

MODULE DESCRIPTOR

Module Title

Network Switching and Routing

Reference	CMM516	Version	2
Created	April 2018	SCQF Level	SCQF 11
Approved	July 2015	SCQF Points	15
Amended	June 2018	ECTS Points	7.5

Aims of Module

To introduce students to the architecture, structure, functions, components, and models of the Internet and other computer networks.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Select suitable equipment, protocols and configurations for use in small scale Local Area Networks and Wide Area Networks.
- 2 Diagnose problems and propose solutions to problems in equipment selection, protocol use and configurations in small scale Local Area Networks and Wide Area Networks.
- 3 Analyse and design IP addressing schemes for a small scale network.
- 4 Configure small scale Local Area Networks and Wide Area Networks.
- 5 Troubleshoot small scale Local Area Networks and Wide Area Networks.

Indicative Module Content

Configuring a Network Operating System. Application Layer Protocols and Services; Transport Layer Protocols (TCP and UDP); Network Layer Protocols. IP Addressing. Access Control Lists (ACLs). LAN Design. Switching Concepts and Configuration; Switch Security Management and Implementation. VLAN Security. Configuring a Router; Static Routing; Dynamic Routing. DHCP (Dynamic Host Configuration Protocol). Network Address Translation (NAT).

Module Delivery

Key concepts are introduced and illustrated through lectures and directed reading. The understanding of students is tested and further enhanced through lab sessions.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	44	44
Non-Contact Hours	106	106
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	150
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Practical Exam	Weighting:	50%	Outcomes Assessed:	1, 2, 3
Description:	Computer-based assessment.				

Component 2

Type:	Practical Exam	Weighting:	50%	Outcomes Assessed:	4, 5
Description:	Hands-on lab exercises.				

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

The calculation of the overall grade for this module is based on 50% weighting of C1 (shown on the X axis) and 50% weighting of C2 components (shown on the Y axis). An overall minimum grade D is required to pass the module.

		Practical Exam:						
		A	B	C	D	E	F	NS
Practical Exam:	A	A	A	B	B	C	E	
	B	A	B	B	C	C	E	
	C	B	B	C	C	D	E	
	D	B	C	C	D	D	E	
	E	C	C	D	D	E	E	
	F	E	E	E	E	E	F	
NS		Non-submission of work by published deadline or non-attendance for examination						

Module Requirements

Prerequisites for Module	None except Masters course entry requirements.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

- 1 STALLINGS, W., 2014. Data and Computer Communications, 10th Ed, New Jersey: Prentice Hall.
- 2 Cisco Networking Academy, 2016. Introduction to Networks Companion Guide. Cisco Press.
- 3 Cisco Networking Academy, 2016. Routing and Switching Essentials Companion Guide. Cisco Press.