SCHEME OF COURSE WORK

Course Details:

Course Title	**: Unix and Shell programming**			
Course Code	**: 15CT1115**		**L T P C**	**: 3 1 0 4**
Program:	**: B.Tech.**			
Semester	Information Technology **: V**			
Prerequisites	**: Computer Organization and Operating Systems**			
Courses to which it is a prerequisite	**: Unix Network Programming**			

Course Outcomes (COs):

At the end of the course the student will be able to

1. Describe UNIX operating system commands
2. Understand shell features
3. Develop regular expressions using shell scripts
4. Develop programs using C shell
5. Develop system calls for file management

Course Outcome Versus **Program Outcomes** Versus **Program Specific Outcomes:**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO-1	2		2	2	3	2			3	2	3	3			
CO-2		3	3	3			2		3		2	3			
CO-3		3	3		2				2		2	2	2		
CO-4		2	2	2			2		2		2	2			
CO-5			3	3								3			

3 - Strongly correlated, 2 - *Moderately* correlated, 1- Weakly core, *Blank - No correlation*

Assessment Methods: Assignment / Quiz / Seminar / Case Study / Mid-Test / End Exam

Teaching-Learning and Evaluation

Week	Topic/Content	Course outcomes	Sample questions	Teaching learning Strategy	Assessment Methods
1	**INTRODUCTION TO UNIX:** The UNIX operating System, Unix Architecture, Features of UNIX, command structure usage, basic characteristics of UNIX	CO1	1. List features of Unix operating systems. 2.Explain Unix architecture. 3. What are the differences between Internal external commands?	1.lecture	1.assignment-1 2.quiz-1 3.mid-1
2	**GENERAL-PURPOSE UTILITIES:** cal, date, man, echo, bc, clear, script, tty, passed, who **FILE HANDLING UTILITIES:** The File System, cat, cp, rm, mv, more,	CO1	1. Explain the following commands with syntax &examples. i)script ii)rmdir iii)du iv)uname v)comm	1.lecture	1.assignment-1 2.quiz-1 3.mid-1
3	file, ls, wc, pg, cmp, comm, diff, gzip, tar, zip, df, du,	CO1	1.Explain vi editor with examples	1.lecture	1.assignment-1

	mount, umount, chmod, The vi editor , security by file permissions. **NETWORKING COMMANDS:** ping, telnet, ftp, finger, arp, login.		2. what are the levels of security permissions for the files? 3. Explain the following command with syntax &example. telnet		2.quiz-1 3.mid-1
4	**INTRODUCTION TO SHELLS:** Unix Session, Standard Streams, Redirection, pipes, Tee Command, Command Execution, Command-Line Editing, Quotes, Command Substitution, Job Control, Aliases, Variables, Predefined Variables,	CO1,CO2	1.What is tee command? Explain command execution types. 2.Describe job control and their commands	1.lecture	1.assignment-1 2.quiz-1 3.mid-1
5	**REGULAR EXPRESSIONS:** Atoms,operators **GREP:** Operation, grep Family, Searching for File Content	CO3	1.What are the diffrenceses among grep, egrep and fgrep?	1.lecture	1.assignment-1 2.quiz-1 3.mid-1
6	**AWK:** Execution, Fields and Records, Scripts, Operations, Patterns, Actions, Associative Arrays, String Functions,	CO3	1.Explain the structure of awk script. 2 Write an awk program to calculate the net salaryof an employee. 3 Give the commands to print line numbers in sed and awk. 4 Give the syntax of user defined variables to store the content in a variable	1.lecture 2.writing scripts	1.assignment-1 2.quiz-1 3.mid-1
7	Mathematical Functions, User – Defined Functions, Using Systemcommands in awk, Applications, awk and grep, sed and awk.	CO3	1.Give differences b/w awk and grep. 2. Give the syntax of user defined variables to store the content in a variable	1.lecture	1.assignment-2 2.quiz-2 3.mid-2

8	**INTERACTIVE C SHELL:** C shell features, Two Special Files, Variables, Output, Input, Exit Status of a Command, eval Command, Environmental Variables, On-Off Variables, Startup and Shutdown Scripts, Command History, Command Execution Scripts.	CO4	1.List features of c- Shell. 2.Explain the following commands with syntax in c-shell. i)Exit status ii)eval iii)command history	1.lecture	1.assignment-2 2.quiz-2 3.mid-2
9	**C SHELL PROGRAMMING:** Basic Script concepts, Expressions, Decisions: Making Selections, Repetition, special Parameters and Variables, changing Positional Parameters, Argument Validation, Debugging Scripts, Script Examples	C04	1 Explain the following with neat syntax and example script of the C-shell. i)if-else ii)foreach iii)while 2. Explain any two file expressions in C-shell 3.Explain the positional parameters. What is the difference between $* and $@	1.lecture 2.writing scripts	1.assignment-2 2.quiz-2 3.mid-2
10	**FILE MANAGEMENT:** File Structures, System Calls for File Management – create, open, close, read, write, lseek,	CO5	1.Explain following system calls. i)read() ii)lseek( )	1.lecture	1.assignment-2 2.quiz-2 3.mid-2
11	link, symlink, unlink, stat, fstat, lstat, chmod, chown,	CO5	1. Explain following system call. i)chmod( ) ii)link( )	1.lecture 2.writing	1.assignment-2 2.quiz-2

				scripts	3.mid-2
12	Directory API – opendir, Readdir,closedir, mkdir, rmdir, umask.	CO5	1. What is system call? Explain readdir( ) 2. Explain opendir() system call.	1.lecture 2.writing scripts	1.assign ment-2 2.quiz-2 3.mid-2
13	Mid -II				
14	END EXAM				