


Course Outline	
COMP6132 Linux Operating System (2/2)	
Effective Date 01 February 2016	Study Program Computer Science Revision 0

1. Course Description

This course educates students on the installation of LINUX Operating System, discusses and performs the LINUX system administration, and writing LINUX Shell Scripts to facilitate the administration and the security of LINUX servers.

2. Graduate Competency

Each course in the study program contributes to the graduate competencies that are divided into employability and entrepreneurial skills and study program specific outcomes, in which students need to have demonstrated by the time they complete their course.

BINUS University employability and entrepreneurial skills consist of planning and organizing, problem solving and decision making, self management, team work, communication, and initiative and enterprise.

2.1. Employability and Entrepreneurial Skills

Aspect	Key Behaviour

2.2. Study Program Specific Outcomes

Study Program Specific Outcomes
Able to classify problems and to apply design and development principles for specific problems
Able to construct a solution by applying current technologies

3. Topics

- Introduction to Linux
- Shell Introduction and Filesystem
- Text Files and Running Processes
- Shell Scripts and System Administrator
- Managing User Account, Disk, and File Systems
- Server and Network Administration
- Services and Print Server
- Web and FTP Server
- Windows File Sharing and NFS
- Linux Troubleshooting
- Basic and Advanced Linux Security
- Securing Linux on a Network and SE Linux
- Linux on The Cloud

4. Learning Outcomes

On successful completion of this course, student will be able to:

- LO 1: Describe The Linux Operating System, its components, and services
- LO 2: Demonstrate using The Linux user interfaces and System Administration
- LO 3: Apply Security Techniques on Linux system and its services

5. Teaching And Learning Strategies

In this course, the lecturers might deploy several teaching learning strategies, including Discussion, Lecture, Demonstrate methods or procedures, Demonstrate problem-solving through case studies, Hands-on Practice, and Problem Solving.

6. Textbooks and Other Resources

6.1 Textbooks

1. Negus Christopher. (2015). *Linux Bible*. 09. Wiley. ISBN: 978-1118999875.

The book in the first list is a must to have for each student.

6.2 Other Resources

1. <http://www.youtube.com/watch?v=zAjiAT7IL-U>
2. <http://help.ubuntu.com/lts/serverguide/serverguide.pdf>

7. Schedule

Theory

Session/ Mode	Related LO	Topics	References
1 F2F	LO 1 LO 2	Introduction to Linux - Starting with Linux - Linux Desktop	- Introduction to Linux - Linux Bible, Chapter 1-2 - Linux Command Line: Day 1: UNIX and Linux, an Introduction, http://www.youtube.com/watch?v=zAjiAT7IL-U
2 F2F	LO 1 LO 2	Shell Introduction and Filesystem - Using the Shell - Moving around the Filesystem	- Shell Introduction and Filesystem - Linux Bible, Chapter 3-4
3 F2F	LO 1 LO 2	Text Files and Running Processes - Working with Text Files - Managing Running Processes	- Text Files and Running Processes - Linux Bible, Chapter 5-6
4 F2F	LO 1 LO 2	Shell Scripts and System Administrator - Writing Simple Shell Scripts - Learning System Administration - Installing Linux	- Shell Scripts and System Administrator - Linux Bible, Chapter 7-9
5 GSLC	LO 1 LO 2	Managing User Account, Disk, and File Systems - Getting and Managing Software - Managing User Accounts - Managing Disks and Filesystems	- Managing User Account, Disk, and File Systems - Linux Bible, Chapter 10-12
6 F2F	LO 1 LO 2	Server and Network Administration - Understanding Server Administration - Administering Networking	- Server and Network Administration - Linux Bible, Chapter 13-14
7 F2F	LO 1 LO 2	Services and Print Server - Starting and Stopping Services - Configuring a Print Server	- Services and Print Server - Linux Bible, Chapter 15-16
8 F2F	LO 1 LO 2	Web and FTP Server - Configuring a Web Server - Configuring an FTP Server	- Web and FTP Server - Linux Bible, Chapter 17-18
9 GSLC	LO 1 LO 2	Windows File Sharing and NFS - Configuring a Windows File Sharing (Samba) Server - Configuring an NFS File Server	- Windows File Sharing and NFS - Linux Bible, Chapter 19-20
10 F2F	LO 2	Linux Troubleshooting - Troubleshooting Linux System	- Linux Troubleshooting - Linux Bible, Chapters 21
11 F2F	LO 1 LO 2 LO 3	Basic and Advanced Linux Security - Understanding Basic Linux Security - Understanding Advanced Linux Security	- Basic and Advanced Linux Security - Linux Bible, Chapter 22-23

12 GSLC	LO 1 LO 2 LO 3	Securing Linux on a Network and SE Linux - Enhancing Linux Security with SELinux - Securing Linux on a Network	- Securing Linux on a Network and SE Linux - Linux Bible, Chapter 24-25
13 F2F	LO 1 LO 2 LO 3	Linux on The Cloud - Using Linux for Cloud Computing - Deploying Linux to the Cloud	- Linux on The Cloud - Linux Bible, Chapter 26-27

