

## MODULE DESCRIPTOR

### Module Title

Internet Security and Performance

Reference	CM1111	Version	2
Created	June 2022	SCQF Level	SCQF 7
Approved	March 2021	SCQF Points	15
Amended	July 2022	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

**Indicative Student Workload**

	Full Time	Part Time
Contact Hours	40	N/A
Non-Contact Hours	110	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	N/A
<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:	Coursework	Weighting:	100%	Outcomes Assessed:	1, 2, 3, 4, 5
Description:	A coursework covering all module learning outcomes.				

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

This module is assessed on a pass/unsuccessful basis. The Module Grade is based on performance in Component 1 (coursework) as detailed below.

Module Grade	Minimum Requirements to achieve Module Grade:
<b>Pass</b>	Pass in C1.
<b>Fail</b>	Fail, i.e. unsuccessful, in C1.
<b>NS</b>	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