

Course code	Course Name	L-T-P - Credits	Year of Introduction
IT363	Unix Shell Programming	3-0-0-3	2016
Pre-requisites: IT 201 <i>Operating Systems</i>			
Course Objectives <ul style="list-style-type: none"> To learn the architecture UNIX and important features of UNIX. To familiarize the basic commands used in UNIX. To describe the TCP/IP networking tools used in UNIX. To familiarize the text processing utilities grep, sed, awk. To discuss the shell programming concept. To develop programs using shell script. 			
Syllabus Introduction to UNIX, Architecture, features, Basic commands, utilities, editors, UNIX file system, UNIX shells, Pipes, tee command, filters, process in Unix, TCP/IP networking tools, usage o grep and sed, programming with awk, shell programming basics, shell programming constructs, advanced concepts in shell programming			
Expected outcome . <ul style="list-style-type: none"> To familiarize the UNIX operating system and the utilities for solving computing problems in a shell programming environment. 			
Text Book: <ol style="list-style-type: none"> Sumitabha Das , “Unix the ultimate guide”, TMH. 2nd Edition. Behrouz A. Forouzan, Richard F. Gilberg, ” Unix and shell Programming.”, Cengage Learning 			
References: <ol style="list-style-type: none"> Kernighan and Pike, “Unix programming environment”, PHI. / Pearson Education Graham Glass, King Ables,” Unix for programmers and users”, 3rd edition, Pearson Education Maurice J. Bach, “The Design of the Unix Operating System”, First Edition, Pearson Education, 1999 			
Course Plan			
Module	Contents	Hours	Sem. Exam Marks
I	Introduction to Unix:- Architecture of Unix, Features of Unix , Introduction to unix file system, Basic Unix Commands – General-purpose utilities, vi editor	6	15%
II	The Unix file system – Parent-Child relationship – File types - File operations - File Permissions – File Ownership –File modification and access times – Directories – Directory permissions – File System and Inodes – Links and symbolic links – locating Files.	6	15%
FIRST INTERNAL EXAMINATION			
III	Introduction to Shells – Shell as command Processor – quotes, escape characters, wild cards – Redirection – pipes –tee command –variables –command substitution – filters	6	15%
IV	Concepts of process in Unix – process creation – process status – Background and foreground Jobs – Job Execution with low priority – Signals – Termination of process – Job control	8	15%

	TCP/IP Networking tools – talk, mesg, finger, telnet, rlogin, ftp, rcp, rsh – security for the Berkeley r-Utilities.		
SECOND INTERNAL EXAMINATION			
V	Filters using regular expressions – grep –sed – programming with awk – preliminaries, formatted output, variables, number processing, comparison operators, BEGIN and END sections, arrays, control flows, looping and functions.	8	20%
VI	Shell Programming – Shell variables – Shell scripts – positional parameters – Exit status of a command – logical operator – script termination – conditional branching – looping – sleep and wait - set and let commands – redirection – Exporting shell variables – Arrays – String handling – Conditional Parameter Substitution – Shell functions –eval and exec statements.	8	20%
END SEMESTER EXAM			

QUESTION PAPER PATTERN

Maximum Marks: 100

Exam Duration: 3 hours

The question paper shall consist of Part A, Part B and Part C.

Part A shall consist of three questions of 15 marks each uniformly covering Modules I and II. The student has to answer any two questions (15×2=30 marks).

Part B shall consist of three questions of 15 marks each uniformly covering Modules III and IV. The student has to answer any two questions (15×2=30 marks).

Part C shall consist of three questions of 20 marks each uniformly covering Modules V and VI. The student has to answer any two questions (20×2=40 marks).

Note : Each question can have a maximum of 4 subparts, if needed