

COURSE CODE	COURSE TITLE	L	T	P	C
1152IT114	Unix and Shell Programming	3	0	0	3

Course Category:

~~Foundation (0) / Program Core (1) / Program Elective (2) / Allied Elective (3) / University Elective (4) / Value Education Elective (5) / Independent Learning (6) / Industry Higher Learning Institute Interaction (7).~~

a.Preamble :

This course provides an introduction to write simple Unix scripts Cshell script files end in .csh or .com but the presence of a "file extension" and it's name are entirely optional in Unix.

b.Prerequisite Courses:

Problem solving using C

c.Related Courses:

Shell programming

Shell Scripting

Course Educational Objectives :

Students undergoing this course are expected:

- State how the shell functions at the user interface and command line interpreter.
- Modify built-in shell variables and create and use user-defined shell variables.
- Use I/O redirection, pipes, quoting, and filename expansion mechanisms.
- Create structured shell programming which accept and use positional parameters and exported variables.
- Use shell flow control and conditional branching constructs (while, for, case, if, etc.)
- Create shell programs which process interrupts, pass signals, invoke sub-shells and functions, and trap signals.
- Use shell debugging mechanisms to improve shell program efficiency and detect and correct error.

d.Course Outcomes :

Upon the successful completion of the course, students will be able to:

CO Nos.	Course Outcomes	Knowledge Level (Based on revised Bloom's Taxonomy)
CO1	Create structured shell programming	K1
CO2	How the shell functions will be used	K4
CO3	Filename expansion mechanisms	K3

CO4	Create shell programs with process interrupts	K2
CO5	Shell program efficiency and detect and correct error.	K2

e. Correlation of COs with POs :

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	M		L		L							
CO2	M		L		M							
CO3	M		M		M							
CO4	M				M							
CO5	M				M							

H- High; M-Medium; L-Low

f. Course Content :

UNIT – 1: INTRODUCTION:

L-10

Introduction to Multi user System- History of UNIX - Features & Benefits - Versions of UNIX, Features of UNIX File System - Commonly Used Commands like who, pwd, cd, mkdir, rm,rmdir, ls, mv, ln, chmod, cp, grep, sed, awk ,tr, yacc etc.

UNIT II INTRODUCTION TO SHELL SCRIPTS & AWK PROGRAMMING:

L-8

Bourne Shell, C Shell, Shell Variables, Scripts, Meta Characters and Environment, if and case Statements, for, while and until loops. Awk Pattern Scanning and Processing, begin and end Patterns, Awk Arithmetic and Variables, built In functions and Operators, Arrays, Strings.

UNIT III GENERAL OVERVIEW OF THE SYSTEM :

L-10

System Structure, User Perspective, Operating System Services Assumption about Hardware, The Kernel and Buffer Cache Architecture of UNIX Operating System, System Concepts, Buffer Headers, Structure of the Buffer Pool, Scenarios for Retrieval of the Buffer, Reading and Writing Disk Blocks, Advantages and Disadvantages of Buffer Cache

UNIT IV FUNCTIONS OF UNIX:

L-8

Unix system, components of Unix, structure of Unix file system, directories, wildcards, finding files, archives, file I/O, backup, linking, utilities. Unix shell commands, pipes, filters, Login and logout, using korn, bourne and C shells as programming language.

UNIT V ADVANCED CONCEPTS :

L - 9

Limitations of Unix, FTP and Telnet, Regular expression parsing and engines - grep, egrep, sed, awk, vi etc. Process and signals - fork, Networking commands, Unix programming in C.

g.Learning Resources

i)Text Book

1. Harvey M.Deital, Paul Deital, "C - How to Program", Pearson Education Asia Publication, 2001

ii) Reference Books

1. Mullish Cooper, "The spirit of C, Jaico publishing house, 2002
2. Maurice Bach, "Design of Unix Operating System", PHI 1999.

iii)Online Learning:

- [www.amazon.com/Unix Shell Programming-Applications.../dp/1852333081](http://www.amazon.com/Unix-Shell-Programming-Applications.../dp/1852333081)
- www.myreaders.info/01_Introduction_to_unix_programming.pdf