



Module Specification

1. Factual information			
Module title	T216B: Cisco networking (CCNA)-B	Level	2
Module tutor	TBA	Credit value	30
Module type	Taught	Notional learning hours	8

2. Rationale for the module and its links with other modules

Cisco Systems are market leaders in supplying networking equipment for the internet. They also have a well-established educational programme for network professionals.

The Arab Open University offers the Cisco Certified Network Associate “CCNA” (ICND2) Version 5 curriculum, which provides the knowledge, understanding, and skills needed to configure a LAN/WAN using Cisco equipment.

The module is composed of two modules:

- Scaling Networks
- Connecting networks

3. Aims of the module

The module aims to:

- Provide the student with knowledge, understanding, and skills needed to configure a LAN/WAN using Cisco equipment.
- Provide the student with hands-on experience of configuring networks.

4. Pre-requisite modules or specified entry requirements

The student should have completed the study of the T216A module.

5. Intended learning outcomes	
A. Knowledge and understanding	Learning and teaching strategy
<p>After studying the module the student will be able to:</p> <p>A1. Describe the operations and benefits of the Spanning Tree Protocol (STP)</p> <p>A2. Describe the operations and benefits of link aggregation and Cisco VLAN Trunk Protocol (VTP)</p> <p>A3. Explain the operations and benefits of Open Shortest Path First (OSPF) protocol (single-area OSPF and multi-area OSPF)</p> <p>A4. Explain the operations and benefits of Enhanced Interior Gateway Routing Protocol (EIGRP)</p> <p>A5. Manage Cisco IOS Software licensing and configuration files</p> <p>A6. Describe the different WAN technologies and their benefits</p> <p>A7. Explain the operations and benefits of Network Address Translation (NAT).</p> <p>A8. Describe the operations and benefits of virtual private networks (VPNs) and tunneling</p>	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • TMA work • Module learning booklets and support material

B. Cognitive skills	Learning and teaching strategy
<p>After studying the module the student will be able to:</p> <p>B1. Troubleshoot networks</p> <p>B2. Design network architectures for borderless networks, data centers and virtualization, and collaboration technology and solutions.</p>	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • TMA work • Module learning booklets and support material

C. Practical and professional skills	Learning and teaching strategy
<p>After studying the module the student will be able to:</p> <p>C1. Configure and troubleshoot STP, VTP, RSTP, EtherChannel, First Hop Redundancy Protocol, basic operations of routers in a complex routed network for IPv4 and IPv6, advanced operations of routers for IPv4 and IPv6, OSPF, and EIGRP.</p> <p>C2. Configure and troubleshoot serial connections, broadband connections, NAT and IPSec tunnelling operations</p> <p>C3. Monitor and troubleshoot network operations using syslog, SNMP, and NetFlow</p>	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • TMA work • Module learning booklets and support material

D. Key transferable skills	Learning and teaching strategy
<p>After studying the module the student will be able to:</p> <p>D1. Configure and troubleshoot routers and switches. He will also resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. In addition, he will also develop the knowledge and skills needed to implement an EtherChannel.</p> <p>D2. Understand the selection criteria of network devices and WAN technologies to meet network requirements. Furthermore, he will learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Finally, he will also develop the knowledge and skills needed to implement IPSec and virtual private network (VPN) operations in a complex network.</p>	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • TMA work • Module learning booklets and support material

6. Indicative content.
<p>The study material is provided by Cisco at their website</p> <p>CCNA3- Scaling Networks</p> <ul style="list-style-type: none"> • CH1: Introduction to Scaling Networks • CH2: LAN Redundancy • CH3: Link Aggregation • CH4: Wireless LANs • CH5: Adjust and Troubleshoot Single-Area OSPF • CH6: Multiarea OSPF • CH7: EIGRP • CH8: EIGRP Advanced Configuration and Troubleshooting • CH9: IOS Imaging and Licensing

6. Indicative content.

CCNA4- Connecting networks

- CH1: Hierarchical Network Design
- CH2: Connecting to the WAN
- CH3: Point-to-Point Connections
- CH4: Frame Relay
- CH5: Network Address Translation for IPV4
- CH6: Broadband Solutions
- CH7: Securing Site-to-Site Connectivity
- CH8: Monitoring the Network
- CH9: Troubleshooting the Network

7. Assessment strategy, assessment methods and their relative weightings

TMA Work: 20%
MTA: 30%
Exam: 50%

8. Mapping of assessment tasks to learning outcomes

Assessment tasks	Learning Outcomes														
	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	C1	C2	C3	D1	D2
TMA	√	√	√	√	√				√	√	√				
MTA	√	√	√	√	√				√	√	√			√	
Final Exam				√	√	√	√	√	√	√		√	√		√

9. Teaching staff associated with the module		
Tutor's name and contact details		Contact hours
TBA		

10. Key reading list				
Author	Year	Title	Publisher	Location
Module adopted from OU, UK.	2013	CCNA Routing and Switching	Cisco	Cisco website www.netacad.com

11. Other indicative text (e.g. websites)
Learning Management System (http://lms.arabou.edu.kw/module)