



B. P. PODDAR INSTITUTE OF MANAGEMENT AND TECHNOLOGY

DEPARTMENT OF COMPUTER APPLICATION

ACADEMIC YEAR: 2018-19 [ODD SEMESTER]

COURSE OUTCOMES

Course: UNIX and Shell Programming

Code : MCA-302

Branch: Computer Application

CO's	Description	Bloom level
MCA302.1	Understand the concept of shell and Kernel in UNIX Operating System	Understand
MCA302.2	Write simple shell programs using basic shell commands.	Create
MCA302.3	Illustrate the usage of Vi editor in UNIX environment	Apply
MCA302.4	Apply basic and advanced file attributes.	Apply
MCA302.5	Write shell programs using simple and advanced filters	Create
MCA302.6	Explain process control and TCP/IP networking in Unix Operating environment	Understand



B. P. PODDAR INSTITUTE OF MANAGEMENT AND TECHNOLOGY
DEPARTMENT OF COMPUTER APPLICATION
ACADEMIC YEAR: 2018-19 [ODD SEMESTER]
Lesson Plan

Course : UNIX and Shell Programming Code : MCA-302 Branch: Computer Application

1. Text Book:

- T1: Concepts and Applications-By Sumitabha Das (TMH), 4th Edition.
T2: The Ultimate Guide- By Sumitabha Das (TMH)
T3: Unix Shell Programming-By Yashavant Kanetkar (BPB publications)
T4: Design of Unix Operating System –By Maurice Bach (PHI)

2. References

- R1: Learning the vi Editor, Lamb, O'Reilly
R2: UNIX-A Quick Reference, Xavier

3. E-learning Courses for Reference

- W1: <https://nptel.ac.in/courses/117106113/1>
W2: <https://www.geeksforgeeks.org/introduction-linux-shell-shell-scripting/>
W3: https://www.tutorialspoint.com/unix/shell_scripting.htm

Lecture No.(L)	Description	Ref	Teaching Aids	Teaching Methods
L1	Salient Features of Unix Operating System- Multi-user capability, Multitasking Capability, communication, security	T1, T3	BB	Lectures
L2	The Unix Architecture (Kernel-Shell-User Relationship)	T1, T3	BB	Lectures
L3	Understanding the Unix Command (Internal & External), General-Purpose Utilities	T1	BB ,PPT	Lectures
L4	The File System----- Different types of files (Ordinary, Directory, Device file)	T1	BB	Lectures
L5	The File System----- The Unix File System Tree (Parent-Child relationship)	T1	BB,PPT	Lectures
L6	Handling Ordinary Files---- Displaying & Creating Files with cat command Compare two files with cmp, comm. And diff	T1,T3	BB	Lectures
L7	Handling Ordinary Files---- The essential file functions- copy with cp, remove with rm & rename with mv	T1,T3	BB ,PPT	Lectures
L8	Basic File Attributes----- Significance of the seven fields of the ls-l	T1, T3	BB	Lectures

	output. File Ownership, File permissions			
L9	Basic File Attributes----- chmod: Changing File Permissions chown: Changing File Owner	T1, T2,T3	BB	Lectures
L10	Tutorial on File handling and basic file attributes	T1, T2, T3	BB	Lectures
L11	Vi editor (Three modes—Command Mode, Input Mode and ex Mode)	T1, T2,T3	BB	Lectures
L12	Shell Commands and Simple Programming, Shell variables and why they are so useful?	T1, T2,T3	BB	Lectures
L13	The significance of metacharacters and their use in wild -cards for matching multiple filenames.	T1,T3,R1	BB	Lectures, Discussions
L14	Essential Shell Programming----- Concept of Shell Script, How Shell scripts is executed.	T1,T3,W1,W2	BB	Lectures, Discussions
L15	Essential Shell Programming----- Make shell scripts interactive using read. Positional parameters for command line arguments	T1,R1,R2,W1	BB,PPT	Lectures, Discussions
L16	Significance of environment variables(HOME,SHELL)	T1,T3	BB	Lectures, Discussions
L17	More File Attributes----- Concept of File Systems and I-Node	T1,T3,W1	BB	Lectures, Discussions, Problem solving
L18	More File Attributes----- Hard link & Symbolic links	T1,T3,W1	BB	Lectures, Discussions, Problem solving
L19	Essential Shell Programming----- Conditional if, case. Loop using While, for	T1	BB,PPT	Lectures, Discussions
L20	Essential Shell Programming----- Use of “test” statement to perform numeric and string comparison, and checks a file’s attributes.	T1,T3	BB,PPT	Lectures, Discussions
L21	Essential Shell Programming----- Arithmetic operations on integers and String Handling using expr command.	T1,R2	BB,PPT	Lectures, Discussions
L22	Tutorial on Vi editor and shell programming	T1,W1,W2	BB,PPT	Lectures, Discussions
L23	Overview of Process----- How a process is created using fork, exec and wait.	T1	BB	Lectures, Discussions
L24	Overview of Process----- How the Shell is Created	T1	BB	Lectures, Discussions
L25	Overview of Process----- View Process attributes with ps,Job control commands	T1	BB	Lectures, Discussions
L26	Tutorial on Job control	T1, T3	BB	Lectures, Discussions
L27	Simple Filters (head, tail, cut, paste, sort,	T1	BB,PPT	Lectures, Discussions

	uniq, tr)			
L28	Filters Using Regular Expressions—grep and sed	T1	BB,PPT	Lectures, Discussions
L29	Awk- An Advanced Filter	T1	BB,PPT	Lectures, Discussions
L30	Awk programming			
L31	Tutorial on simple and advanced filter	T1,T3,R2,W2	BB,PPT	Lectures, Discussions
L32	Essential System Administration----- Super user Status (su) ,Administrator's login (root)	T1,T4	BB	Lectures, Discussions
L33	Essential System Administration----- Administrators privileges, maintaining security	T1,T2,T4	BB	Lectures, Discussions
L34	Essential System Administration----- User Management. Adding a user with useradd command & /etc/passwd and /etc/shadow: User Profiles	T1,T3	BB	Lectures, Discussions
L35	Tutorial on Essential System Administration			Lectures, Discussions
L36	Process States and transitions, Process Control	T1,T3,T4	BB	Lectures, Discussions
L37	Understand awk's unusual syntax with its selection criteria and action commands---- -AWK in details	T1	BB	Lectures, Discussions
L38	Overview of TCP/IP networking. Basic Concepts of four Layers	T1,T2,T3, R2,W3	BB	Lectures
L39	IP Addresses, Daemons and Ports	T1,T2,T3, R2,W3	BB	Lectures
L40	Resolving IP Addresses, Network Class	T1,T2,T3, R2,W3	BB	Lectures
L41	The Applications----- Ping: Checking the network telnet: Remote login ftp: file transfer protocol	T1,T2,T3, R2,W3	BB	Lectures
L42	Domain Name System(DNS), Concept of subnet	T1	BB	Lectures
L43	Tutorial on Process States and transitions, Process Control	T2,T3,T4,R2,W3	BB,PPT	Lectures, Discussions
L44*	System Calls for the file system	T4 ,R2,W1,W3	BB	Lectures, Discussions

***Gap within syllabus**