Module Descriptor

Title	Wireless Networking		
Session	2025/26	**Status**	Published
Code	COMP10023	**SCQF Level**	10
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Qi Wang		

Summary of Module

Wireless networking has become an integral part of everyday life as well as part of many business systems with increasing popularity and importance. This module covers the following key aspects of wireless networking technologies (with a focus on the data link layer and above):

Wireless applications chapter Mobility management chapter

Wireless medium access control chapter Wireless wide-area networks chapter Wireless local-area networks chapter

The mobile ad hoc networks and wireless sensor networks chapter Wireless mesh networks chapter

Undertaking this module will develop a range of graduate attributes. Knowledge in the principles behind the techniques will be reviewed and extended to current and future applications of the technology. Sourcing, reviewing and presenting current scientific literature will develop critical thinking and presentation skills. The module will discuss new research developing innovation, research thinking and consideration of ethical issues.

Module Delivery Method	**On-Campus**[1] ☐	**Hybrid**[2] ☒	**Online**[3] ☐	**Work -Based Learning**[4] ☐
Campuses for Module Delivery	☐ Ayr	☐ Lanarkshire	☐ Online / Distance Learning	

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

	☐ Dumfries		☐ London ☒ Paisley		☐ Other (specify)	
Terms for Module Delivery	Term 1	☐	Term 2	☒	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Demonstrate a critical understanding of the theory, concepts and principles of wireless networking.
L2	Investigate, analyse and define the requirements for an appropriate wireless-based network given an application scenario.
L3	N/A
L4	N/A
L5	N/A

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	**During completion of this module, there will be an opportunity to achieve core skills in:**
Knowledge and Understanding (K and U)	**SCQF 10** K & U of various wireless technologies especially of LAN
Practice: Applied Knowledge and Understanding	**SCQF 10** Knowledge of designing and integrating wireless and wired LANs and their security
Generic Cognitive skills	**SCQF 10** Students will learn how to bring together information from various sources so as to complete their laboratory tasks
Communication, ICT and Numeracy Skills	**SCQF 10** Working in interacting groups and compiling individual group reports students will develop communication skills as well as the ability to write technical reports and documentation
Autonomy, Accountability and Working with Others	**SCQF 10** Each student in each group will be responsible of finding and summarizing information about the assigned task. Students will elect a coordinator and develop a sense of accountability to the group members.

Prerequisites	**Module Code**	**Module Title**
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching

In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.

knowledge and skills required to confidently manage a Wireless Network. The lectures will introduce various types of wireless technologies in both communication and networking and develop the essential tasks involved in the design and implementation of wireless networks while the follow-on lab work will enable students to gain more insights through practice. The tutorial sessions will help consolidate both the lecture material and the skills practiced during the lab work.

Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	32
Tutorial / Synchronous Support Activity	8
Laboratory / Practical Demonstration / Workshop	8
Independent Study	152
Please select	
Please select	
TOTAL	200

Indicative Resources

The following materials form essential underpinning for the module content and ultimately for the learning outcomes:

IEEE Xplore Digital Library: https://ieeexplore.ieee.org/Xplore/home.jsp Module resources on myUWS

Wireshark software, https://www.wireshark.org/download.html Beyond5GHub, http://beyond5ghub.uws.ac.uk/

K. D. Wong, Fundamentals of Wireless Communication Engineering Technologies, Wiley, 2012 Internet access

(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements

In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time.

For the purposes of this module, academic engagement equates to the following:

The School of Computing, Engineering and Physical Sciences considers attendance and engagement to mean a commitment to attending, and engaging in, timetabled sessions. You will scan your attendance via the scanners each time you are on-campus and you will login to the VLE several times per week. Where you are unable to attend a timetabled learning session due to illness or other circumstance, you should notify the Programme Leader that

you cannot attend. Across the School an 80% attendance threshold is set. If you fall below this, you will be referred to the Student Success Team to see how we can best support your studies.

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. Aligned with the University's commitment to equality and diversity, this module supports equality of opportunity for students from all backgrounds and learning needs. Using the VLE, material will be presented electronically in formats that allow flexible access and manipulation of content. This module complies with University regulations and guidance on inclusive learning and teaching practice. This module has lab-based teaching and as such you are advised to speak to the Module Co-ordinator to ensure that specialist assistive equipment, support provision and adjustment to assessment practice can be put in place, in accordance with the University's policies and regulations.
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	**Computing**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Business & Applied Computing
Moderator	Duncan Thomson
External Examiner	R Khusainov
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	2.14

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Written Assignment 1 weighted at 60%
Assessment 2
Written Assignment 2 weighted at 40% respectively
Assessment 3
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed.

(ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Report of practical/ field/ clinical work	☒	☒	☐	☐	☐	60	1

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Case Study	☒	☒	☐	☐	☐	40	1

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	2 hours

Change Control

What	**When**	**Who**
Attendance and Engagement Procedure and Equality and Diversity	20/1/25	F.Valentine