MODULE DESCRIPTOR

Module Title

Wireless Networks

Reference	CM3107	Version	4
Created	June 2022	SCQF Level	SCQF 9
Approved	July 2016	SCQF Points	15
Amended	July 2022	ECTS Points	7.5

Aims of Module

To provide students with an understanding of the operation, implementation and management of different types of wireless networks.

Learning Outcomes for Module

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

1	Explain and understanding radio propagation, wireless communication challenges at the physical layers and the Data-Link Layers.
2	Understand the basic network architectures, technologies and standards such as wireless LANs, ad hoc networks and mesh networks.
3	Critically evaluate and assess the design, implementation and management of wireless networks.
4	Analyse and propose broad solutions for a range of wireless communication scenarios.
5	Identify network security threats and issues when designing and implementing a wireless network.

Indicative Module Content

Radio frequency propagation and interference; Power Budgets; Signal-to-noise ratio; Wireless media access protocols; Wireless LANs, PANs, and WANs; Ad-hoc and mesh networking; routing; Wireless sensor networks, Zigbee, time synchronised networks; Various cross-cutting themes, including energy, economics, security, resource efficiency.

Module Delivery

The module is taught using a structured programme of lectures, tutorials, practical exercises and student-centred learning.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	30	N/A
Non-Contact Hours	120	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:	Coursework	Weighting:	100%	Outcomes Assessed:	1, 2, 3, 4, 5
Description:	A coursework covering all learning outcomes.				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

The calculation of the overall grade for this module is based on 100% weighting of C1. An overall minimum grade of D is required to pass this module.

Module Grade	Minimum Requirements to achieve Module Grade:
A	The student needs to achieve an A in C1.
B	The student needs to achieve a B in C1.
C	The student needs to achieve a C in C1.
D	The student needs to achieve a D in C1.
E	The student needs to achieve an E in C1.
F	The student needs to achieve an F in C1.
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	CM2103 Routing and Switching, or equivalent.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1	BEARD, C. and STALLINGS, W., 2015. Wireless Communication Networks and Systems. 1st Ed. Pearson.
2	ROSHAN, P. and LEARY, J., 2009. 802.11 Wireless LAN Fundamentals. Cisco Press.
3	SMITH, C. and COLLINS, D., 2014. Wireless Networks. 3rd Ed. McGraw?Hill Education.
4	COLEMAN, D. D. and WESTCOTT. D. A.,. 2014. CWNA: Certified Wireless Network Administrator (Official Study Guide). 4th Ed. Sybex.
5	GAST. M. S., 2017.?802.11 Wireless Networks: The Definitive Guide: Enabling Mobility with Wi-Fi Networks. 3rd Ed. O'Reilly Media.
6	AKYILDIZ, I. F. and CAN VURAN, M., 2010. Wireless Sensor Networks. Wiley.