



Faculty: Information Technology	
Department: Cybersecurity	Program: Bachelor
Academic Year: 2023/2024	Semester: 2nd

Course Plan

First: Course Information

Course No.: 1506343	Course Title: <i>Linux Operating System Security Fundamentals</i>	Credit Hours: 3	Theoretical: 2	Practical: 1
Prerequisite No. and Title: 150341 - <i>Networks and Information security</i>		Section No.: 1	Lecture Time: 9-10 (Sun, Tue, Thu)	
Level in JNQF	7			
Type Of Course:	<input type="checkbox"/> <i>Obligatory University Requirement</i> <input type="checkbox"/> <i>Elective University Requirement</i> <input type="checkbox"/> <i>Obligatory Faculty Requirement</i> <input type="checkbox"/> <i>Elective Faculty Requirement</i> <input checked="" type="checkbox"/> <i>Obligatory Specialization Requirement</i> <input type="checkbox"/> <i>Elective Specialization Requirement</i> <input type="checkbox"/> <i>Ancillary course</i>			
Type of Learning:	<input type="checkbox"/> <i>Face-to-Face Learning</i> <input checked="" type="checkbox"/> <i>Blended Learning (2 Face-to-Face + 1 Asynchronous)</i> <input type="checkbox"/> <i>Online Learning (2 Synchronous+ 1 Asynchronous)</i>			

Second: Instructor's Information

Course Coordinator					
Name: <i>Dr. Ala'a Al Sherideh</i>			Academic Rank: <i>Assistant Professor</i>		
Office Number: 104 B		Extension Number: 1426		Email: <i>asherideh@zu.edu.jo</i>	
Course Instructor					
Name: <i>Dr. Ala'a Al Sherideh</i>			Academic Rank: <i>Assistant Professor</i>		
Office Number: 104 B		Extension Number: 1426		Email: <i>asherideh@zu.edu.jo</i>	
Office Hours:	Sunday 12:00-1:00	Monday -	Tuesday 12:00-1:00	Wednesday -	Thursday 12:00-1:00

Third: Course Description

This course introduces students to a wide range of topics related to Linux administration; this includes the command line interface (CLI) and graphical user interface (GUI), as well as configuring networking on Linux machines, and managing access to files and directories. It also introduces the student to the security measures that can be taken in Linux to create a secure environment, such as controlling access to resources using access control lists (ACL) and managing and configuring the Linux firewall. It also introduces the student to Linux scripting to enable the student to automate tasks using shell scripts.

Fourth: Course Objectives

1. Introducing the student to the concepts, theories, principles and practices of Linux.
2. Developing the student's ability to deal with Linux.
3. Gaining a comprehensive understanding of the Linux operating system
4. To understand and make effective use of Linux utilities and shell scripting language to solve problems
5. Acquiring proficiency in using Linux commands and utilities
6. Learning how to manage system files and directories
7. Understand the various processes and scripting in Linux, as well as how to configure and manage Linux-based device.

