

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:
Pass	Pass in C1.
Fail	Fail, i.e. unsuccessful, in C1.
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