

CSCS 408 - Linux Administration & Shell Scripting

UNIT I

The Linux Command Line : Starting with Linux Shells, Looking into the Linux kernel, Linux Distributions, Getting to the Shell, Terminal Emulation, The Linux Console, The GNOME Terminal, Starting the Shell, Basic bash Shell Commands, Filesystem Navigation, File Handling, More bash Shell Commands, Monitoring Programs, Monitoring Disk Space, Working with Data Files, Using Linux Environment Variables, Setting Environment Variables, Setting the PATH Environment Variable, Understanding Linux File Permissions, Linux Security, Changing Security Settings, Working with Editors-vim, emacs, KDE Family, GNOME. **(12 hours)**

UNIT II

Shell Scripting Basics : Basic Script Building, Creating a Script File, Using Variables, Exiting the Script, Using Structured Commands, The if-then-else Statement, Compound Condition Testing, Advanced if-then Features, The case Command, More Structured Commands, The for, while & until Commands, Looping on File Data, Command Line & Special Parameters, Handling User Input, Presenting Data, Script Control, Handling Signals, Running Scripts in Background Mode, Job Control, Being Nice, Creating Functions, Basic Script Functions, Function Recursion, Creating a Library, Introducing sed and gawk, Regular Expressions, Shell Scripts for Administrators, Monitoring System Statistics, Performing Backups. **(12 hours)**

UNIT III

Linux Administration : Where to Start, Linux's relationship to UNIX, Notation and typographical conventions, Where to go for information, Booting and Shutting Down, Bootstrapping, Using boot loaders: LILO and GRUB, Working with startup scripts, Rebooting and shutting down, Rootly Powers, The superuser, Becoming root, Other pseudo-users, Controlling Processes, Components of a process, The life cycle of a process, The Filesystem, File types, Adding New Users, Adding a Disk, Periodic Processes, Backups, Syslog and Log Files, Software and Configuration Management. **(12 hours)**

Text Books:

- (1). "Linux Command Line and Shell Scripting Bible", Richard Blum, Wiley Publishing, Inc, 2008.
- (2). "Linux Administration Handbook", Evi Nemeth, Garth Snyder & Trent R. Hein, Second Edition, Prentice Hall, 2006.