	
								Marks	Hrs	Marks	Hrs	Pr	TW	Pr	
2	4CS06BLN1	Linux Programming	4	-	-	4	4	30	1.5	70	3	-	-	-	100

**Objectives:** At the end of the syllabus students should understand about Linux operating system better and should be able to make programming in Linux environment.

**Pre-requisites:** Student should have the knowledge of Programming essentials.

**Course Outline:**

Ch. No.	Chapter Name	Topics	Lect. Hours
1	Linux / Unix introduction	About unix, features, types of cell, Various unix commands, Introduction to UNIX/Linux kernel, System Structure, Architecture of UNIX operating system	05
2.	Linux OS	Linux – The Operating System: Linux history, Linux features, Linux distributions, Linux 'srelationship to Unix, Overview of Linux architecture, Installation, Start up scripts, system processes (an overview), Linux Security, The Ext2 and Ext3 File systems :General Characteristics of, The Ext3 File system, file permissions. User Management: Types of users, The powers of Root, managing users (adding and deleting): using the command line & GUI tools.	10
3	Linux Utilities	File handling utilities, Security by file permissions, Process utilities, Disk utilities, Networking commands, Filters, Text processing utilities and Backup utilities, sed – scripts, operation, addresses, commands, applications, awk – execution, fields and records, scripts, operation, patterns, actions, functions, using system commands in awk.	
4	Resource Management in Linux	file and directory management, system calls for files Process Management, Signals, IPC: Pipes, FIFOs, System V IPC, Message Queues, system calls for Processes, Memory Management, library and system calls for memory.	10
5	Shell Programming	Introducing vi editor, text editing in vi, starting, moving and exiting vi, text adding, deleting, various vi modes Available shells under Linux (viz. Bash, TCSH, Korn or so on), different Shell features, editors, shell commands, shell scripts: shell variables, environmental variables, purpose of shell scripts, writing, storing and executing scripts, Filters- The grep family, advanced filters-sed and awk.shell script examples, interrupt processing, functions, debugging shell scripts.	15

6	Files	File Concept, File System Structure, Inodes, File Attributes, File types, Library functions, the standard I/O and formatted I/O in C, stream errors, kernel support for files, System calls, file descriptors, low level file access – File structure related system calls (File APIs), file and record locking, file and directory management – Directory file APIs, Symbolic links & hard links.	10
			Total:: 50

**Teaching Methodology:**

Revision, Paper Solving, Seminar, Expert Talk, MCQ Quiz, Viva Test, Programming Test

**Learning Outcome:**

After learning of this course students should be able to do programming in Linux.

**Books Recommended:**

1. Complete Guide to Linux by Peter Norton. Publication : SAMS
2. A Practical Guide to Linux Commands, Editors and Shell Programming By Mark G. Sobell Publication: Pearson India
3. Linux : Complete reference By Richard Peterson Publication McGraw Hill India
4. Linux Administration : A beginners guide By Wale Soyinka Publication : McGraw Hill India
5. Linux Kernel Development By Robert Love Publication : Pearson India