Fifth: Learning Outcomes

<i>Level descriptor according to (JNQF)</i>	<i>CILOs Code</i>	<i>CILOs</i> If any CLO will not be assessed in the course, mark NA.	<i>Associate d PILOs Code</i> Choose one PILO for each CILO*	<i>Assessment method</i> Choose at least two methods
Knowledge	K1	Provide the students with the basic and advanced uses of Linux.	PK3	<ul style="list-style-type: none"> • Mid-term Exam • Final Exam
	K2	Understand the theory of Linux design and operation.	PK3	<ul style="list-style-type: none"> • Practice • Assignments • Mid-term Exam • Final Exam
	K3	Express the methodologies and techniques used to manipulate with Linux	PK3	<ul style="list-style-type: none"> • Mid-term Exam • Final Exam
	K4	Text editing in the Linux environment.	PK4	<ul style="list-style-type: none"> • Mid-term Exam • Final Exam
Skills	S1	Implement basic Linux tools	PS3	<ul style="list-style-type: none"> • Practice • Assignments • Mid-term Exam • Final Exam
	S2	Configure the Linux environment	PS3	<ul style="list-style-type: none"> • Practice • Assignments • Mid-term Exam • Final Exam
	S3	Students will be able to create file systems and directories and operate them	PS3	<ul style="list-style-type: none"> • Practice • Assignments • Mid-term Exam • Final Exam
	S4	Examine a number of Linux tools to system or network.	PS4	<ul style="list-style-type: none"> • Practice • Assignments • Mid-term Exam • Final Exam
	S5	Demonstrate a critical evaluation of an advanced topic with an independent project.	PS5	<ul style="list-style-type: none"> • Practice • Assignments • Mid-term Exam • Final Exam
Competencies	C1	Utilize different techniques for dealing with Linux	PC3	<ul style="list-style-type: none"> • Practice • Assignments
	C2	Develop effective communication skills with the students in the proper way to deliver the required skills and providing them with knowledge about Linux techniques and tools.	PC4	<ul style="list-style-type: none"> • Practice • Assignments

*CILOs: Course Intended Learning Outcomes; PILOs: Program Intended Learning Outcomes; For each CILO, the PILO could be the same or different.

Sixth: Learning Resources

Main Reference:	Linux Fundamentals		
Author: Richard Blum	Issue No.: 2th	Print:	Publication Year: 2022
Additional Sources and Websites:	<ul style="list-style-type: none"> Linux Fundamentals, Paul Cobbaut, 2016 . 		
Teaching Type:	<input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Laboratory <input type="checkbox"/> Workshop <input checked="" type="checkbox"/> MS Teams <input checked="" type="checkbox"/> Moodle		

Seventh: Course Structure

Week	Course Intended Teaching Outcomes (CILOs)	Topics	Teaching Procedures*	Teaching Methods**	References***
1	C2, K1	Syllabus overview Linux History of Linux	Face-to-Face	Lecture, in class Discussions	Designated Reference
	C2, K1	Watch the following 'Operating System' video. We will discuss this topic inside the lab.	Asynchronous	Video, Practice, Assignment	Related Web Pages
2	K1, K2	Virtualbox man pages	Face-to-Face	Lecture, in class Discussions	Designated Reference
	K1, K2	Watch the following 'Introduction to Linux' video. We will discuss this topic inside the lab.	Asynchronous	Video, Practice, Assignment	Related Web Pages
3	S2, K2, K3, K4	Working with directories Working with files	Face-to-Face	Lecture, in class Discussions	Designated Reference
	S2, K2, K3, K4	Reading material about Linux server and Windows server. We will discuss this topic inside the lab.	Asynchronous	Video, Practice, Assignment	Related Web Pages

4	S2, K2, K3, K4	Working with file contents the Linux file tree	Face-to-Face	Lecture, in class Discussions	
	S2, K2, K3, K4	Reading material about VirtualBox. Meaning, Working, Installation, and Uses. We will working on training students inside the lab on download the program and use it. (Please bring your flash memory)	Asynchronous	Video, Practice, Assignment	Related Web Pages
5	S2, K2, K3, K4	commands and arguments control operators	Face-to-Face	Lecture, in class Discussions	Designated Reference
	S2, K2, K3, K4	-Reading material about Working with directories. Then upload answering questions in assignment based on the read material. -Reading material about Working with file. Then upload answering questions in assignment based on the read material. - Assignment.	Asynchronous	Video, Practice, Assignment	Related Web Pages
6	S2, K2, K3, K4	introduction scripting shell history	Face-to-Face	Lecture, in class Discussions	Designated Reference
	S2, K2, K3, K4	Reading material about Disks and File systems. We will discuss this topic inside the lab.	Asynchronous	Video, Practice, Assignment	Related Web Pages
7	S2, K2, K3, K4	shell embedding and options shell variables	Face-to-Face	Lecture, in class Discussions	Designated Reference
	S2, K2, K3, K4	Watch the following 'Basic Commands and Directory Hierarchy' video. Summarize video and identify the important ideas and information,	Asynchronous	Video, Practice, Assignment	Related Web Pages

