Syrian Arab Republic		الجمهوريّة العربيّة السوريّة
Ministry of Higher Education	SVU الجامعـة الإفتراضيـة السوريـة SYRIAN VIRTUAL UNIVERSITY	وزارة التعليـم العالـــي
Syrian Virtual University		الجامعة الافتراضيّة السوريّة

Course Definition File for Linux Platform 2

1- Basic Information:

Course Name	**Linux Platform 2**
Course ID	IOS305
Contact Hours (Registered Sessions)	18
Contact Hours (Synchronized Sessions)	18
Mid Term Exam	NO
Exam	75
Registered Sessions Work Load	18
Synchronized Session Work Load	18
Credit Hours	6

2- Pre-Requisites:

Course	**ID**
Linux Platform 1	IOS203

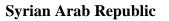## 3- Course General Objectives:

At the end of this course, the learner should:

- Continue exploring Linux operating system in advanced way that helps the student to understand it accurately and widely.
- Define boot sequence and deal with its kernel
- Manage and configure it as a server and configure (users and groups –all kinds of permissions – network services – system services – web services).
- Understand advanced file system techniques
- Troubleshoot system problems

4- Intended Learning Outcomes (ILO):

Code	Intended Learning Outcomes
ILO1	Understand boot sequence and control it.
ILO2	Learn how to deal with kernal
ILO3	Manage users and groups

ILO4	Configure Linux system to be connected to network	
ILO5	Dealing with network services as a client or server	
ILO6	Manage system services and control them	
ILO7	Web services	
ILO8	Advanced file system concepts	
ILO9	Troubleshooting system problems	

5- **Course Syllabus** (18 hours of total synchronized sessions;18 hours of total Recorded Sessions)

- **RS:** Recorded Sessions**; SS:** Synchronized Sessions**;**

ILO	Course Syllabus	RS	SS	Type	Additional Notes
ILO1 ILO2	• Discuss the boot sequence ● Understand GRUB's role ● Understand init's role • Understand the purpose and organization of the kernel ● Understand how to load and configure kernel modules. ● Know how to configure the kernel using /proc and sysctl ● Explore hardware devices available on the system		3	☒ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others	Practical exercises after each unit
ILO3	• Understand the purpose and organization of the kernel ● Understand how to load and configure kernel modules. ● Know how to configure the kernel using /proc and sysctl ● Explore hardware devices available on the system		1.5	☒ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others	
ILO4	• configure IP interfaces • setup routes • understand name resolution • setup IPv6		1.5	☒ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others	
ILO5	• Browse the web • Exchange email and instant messages		3	☒ Exercises ☒ Assignments ☐ Seminars	

	• Access a Linux system remotely • Transfer files between systems • Use network diagnostic tools • Describe the FTP service ● Explain Network File Sharing ● Describe the NFS service ● Describe the Samba service ● Use client tools with each service			☐ Projects ☐ Practices ☐ Others	
ILO6	• Understand the importance of time synchronization ● Configure System Logging ● remotely administer the system ● Automate tasks with cron • Understand how services are managed ● Learn common traits among services ● Describe Service Configuration Resources ● Implement Access Controls ● SELinux Overview ● SELinux Management		3	☐ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others	
ILO7	• Learn the major features of the Apache HTTP server ● Be able to configure important Apache parameters ● Understand proxy web servers		1.5	☐ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others	
ILO8	Learn the major features of the Apache HTTP server ● Be able to configure important Apache parameters ● Learn per-directory configuration ● Learn how to use CGI with Apache ● Identify key modules ● Understand proxy web servers Setup filesystem quotas ● Setup and manage software Raid devices ● Configure Logical Volumes ● setup LVM Snapshots		3	☐ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others	

	● perform backups				
ILO9	Develop a strategy for troubleshooting ● Fix problems in different areas of the Linux system ● Boot the system into various runlevels ● Use the Rescue environment		1.5	☐ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others	

6- Assessment Criteria (Related to ILOs)

ILO Code	ILO	Intended Results	Assessment Type				
			ISC	PW	Ex	PF2F	Rpt
ILO1	Understand boot sequence and control it.		X	X	X		
ILO2	Learn how to deal with kernal		X	X	X		
ILO3	Manage users and groups		X	X	X		
ILO4	Configure Linux system to be connected to network		X	X	X		
ILO5	Dealing with network services as a client or server		X	X	X		
ILO6	Manage system services and control them		X	X	X		
ILO7	Web services		X	X	X		
ILO8	Advanced file system concepts		X	X	X		
ILO9	Troubleshooting system problems		X	X	X		

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7- Practice Tools:

Tool Name	Description
VMware workstation – Linux iso image	Students should install VMware workstation or any equivalent software and then create a virtual machine with Linux CentOS distribution.

8- Main References

1- RH033 - Red Hat Linux Essentials 2- RH133 - Red Hat Linux System Administration 3- RH253 - Red Hat Enterprise Linux Network Services and Security Administration