

# This Version is No Longer Current

The latest version of this module is available here

### **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:	CM111	1 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
TOTAL			N/A
Actual Placement hours for professional, statutory or regulatory boo	dy		

## **ASSESSMENT PLAN**

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

Component 1					
Туре:	Practical Exam	Weighting:	50%	Outcomes Assessed:	3, 4, 5
Description:	A practical exam.				
Component 2					
Туре:	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.

		Coursework:						
		Α	В	С	D	Е	F	NS
	Α	А	А	В	В	С	Е	
	В	А	В	В	С	С	Е	
	С	В	В	С	С	D	Е	
Practical Exam:	D	В	С	С	D	D	Е	
	Е	С	С	D	D	Е	Е	
	F	Е	Е	Е	Е	Е	F	
	NS	Non-s non-a	ubmis: ttendai	sion of nce for	work b examii	y publi nation	shed de	eadline or

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