

Five years Integrated M.Sc. (IT) (Semester - 4)						
Teaching Schedule						
060010410: CC12-Linux and Shell Programming						
Unit No.	Sub Unit No.	No. of Lecture (s)	Topics	Reference Chapter/Additional Reading	Teaching Methodology to be used Planned	Evaluation Parameter
1.		08	Introduction to LINUX Operating System, Architecture, Command Usage and File System			
	1.1	1	Features of UNIX/LINUX operating system	FOR #1 Page No. 3–4, 8–10 DAS#2 Page No. 25-27 VMG#1 Page No. 6-9	Chalk and Talk	
	1.2		UNIX/LINUX Structure: kernel and shell, Unix shell and its types			
	1.3	1	Basic commands, Accessing help in UNIX	FOR #1 Page No. 13–29 VMG#1 Page No. 13-30 DAS#3 (All pages)	Chalk and Talk, demonstration	
	1.4	2	Filenames and using wild cards	FOR#3 Page No. 65–68, 68-75 VMG#2 Page No. 55-58		Chalk and Talk
	1.5	1	File types, file i-node and it's structure			
	1.6	2	File system implementation: four block of file systems, directory content and links, directory hierarchy	FOR #3 Page No. 75–80		
	1.7	1	Operations and utilities for directory and files	FOR #3 Page No. 80-112		
2.		06	Security, File permissions and Job control			
	2.1	1	Users, group and ownership of files	FOR #4 Page No. 121–122	Chalk and Talk	
	2.2		Security levels and shell customization:		Chalk and Talk,	

			Environment variables		demonstration	
	2.3	2	File attribute, File permissions and changing file permissions	FOR #4 Page No. 126-130		
	2.4	1	User masks, changing ownership and groups	FOR #4 Page No. 131-134		
	2.5	2	Job control: process, jobs, foreground and background jobs, job commands, job scheduling	FOR #5 Page No. 165-170 DAS#9 (All Pages)	Chalk and Talk	Unit test -1
3.		10	Introduction to Shell			
	3.1	1	Shell types and Shell features: standard streams, redirection, Pipes	FOR #5 Page No. 146-153	Chalk and Talk, demonstration	
	3.2	2	Command execution: sequenced, grouped, chained and conditional command, exit status of command	FOR #5 Page No. 154-156 DAS#8 Page No. 154-169		
	3.3	2	Quotes and command substitution: backslash, double quotes and single quotes, Command substitutions and eval command	FOR #5 Page No. 159-165 FOR #13 Page No. 519-520 DAS#8 Page No. 152-154		
	3.4	1	Special files: trace file and terminal files	FOR #13 Page No. 502-504 DAS#8 Page No. 160-161		
	3.5	1	Shell variable: predefined variables and user defined variable, storing value in variable and accessing it, unsetting variables, storing filenames, content and command in variable, displaying value of variable	FOR #13 Page No. 504-509 DAS#8 Page No. 168		

	3.6	1	Input: reading word by word, line by line and from file	FOR #13 Page No. 517		
	3.7	1	Environmental variables, start-up scripts and command history	FOR #4 Page No. 521-527 FOR #13 Page No. 530-536		
	3.8	1	Command execution process	FOR #13 Page No. 536-537		
4.		06	Filters and communication utilities			
	4.1	1	Introduction to filters and pipes	FOR#6 (All pages) DAS#12 (All pages)	Chalk and Talk, demonstration	
	4.2	1	Concatenating files			
	4.3	1	Display beginning and end of files			
	4.4	2	Splitting files, cut, paste, sorting and translating characters			
	4.5	1	Files with duplicate lines, counting character, words and lines and comparing files			
	4.6		Communication utilities	FOR#7 (All pages)		
5.		10	The Bash/Korn Shell Programming			
	5.1	1	Basic script concept	FOR#14 Page No. 547-597 DAS#14 (All pages)	Chalk and Talk, demonstration	
	5.2	2	Expression			
	5.3	2	Decisions and repetition			
	5.4	1	Special parameters and variables			
	5.5	2	Changing positional parameters and argument validation			
	5.6	2	String manipulation	FOR#15 Page No. 622-628		Quiz - 1

6.		08	Regular Expression, grep, sed and awk			
	6.1	1	Regular expressions: atoms and operators	FOR#9 Page No. 331-343	Chalk and Talk, demonstration	
	6.2	1	grep: working of grep	FOR#10 Page No. 351-368		
	6.3	1	grep family	DAS#13 Page No. 245-254		
	6.4	2	awk: fields and records, awk script, operation, patterns and actions	FOR#12 Page No. 425-469		
	6.5	1	Associative array in awk	DAS#18 (All pages)		
	6.6	2	Functions in awk: string functions, mathematical functions and user defined functions			Unit test - 2
Text Book(s):						
1. Forouzan B. A., Gilberg R. R., UNIX and Shell Programming, Thomson [FOR]						
Reference Books:						
1. Das S., UNIX Concepts and Applications, McGraw-Hill [DAS] 2. Venkateshmurthy M. G., UNIX & Shell Programming, PEARSON [VMG] 3. Ramasatish A., UNIX Programming, SCITECH [RA] 4. Kanetkar Y. P., UNIX Shell Programming, BPB [KYP]						
Note: # denotes Chapter Number.						