



## **Course Definition File**

Syrian Arab Republic	 الجامعة الافتراضية السورية SYRIAN VIRTUAL UNIVERSITY	الجمهورية العربية السورية
Ministry of Higher Education		وزارة التعليم العالي
Syrian Virtual University		الجامعة الافتراضية السورية

## 1. Basic Information:

Course Name	Network Operating Systems
Course ID	IOS204
Contact Hours (Registered Sessions)	36
Contact Hours (Synchronized Sessions)	18
Mid Term Exam	NO
Exam	2
Registered Sessions Work Load	36
Synchronized Session Work Load	18
Credit Hours	6

## 2. Pre-Requisites:

Course	ID
Operating System	IOS101
Introduction to Network	INT101

## 3. Course General Objectives:

At the end of this course, the learner should understand the concepts of Network Operating Systems – NOS, and be able to identify and use main technologies related to the implementation of NOS components, and comprehend related issues and new trends of the subject.

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#### 4. Intended Learning Outcomes (ILO):

Learning Outcomes codes	Learning Outcomes
LO1	Understanding basic concepts of NOS and the server.
LO2	Identifying and using main technologies of NOS and related hardware
LO3	Accommodating related issues of NOS and its new trends.

#### 5. Course Content :

LO	Course Syllabus	Recorded Sessions	Synchronized Sessions	Type	Additional Notes
LO1	NOS	6	3	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	
LO2	NOS used technique	18	9	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	
LO3	Related issues and new	9	6	<input type="checkbox"/> Exercises	

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	trends.			<input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	
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## 6. Assessment Criteria (Related to ILOs):

LO Code	LO	Intended Results	Assessment Type				
			Interactive Synchronized Collaboration	Practice	Exams	Presentations And Face-to-Face Assessments	Reports
LO1	NOS		X	X	X		X
LO2	NOS used techniques		X	X	X		X
LO3	Related issues and new trends		X	X	X	X	X

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## 7. Course Syllabus (18 hours of total synchronized sessions):

LO	Chapter No	Chapter	Content
LO1	1	Introduction	<ol style="list-style-type: none"> <li>1. Defining Network Operating Systems</li> <li>2. Types of NOSs</li> <li>3. Characteristics Of NOSs</li> <li>4. Components of NOSs</li> <li>5. Usual working scenarios with NOSs</li> <li>6. Unusual working scenarios for NOS</li> <li>7. System Documentation</li> </ol>
LO1	2	Preparing the Server for Network Systems	<ol style="list-style-type: none"> <li>1. Serving a network system</li> <li>2. Server General Requirements</li> <li>3. Server Types</li> <li>4. Planning Server Installation Process</li> </ol>
LO1	3	Operating Systems	<ol style="list-style-type: none"> <li>1. What is an Operating System?</li> <li>2. Functions of Operating Systems</li> <li>3. Operating System Types</li> <li>4. Windows OS</li> <li>5. Linux OS</li> </ol>
LO2	4	Preparing Working Environment and Installing Server HW	<ol style="list-style-type: none"> <li>1. Preparing Working Environment</li> <li>2. Installation Process</li> <li>3. Installing Server Hardware</li> <li>4. SCSI Technique</li> </ol>
LO2	5	RAID	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Basic Concepts of RAID</li> </ol>

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			<ol style="list-style-type: none"> <li>3. RAID Levels</li> <li>4. Handling RAID Errors</li> </ol>
LO2	6	Networking Environment for OS	<ol style="list-style-type: none"> <li>1. Basic Principles of Computer Networks</li> <li>2. Networks Typology</li> <li>3. Layering Structure</li> <li>4. Most Used Standards &amp; Protocols</li> </ol>
LO2	7	Networks Hardware	<ol style="list-style-type: none"> <li>1. Ethernet</li> <li>2. Types of Networks' Cables</li> <li>3. Network Extensions</li> <li>4. Basic Network Components</li> <li>5. Structured Cabling Systems</li> </ol>
LO2	8	Storage Area Networks – SANs	<ol style="list-style-type: none"> <li>1. Network Storing Techniques</li> <li>2. Network Area Storage – SAN</li> <li>3. Fiber Channel Protocol – FCP</li> <li>4. SAN over IP</li> </ol>
LO2	9	Backups	<ol style="list-style-type: none"> <li>1. Data Repository</li> <li>2. Storage Media</li> <li>3. Selection &amp; Extraction of Data</li> <li>4. Backups Planning</li> <li>5. Backups Solutions</li> <li>6. Using iSCSI Protocol in Backups</li> </ol>
LO3	10	Network Systems Security	<ol style="list-style-type: none"> <li>1. Strategies of Building Secure Systems</li> <li>2. Firewalls</li> </ol>
LO3	11	Updating Network Systems and Troubleshooting	<ol style="list-style-type: none"> <li>1. Principles of Problem Handling</li> <li>2. Problem Handling Methodology</li> <li>3. Tools used in Problems Handling</li> <li>4. Handling Server Problems</li> </ol>

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LO3	12	Data Centers– DCs	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. General Structure Of DC</li> <li>3. Basis DCs Standards</li> <li>4. Networking Structure</li> <li>5. Cabling Structures in DCs</li> </ol>
LO3	13	Clouds & Virtualization	<ol style="list-style-type: none"> <li>1. The Cloud Concept</li> <li>2. Virtualization</li> </ol>
LO3	14	Disaster Recovery –DR	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Disasters Types</li> <li>3. Disaster Recovery Planning</li> <li>4. Alternative Work Sites</li> </ol>

## 8. Practice Tools:

Tool Name	Description
Virtual class	