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## NDG Linux Essentials

### Scope and Sequence

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A course developed by NDG (Network Development Group), to help academic institutions introduce their students to Linux.

#### Target Audience

The Linux Essentials curriculum is designed for students who want to learn Linux.

#### Prerequisites

There are no prerequisites for this course.

#### Curriculum Description

This 16 chapter, 70 hour course covers the fundamentals of the Linux operating system and command line. The goal of this course is to provide academic institutions and students a “starting place” for learning the Linux operating system. Students who complete this course should understand Linux as an operating system, basic open source concepts, how Linux is used and the basics of the Linux command line.

This course implements a "practice as you read" approach to learning. Each learner has hands-on access to a Linux virtual machine to practice, explore and trial Linux command line concepts. Starting with Chapter Four, the learner is provided prescriptive step-by-step labs. These labs provide a learning environment where students interact with the Linux operating system and build on their skills and knowledge as they progress through the course.

#### Curriculum Objectives

Knowledge of Linux is a helpful skill for a wide variety of careers in business and Information Technology fields. Many emerging and growing career opportunities including big data, cloud computing, cyber security, information systems, networking, programming and software development (to name a few) require basic to advanced knowledge of the Linux command line. During the course, students will study the following objectives:

- Understand Linux as an operating system
- Explain some of the considerations for choosing an operating system
- Understand some of the basics of open source software and licensing
- Acquire basic knowledge of working with Linux
- Learn basic Linux command line skills
- Learn how to use help commands and navigate help systems when using Linux

- Basics of how to work with Linux files and directories
- Searching and extracting data from Linux files
- Basic understanding of the concept of scripting
- Familiarity with the components of desktop and server computers
- Knowing where data is stored on a Linux system
- Querying vital network settings for a Linux computer on a Local Area Network
- Identifying various types of users on a Linux system
- Creating users and groups on a Linux system
- Managing Linux file permissions and ownership
- Understanding special Linux directories and files

## Course Outline

Title of Learning Module / Chapter	LPI.ORG Linux Essentials Certificate Objectives Covered
<b>1 Introduction to Linux</b>	1.1 Linux Evolution and Popular Operating Systems
	4.1 Choosing an Operating System
<b>2 Open Source Applications and Licenses</b>	1.2 Major Open Source Applications
	1.3 Understanding Open Source Software and Licensing
<b>3 Using Linux</b>	1.4 ICT Skills and Working in Linux
<b>4 Command Line Skills</b>	2.1 Command Line Basics
<b>5 Getting Help</b>	2.2 Using the Command Line to Get Help
<b>6 Working with Files and Directories</b>	2.3 Using Directories and Listing Files
	2.4 Creating, Moving and Deleting Files
<b>7 Archiving and Compression</b>	3.1 Archiving Files on the Command Line
<b>8 Pipes, Redirection, and REGEX</b>	3.2 Searching and Extracting Data from Files
<b>9 Basic Scripting</b>	3.3 Turning Commands into a script
<b>10 Understanding Computer Hardware</b>	4.2 Understanding Computer Hardware
<b>11 Managing Packages and Processes</b>	4.3 Where Data is Stored
<b>12 Network Configuration</b>	4.4 Your Computer on the Network
<b>13 System and User Security</b>	5.1 Basic Security and Identifying User Types
<b>14 Managing Users and Groups</b>	5.2 Creating Users and Groups
<b>15 Ownership and Permissions</b>	5.3 Managing File Permissions and Ownership
<b>16 Special Permissions, Links and File Locations</b>	5.4 Special Directories and Files

### Minimum System Requirements

Students utilize a web browser to access the Linux Essentials content modules, lab exercises and virtual machines via Cisco NetSpace. The web based content viewer and Linux console viewer (virtual machine) require at least one of the following web browsers:

- Google Chrome 30+
- Safari 6.1+
- Mozilla Firefox 25+
- Internet Explorer 10+

### Industry Certificate

The Linux Essentials curriculum helps students prepare for the LPI [Linux Essentials Professional Development Certificate](#). The Linux Essentials Professional Development Certificate exam topics:

1. The Linux community and a career in open source
2. Finding your way on a Linux system
3. The power of the command line
4. The Linux operating system
5. Security and file permissions

For additional information about the LPI Linux Essentials Certificate of Achievement, review the LPI certification website <http://www.lpi.org/linux-certifications>.