Practicum

Session/ Mode	Related LO	Topics	References
1 F2F	LO 1 LO 2	Computer Systems Overview - Management of Files and Folders - Introduction of Console in Linux - Introduction init - Understanding the Hierarchy of Files and Folders on Linux - Use the Manual on Linux - Search Files - Copy, Rename, Delete, and File Sharing - Using the vi Editor	- Computer Systems Overview - Linux Bible, Chapter 4 & 5
2 F2F	LO 1 LO 2	Operating Systems Overview - Accessing Devices with Mount and Unmount - Using du and df to see the use of Storage Space - Changing Permissions of a File - Redirection of Input, Output and Files - Implementing Pipes - Redirection - Grep - Find - Awk Language in Linux Console	- Operating Systems Overview - Linux Bible, Chapter 4 & 5
3 F2F	LO 1 LO 2	File System Introduction - Management Process - Looking at the Existing Process - Stopping a Process - Understanding the Process of Background and Foreground - Using Syntax kill, shutdown, ps, top, renice, fg, bg	- File System Introduction - Linux Bible, Chapter 6
4 F2F	LO 1 LO 2	Shell script - Variable - Selection - Looping - Display	- Shell Script - Linux Bible, Chapter 7
5 F2F	LO 1 LO 2	User Management & Review - Change password - Add and delete user - Add and delete group - Review	- User Management and Review - Linux Bible, Chapter 4-7, 11 - Ubuntu Server Guide, http://help.ubuntu.com/lts/serverguide/serverguide.pdf
6 F2F	LO 1 LO 2	Quiz I - Assignment	- Assignment - Linux Bible, Chapter 4-7 & 11 - Ubuntu Server Guide, http://help.ubuntu.com/lts/serverguide/serverguide.pdf
7 F2F	LO 1 LO 2 LO 3	Basic Network Configuration - IP Configuration - SSH configuration	- Basic Network Configuration - Linux Bible, chapter 14 - Ubuntu Server Guide, http://help.ubuntu.com/lts/

			verguide/serverguide.pdf
8 F2F	LO 1 LO 2 LO 3	Webserver Configuration - Apache Server - MySQL Server - PHP	- Webserver Configuration - Linux Bible, Chapter 17 - Ubuntu Server Guide, http://help.ubuntu.com/lts/serverguide/serverguide.pdf
9 F2F	LO 1 LO 2 LO 3	File Server Configuration - NFS - SAMBA - FTP	- File Server Configuration - Linux Bible, Chapter 18-20 - Negus Christopher. 2015. Linux Bible. WILEY. . ISBN:978-1118999875, http://help.ubuntu.com/lts/serverguide/serverguide.pdf
10 F2F	LO 3	Advanced Network Configuration - Squid Proxy	- Advanced Network Configuration - Linux Bible, Chapter 14 - Ubuntu Server Guide, http://help.ubuntu.com/lts/serverguide/serverguide.pdf
11 F2F	LO 1 LO 2 LO 3	Review - Review	- Review - Linux Bible, 14 & 17-20 - Ubuntu Server Guide, http://help.ubuntu.com/lts/serverguide/serverguide.pdf
12 F2F	LO 1 LO 2 LO 3	Quiz II - Assignment	- Review - Linux Bible, Chapter 14 & 17-20 - Ubuntu Server Guide, http://help.ubuntu.com/lts/serverguide/serverguide.pdf

8. Evaluation

Theory

Assessment Activity	Weight	Learning Outcomes		
		1	2	3
Assignment	20%	√	√	√
Mid Exam	30%	√	√	
Final Exam	50%	√	√	√

Practicum





Assessment Activity	Weight	Learning Outcomes		
		1	2	3
Assignment	100%	√	√	√

Final Evaluation Score

Aspects	Weight
Theory	70%
Practicum	30%

9. A. Assessment Rubric (Study Program Specific Outcomes)

LO	Indicators	Proficiency Level			
		Excellent (85 – 100)	Good (75 – 84)	Average (65 – 74)	Poor (<= 64)
LO 1	1.1. Ability to Describe The Linux Operating System	The descriptions are complete and clearly stated	The descriptions are complete but not clearly stated	The descriptions are incomplete but clearly stated	The descriptions are incomplete and not clearly stated
	1.2. Ability to Describe The Linux Operating System Components	The descriptions are complete and clearly stated	The descriptions are complete but not clearly stated	The descriptions are incomplete but clearly stated	The descriptions are incomplete and not clearly stated
	1.3. Ability to Describe The Linux Operating System Services	The descriptions are complete and clearly stated	The descriptions are complete but not clearly stated	The descriptions are incomplete but clearly stated	The descriptions are incomplete and not clearly stated
LO 2	2.1. Ability to Demonstrate using The Linux user interfaces	The Demonstration is appropriately presented without error or warning	The Demonstration is appropriately presented with some warnings	The Demonstration is appropriately presented with some warnings or minor errors	The Demonstration is inappropriately presented with a lot of warnings or errors
	2.2. Ability to Demonstrate system administration skill using Linux	The Demonstration is appropriately presented without error or warning	The Demonstration is appropriately presented with some warnings	The Demonstration is appropriately presented with some warnings or minor errors	The Demonstration is inappropriately presented with a lot of warnings or errors
LO 3	3.1. Ability to apply Security Techniques on Linux system and its services	The Application is appropriately presented without error or warning	The Application is appropriately presented with some warnings	The Application is appropriately presented with some warnings or minor errors	The Application is inappropriately presented with a lot of warnings or errors

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