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MODULE DESCRIPTOR

Module Title

Internet Security and Performance

Reference	CM1111	Version	1
Created	September 2020	SCQF Level	SCQF 7
Approved	March 2021	SCQF Points	15
Amended		ECTS Points	7.5

Aims of Module

To provide the student with an understanding of the security and performance issues associated with internet technologies.

Learning Outcomes for Module

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

1	Understand the basis of performance metrics used to assess the efficiency and effectiveness of a computer network.
2	Understand the function and operation of internet protocols.
3	Use software tools to capture and analyse network traffic.
4	Understand the impact of network performance.
5	Understand the cyber security risks of internet protocols.

Indicative Module Content

Performance issues related to: Physical layer: Serial communication, information theory, link capacity calculations, line coding, protocols. Data Link layer: Protocols, utilisation, error control. Network Protocols: BOOTP/DHCP, NAT, SNMP, POP3, ARP,RARP, IMAP, unicast, multicast, broadcast. HTTPS/HTTP, POP. Cyber Security issues, DDOS, MiTM, Spoofing, Encryption, Privacy.

Module Delivery

Key concepts are introduced and illustrated through lectures. The understanding of students is tested and further enhanced through interactive labs. In the laboratories the students will progress through a sequence of exercises to develop sufficient knowledge of the subject

Module Ref:	CM1111 v1

Indicative Student Workload	Full Time	Part Time
Contact Hours	36	N/A
Non-Contact Hours	114	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	N/A
Actual Placement hours for professional, statutory or regulatory body		

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:	3, 4, 5
Description:	A practical exam.				

Component 2

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	1, 2
Description:	A coursework which involves measuring and reporting on network performance.				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

The calculation of the overall grade for this module is based on 50% weighting of C1 and 50% weighting of C2. An overall minimum grade D is required to pass the module.

Practical Exam:

	Coursework: A	B	C	D	E	F	NS
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	CM1110 Introduction to Networking, or equivalent.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1	Chappell, Aragon, Combs. Troubleshooting with Wireshark: Locate the Source of Performance Problems, 2014
2	Goralski, The Illustrated Network: How TCP/IP Works in a Modern Network, 2017
3	TANENBAUM, A & WETHERALL, D (2013) Computer Networks. 5th Ed. Pearson