

**Price:** R6,900.00 excl. VAT  
**Duration:** 5 days  
**Code:** LINXF

# Linux Fundamentals for Programmers

## Description

This course introduces technically oriented people and programmers to the fundamentals of the Linux operating system. It covers topics from installation and system architecture to scripting languages and principles of Linux programming.

## Objectives

Delegates who complete this course will be able to:

- Install an arbitrary Linux distribution.
- Configure and administer a system for everyday use.
- Troubleshoot hardware and software issues.
- Understand and use command line shells.
- Perform basic bash shell scripting.
- Create and compile programs (mainly in C).

## Intended Audience

Technically oriented persons or programmers wanting to become familiar with the Linux operating system.

## Prerequisites

Some technical aptitude. Previous C programming experience or our Standard C Programming course will be an advantage.

## Course Contents

**Introduction** • Unix & Linux history. • Basic principles. • Terminology. • Hardware principles. • Networking hardware. • PC hard disk structure. • CD-ROMs & DVDs.

**Installation Principles** • Distribution types. • Planning, Preparation, Formatting. • Boot managers & dual-booting. • Application & daemons. • Dependencies & Package managers.

**System Architecture** • Kernel. • Device drivers. • Hardware discovery. • Plug and Play. • Bootup process. • File systems. • Linux Standard Base (LSB) and Linux Filesystem Standard (LFS). • Login shells. • X-Windows. • Xorg. • Window managers. • Remote X. • Run levels.

**Shells and Usage** • Shell concepts & versions. • Root. • Homes. • Bash. • Environment. • Finding help. • Command line. • File & directory manipulation. • Editors. • Standard Input / Output / Error. • Pipes; Redirection. • Hard & symbolic links. • Archiving & compression.

**Configuration and Administration** • Conventions. • Users, groups, passwords, permissions. • Networking. • Daemons. • Processes. • Monitoring. • Log files. • Runtime information. • NFS, Samba. • FTP; Telnet. • Secure Sockets Layer (SSL). • Remote login.

**Scripting Languages** • Shell scripts. • Variables, expressions, operators, iteration, selection, functions, comments. • File globbing. • Regular expressions. • I/O. • Other scripting languages or scriptable tools: sed, awk, perl, python. • Console control.

**Linux Programming Introduction** • GCC (GNU compiler). • Make files. • Compiling. • Debugging. • AutoConf and AutoMake. • Libraries. • Kernel compilation. • Processes & threads. • Socket programming. • X programming. • GUI libraries: wxWidgets, QT and GTK.