		then upload your own summary. -Assignment (summary).			
8	S2, K2, K3, K4	scripting loops scripting parameters	Face-to-Face	Lecture, in class Discussions	Designated Reference
	S2, K2, K3, K4	Reading material about User Environments in Linux. Then upload answering questions in assignment based on the read material. -Assignment.	Asynchronous	Video, Practice, Assignment	Related Web Pages
Midterm Exams					
9	S1, S3, K1, K2, K3, K4	more scripting regular expressions	Face-to-Face	Lecture, in class Discussions	Designated Reference
	S1, S3, K1, K2, K3, K4	Reading material about Shell Scripts. We will discuss this topic inside the lab	Asynchronous	Video, Practice, Assignment	Related Web Pages
10	S1, S3, K1, K2, K3, K4	user passwords Explaining The Boot Process	Face-to-Face	Lecture, in class Discussions	Designated Reference
	S1, S3, K1, K2, K3, K4	Reading material about System Configuration in Linux. We will discuss this topic	Asynchronous	Video, Practice, Assignment	Related Web Pages
11	S1, S3, K1, K2, K3, K4	Linux boot loaders	Face-to-Face	Lecture, in class Discussions	Designated Reference
	S1, S3, K1, K2, K3, K4	- Reading material about Understanding Your Network and Its Configuration. Then upload answering questions in assignment based on the read material.	Asynchronous	Video, Practice, Assignment	Related Web Pages
12	S1, S3, K1, K2, K3, K4	System recovery options	Face-to-Face	Lecture, in class Discussions	Designated Reference
	S4, S5, K1, K2, K3, K4	Reading material about ways to configure a network interface in Linux. Then upload answering	Asynchronous	Video, Practice, Assignment	Related Web Pages

		questions in assignment based on the read material. - Assignment			
13	S4, S5, K1, K2, K3, K4	Administering Users and Groups Adding Accounts	Face-to-Face	Lecture, in class Discussions	Designated Reference
	S4, S5, K1, K2, K3, K4	Reading material about Administering Users We will discuss this topic inside the lab.	Asynchronous	Video, Practice, Assignment	Related Web Pages
14	S4, S5, K1, K2, K3, K4	Managing Accounts Querying Access Status of Users	Face-to-Face	Lecture, in class Discussions	Designated Reference
	S4, S5, K1, K2, K3, K4	Pre-Final Exam discussion forum	Asynchronous	Video, Practice, Assignment	Related Web Pages
Final Exams					

*Teaching procedures: (Face-to-Face, synchronous, asynchronous).

** Teaching methods: (Lecture, video....).

*** Reference: (Pages of the book, recorded lecture, video....)

Eighth: Assessment Methods

Methods	Online Learning	Blended Learning	Face-To-Face Learning	Specific Course Output to be assessed										
				**If any CILO will not be assessed in the course, mark NA.										
				K1	K2	K3	K4	S1	S2	S3	S4	S5	C1	C2
First Exam														
Second Exam														
Mid-term Exam		30		✓	✓	✓	✓		✓					✓
Participation														
Asynchronous Activities		20		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Quizzes														
Assignments														
Group presentation														
Final Exam		50		✓	✓	✓	✓	✓	✓	✓	✓	✓		
Total out of 100		100												

Ninth: Course Policies

- All course policies are applied to all teaching patterns (online, blended, and face-to-face Learning) as follows:
 - a. Punctuality.
 - b. Participation and interaction.
 - c. Attendance and exams.
- Academic integrity: (cheating and plagiarism are prohibited).

Approval	Name	Date	Signature
Head of Department	Dr. Mohammad Rasmi AL-Mousa		
Faculty Dean	Prof. Dr. Mohammad Hassan		