

Course Type	Course Code	Name of Course	L	T	P	Credit
DSC2	NCSC102	Introduction to Unix and Software Tools Lab	0	0	2	1

Course Objective

The objective of the lab course is to provide an introduction to *nix platforms to the students for day-to-day activities

Learning Outcomes

Upon successful completion of this course, students will:

- be able to install some Linux distribution on a physical or virtual machine
- be able to use common CLI commands and write small automation scripts over the Terminal App
- be able to use the git
- be able to configure network and debug common networking problems on a Linux-operated machine
- be able to create simple web pages
- be able to create simple LaTeX documents
- be able to install and use a Python interpreter for simple automation tasks

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1.	Creating a Virtual Machine, Installing Ubuntu/CentOS over a Virtual Machine, Taking snapshots of a Virtual Machine and restore it	4	Familiarisation with basic elements of a Virtual Machine and the Linux Installation Steps
2.	Create and manipulate text files using the Terminal, Introduction to VI and Nano Editors, Searching through files, Finding files, Create simple bash scripts	8	Familiarisation with the Shell environment
3.	Creating a local git repository, performing commits and pushing it to a remote repository	2	Using git for version control
4.	Configuring Static IPs and DNS Servers, Debugging common Network problems	4	Familiarisation with the Linux Networking
5.	Create static web pages and style them with CSS	4	Gaining first-hand experience of basic web development
6.	Using texlive to create a structured LaTeX document, Introduction to Overleaf	4	Familiarisation with the LaTeX ecosystem
7.	Using Python CLI to perform basic computation	2	Familiarisation with Python Command line Tools

Text Books:

1. Sumitabha Das : “Unix Concepts and Applications”, Latest Edition, McGraw –Hill
2. Ethan Watrall, Jeff Siarto: “Head First Web Design”, Latest Edition, O'Reilly Media, Inc.
3. Raju Gandhi: “Head First Git”, Latest Edition, O'Reilly Media, Inc.
4. Stefan Kottwitz: “LaTeX Beginners Guide”, Latest Edition, O'Reilly Media, Inc.
5. Alfredo Deza, Noah Gift: “Python Command Line Tools”, Latest Edition, O'Reilly Media, Inc.

Reference Books:

1. Brian W. Kernighan, and Rob Pike, “The Unix Programming Environment”, Latest Edition PHI
2. Martin C. Brown : “Python: The Complete Reference”, Latest Edition, McGraw –Hill