

## Introduction to Linux (TTLX2103)

### Overview

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This hands-on course provides you with an essentials-level foundation in core skills for using any version of Linux. This course focuses on essential skills that ordinary users might use daily when working with Linux.

### Prerequisite Comments

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This is an introductory-level course, designed for anyone wanting to learn Linux. Attendees should be comfortable working with computers and the command line, but no other specific skills are required to attend.

### Target Audience

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### Course Objectives

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This skills-focused course is about 50% lab to lecture ratio, combining expert instructor-led discussions with practical hands-on labs that emphasize current techniques, best practices and standards. Working in a hands-on lab environment, guided by our expert practitioner, attendees will explore

- The Design of Linux
- Basic Operations
- File System Basics
- Wildcards
- File and Directory Permissions
- Working with files
- Executing Programs
- Using find
- Filters and other useful commands
- The vi editor
- Customizing the user environment
- Networking/Communications
- Backups and archiving

### Course Outline

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#### 1 - The Design of Linux

- A brief history of Linux
- The Linux design philosophy
- Linux architecture

## 2 - Basic Operations

Logging in and out  
The general form of a Linux command  
Common commands  
Using man pages  
Essential commands

## 3 - File System Basics

The Linux directory structure  
Standard directories  
Relative and absolute pathnames  
Legal file names  
Navigating the filesystem

## 4 - Wildcards

Matching one character  
Matching many characters  
Shortcuts  
Wildcard gotchas  
Wildcards and ls

## 5 - File and Directory Permissions

Viewing permissions  
File permissions  
Directory permissions  
Setting defaults  
Changing permissions  
Keeping data secure

## 6 - Working with files

Viewing contents  
Identifying file contents  
Copying and moving  
Deleting  
Using symbolic links

## 7 - Executing Programs

- Redirecting STDOUT
- Redirecting STDERR
- Redirecting STDIN
- Creating pipelines
- Processes attributes
- Listing processes
- Killing processes
- Foreground & background processes

## 8 - Using find

- Syntax
- Finding by name, type, or size
- Combining tests
- Finding by size, owner, or timestamps
- Using xargs with find
- Other find options

## 9 - Filters and other useful commands

- What is a filter?
- cat: a generic filter
- head and tail
- grep
- sort
- wc
- other interesting filters

## 10 - The vi editor

- Why vi?
- Basic vi operations: navigating, adding, deleting
- Advanced operations: buffer management, search and replace, configuration options

## 11 - Customizing the user environment

- About shells
- Shell startup files
- Shell variables
- Search path
- Aliases
- Simple shell scripts

## 12 - Networking/Communications

Reading and sending mail  
Remote login  
Remote file transfer  
Other network utilities (ping, finger, etc)

## 13 - Backups and archiving

Checking space used or available  
Creating tar archives  
Viewing and extracting files from archives  
Compression utilities  
Working with windows

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