

Bhoj Reddy Engineering College for Women: Hyderabad

Department of Information Technology

Lesson plan of faculty member for the academic year 2016–17

Class: III B Tech

Branch-Section: IT-A

Semester: I

Subject: Linux Programming

Lectures per week: 4+1 (Tutorial)

Lecture Number	Topics to be covered	Date (s)
UNIT – I: Linux Utilities		
1	File handling utilities	14 June2016
2	Security by file permissions, Process utilities, filters	16 June2016
3	Disk utilities, Networking commands	17 June2016
4	Text processing utilities and Backup utilities	18 June2016
5	Tutorial (G2, G1, G3)-Text processing utilities and Backup utilities	13, 15, 16 June 2016
6	sed – scripts, operation, addresses, commands, applications	21 June2016
7	awk – execution, fields and records, scripts, operation,	23 June2016
8	Awk -patterns, actions, associative arrays	24 June2016
9	strings and manipulation functions, using system commands (awk)	25 June2016
10	Tutorial(G2, G1, G3): Revision	20,22, 23 June 2016
11	Awk -patterns, actions, associative arrays, Introduction, shell responsibilities	28 June 2016
12	Pipes and input Redirection, output redirection,	30 June16
13	here documents, running a shell script	1 July 2016
14	The shell as a programming language, shell meta characters, file name substitution, shell variables, command substitution	2 July 2016
15	Tutorial (G2, G1, G3)-shell commands, the environment, quoting, test command, control structures	27, 29, 30 June 2016
16	Arithmetic in shell , shell script examples	5 July 2016
17	Interrupt processing, functions, debugging shell scripts	8 July 2016
18	Arithmetic in shell , shell script examples	9 July 2016
UNIT-II: Files and Directories		
19	Tutorial (G2)-Revision	4 July 2016
20	File Concept, File types, File System Structure	12 July 2016
21	File metadata-inodes,system calls for I/O operations -open, create Read,write,close,seek,dup2	14 July 2016
22	File status information-stat family-stat family,file and record locking	15 July 2016
23	Fcntl function,file permission & commands	16 July 2016
24	Tutorial (G12, G1, G3)-Revision of previous topics	11, 13, 14 July 2016
25	Lchown,fchown,links-soft links and hard links,Symlink,unlink	19 July 2016
26	Directories-creating,removing and changing directory commands.	21 July 2016
27	Obtaining current working directory-getcwd, directory contents	22 July 2016
28	opendir, reddenr, closedir, rewinddir functions	23 July 2016
29	Tutorial (G2, G1, G3): Revision	18, 20, 21 July 2016
UNIT-III: Processes and Signals		
30	Process concept ,Kernel support for process,	26 July 2016
31	process identification	28 July 2016
32	control - process creation, waiting for a process, process termination	29 July 2016
33	zombie process, orphan process, Process APIs	30 July 2016
34	Tutorial (G2, G1, G3)-Layout of a c program image in MM	25 , 27, 28 July 2016
35	process environment-environment list, variables	2 August 2016
36	c program image in main memory	4 August 2016
37	Revision	5 August 2016
38	Process groups, sessions and controlling terminal,	6 August 2016
39	differences between threads and processes	16 August 2016

40	Signals– Introduction to signals	18 August 2016
41	Signal generation and handling	19 August 2016
42	Kernel support for signals,	20 August 2016
43	Tutorial (G1, G3)-Signal function, unreliable signals	17, 18 August 2016
44	reliable signals, kill, raise , alarm, pause	23 August 2016
45	abort, sleep functions,	26 August 2016
UNIT-IV: Interprocess Communication, Message Queues, Semaphores		
46	Introduction to IPC	27 August 2016
47	Tutorial (G1, G2)-IPC between processes on a single computer	24, 22 August 2016
48	IPC between different processes	30 August 2016
49	Pipes creation IPC between unrelated processes using FIFO	1 September 2016
50	difference between pipes and fifos,	2 September 2016
51	popen and pclose library functions.	3 September 2016
52	Tutorial (G1, G2, G3)-pipes and fifos	29 , 31 August 2016, 1 September 2016
53	Message Queues-Kernel support for Message Queues.	3 September 2016
54	APIs for message queues.	6 September 2016
55	Client/ server example	8 September 2016
56	Semaphores- Kernel support for semaphores.	9 September 2016
57	Tutorial (G1, G3)-revision	10 September 2016
58	api's for semaphores	7, 8 September 2016
59	File locking with semaphores	13 September 2016
UNIT-V: Shared Memory and Sockets		
60	Shared memory- kernel support for shared memory	15 September 2016
61	APIs for shared memory	16 September 2016
62	shared memory example	7 September 2016
63	Tutorial (G1, G3)- Revision	14, 15 September 2016
64	sockets-introduction	20 September 2016
65	introduction to berkley sockets	2 September 2016
66	IPC over a network	23 September 2016
67	Socket system calls for connection oriented protocol	4 September 2016
68	Tutorial (G2, G2, G3)- Revision	19, 21, 22 September 2016
69	Socket system calls	27 September 2016
70	Client/server programs-single server- client connection	29 September 2016
71	Socket system calls for connection less protocol	1 October 2016
72	Tutorial (G2, G1, G3)-Revision	26, 28, 29 September 2016
73	Multiple simultaneous clients	4 October 2016
74	Tutorial (G2)- Socket options-setsock and fcntl system calls	3 October 2016
75	Socket system calls	27 October 2016
76	Comparison of IPC mechanisms	28 October 2016
77	Revision	29 October 2016
78	Tutorial (G3)- Discussion of previous papers	27 October 2016
79	Revision	1 November 2016
80	Revision	3 November 2016
81	Revision (G1, G2, G3)	2 November 2016, 31 October 2016, 3 November 2016

Text books:

1. Unix System Programming using C++, T.Chan, PHI.
2. Unix Concepts and Applications, 4th edition, Sumithab Das, TMH.
3. Unix Network Programmin , W.R.Stevens, PHI.

Name and signature of the faculty: Minhaj Begum ----

Name and signature of Head of the Department: G. Srinivasa Rao ----