Module Descriptor

Title	Business Data Communication and Networks		
Session	2025/26	**Status**	Published
Code	COMP11107	**SCQF Level**	11
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Raja M Ujjan		

Summary of Module

The module focuses on developing students' state-of-the-art capabilities and exposes them to feasibly contribute to the planning, design, development, acquisition, implementation, management, and evaluation of modern computer networks with underlying research-oriented theory and model development. VMWare Virtualisation, Cisco Packet Tracer, Wireshark Packet Analysis and SDN-based experiments on testbeds will be provided on-campus to improve the hands-on practical skills of students, and further up the variety of in-depth knowledge presented during lectures. Furthermore, this module complements the MSc Master Project by building students' understanding/abilities to design specifically Data Communication and Network models or network security models inbound with legal, ethical, and professional concerns.

The module evaluates and examines a wide range of ideas, theories, procedures, protocols, and technological advancements that support contemporary, technologically advanced business-related computer networking. Crucially, this module identifies Data Communication and Networks design, implementation, and associated utilising issues/gaps in business and industry. Additionally, there is an in-depth review of a wide range of TCP/IP stack protocols and networking technologies. Overall, state-of-the-art business-related trends in Data Communication and Networks and their influences on emerging innovations will be covered. Emerging communication protocols, Software Defined Networking (SDN), cloud computing and cloud-based services, optical and wireless networking, virtualization trends like VLANs and VPNs, cloud networking, next-generation networking, and cloud computing have been introduced, contextualised, and assessed in this context.

Module Delivery Method	**On-Campus**[1] ☒	**Hybrid**[2] ☐	**Online**[3] ☐	**Work -Based Learning**[4] ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☐ Lanarkshire ☒ London ☒ Paisley	☐ Online / Distance Learning ☐ 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 comprehensive/critical and systemic understanding of concepts, principles, protocols, and technologies that underpin the creation, operation, and management of contemporary business computer networks.
L2	Demonstrate professional abilities and practices in investigating, analysing and defining requirements for the successful introduction of appropriate and viable, business-driven, network-based solutions.
L3	Develop (simulation or graphical model) in designing and modelling business network protocols, and data communications with feasible requirements and management.
L4	Recognise the legal, professional, and ethical issues involved in the exploitation of network data acquisition, planning and management.
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 11** Students will learn an in-depth understanding of modern networking theories, ideas, protocols, models, and strategies, as well as how these are applied in business settings. An in-depth knowledge of how hardware-based networking devices and technologies work and are used when building for business settings.

[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

Practice: Applied Knowledge and Understanding	**SCQF 11** Students will gain an in-depth understanding of appropriate methodologies and techniques to design and model network-based, technology-driven solutions with a range of standard and specialised research skills, hardware/software tools, and development frameworks.
Generic Cognitive skills	**SCQF 11** Students will further up skills by utilising a range of reputable and latest sources by evaluating/completing business settings network solutions via written reports and laboratory tasks.
Communication, ICT and Numeracy Skills	**SCQF 11** Through collaborative work with group and tutorial activities, students will improve their communication skills with feasible reports and professional documentation with graphical presentation and TCP/IP-based modelling.
Autonomy, Accountability and Working with Others	**SCQF 11** Each student in group or solo activities will demonstrate and identify personal learning, critical thinking for producing standard and quality work within rigorous investigation, and sense of accountability.

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.	
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	24
Tutorial / Synchronous Support Activity	24
Independent Study	152
Please select	
Please select	
Please select	
TOTAL	200

Indicative Resources

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

"Computer Networks and Internets" - Douglas Comer; Pearson (2015)

"Data and Computer Communications" - William Stallings; Prentice Hall(2006)*

Business Data Communications and Networking, Alan Dennis and Alexandra Durcikova, Wiley, 2014, 12th edition

Please ensure the list is kept short and current. Essential resources should be included, broader resources should be kept for module handbooks / Aula VLE.

Resources should be listed in Right Harvard referencing style or agreed professional body deviation and in alphabetical order.

(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	Bikrant Koirala
External Examiner	TBC
Accreditation Details	BCS
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	1.1

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Assessment-1, each student will take the class test (40%), which will mainly focus on critical understanding/detailed knowledge of protocols, hardware and software related to business data communications covered during lectures and recommended readings.
Assessment 2
Assesment-2, each student will provide/demonstrate 5-minute presentations (10%) related to ethical and professional issues of networking hardware and software.
Assessment 3
Assessment-3, a group-based written coursework (50%) will be provided with a technical report comprised of a review and understanding of the latest technologies of hardware and software, students will also provide either a simulation-based network computer model or a graphical model.
(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**
Class Test	☒	☐	☐	☐	☐	40	

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Presentation	☐	☐	☐	☒	☐	10	

Component 3

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
Written coursework	☐	☒	☒	☐	☒		
Combined total for all components						100%	hours

Change Control

What	When	Who
Attendance Update & EDI Update	20/01/202	A Adamson