

# University of the West of Scotland

## Module Descriptor

Session: 2023/24

Last modified: 12/04/2023 19:24:13

Status: Published

**Title of Module: Business Data Communication and Networks**

<b>Code: COMP11107</b>	<b>SCQF Level: 11</b> (Scottish Credit and Qualifications Framework)	<b>Credit Points: 20</b>	<b>ECTS: 10</b> (European Credit Transfer Scheme)
<b>School:</b>	School of Computing, Engineering and Physical Sciences		
<b>Module Co-ordinator:</b>	Graeme A McRobbie		

### Summary of Module

Networks are built on a number of protocols operating in various layers. This module examines the functionality required in these layers, and allows students to understand some of the underlying theory and models. The investigation starts with the ideas of information and channel capacity, covers the physical layer concepts of media characteristics and encoding techniques, and then moves upwards, first examining media access and error control. The concepts of addressing and path determination are covered, along with redundancy and availability, and the provision of QoS and basic queueing theory. The module concludes with a brief examination of encryption and security protocols.

This module will work to develop a number of the key 'I am UWS' Graduate Attributes to make those who complete this module:

#### Universal

Critical Thinker  
Ethically-minded  
Research-minded

#### Work Ready

Problem-Solver  
Effective Communicator  
Ambitious

#### Successful

Autonomous  
Resilient  
Driven

### Module Delivery Method

Face-To-Face	Blended	Fully Online	HybridC	HybridO	Work-based Learning
				✓	

#### **Face-To-Face**

Term used to describe the traditional classroom environment where the students and the lecturer meet synchronously in the same room for the whole provision.

#### **Blended**

A mode of delivery of a module or a programme that involves online and face-to-face delivery of learning, teaching and assessment activities, student support and feedback. A programme may be considered "blended" if it includes a combination of face-to-face, online and blended modules. If an online programme has any compulsory face-to-face and campus elements it must be described as blended with clearly articulated delivery information to manage student expectations

#### **Fully Online**

Instruction that is solely delivered by web-based or internet-based technologies. This term is used to describe the previously used terms distance learning and e learning.

#### **HybridC**

Online with mandatory face-to-face learning on Campus

**HybridO**

Online with optional face-to-face learning on Campus

**Work-based Learning**

Learning activities where the main location for the learning experience is in the workplace.

**Campus(es) for Module Delivery**

The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit)

Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
✓				✓		

**Term(s) for Module Delivery**

(Provided viable student numbers permit).

Term 1	✓	Term 2	✓	Term 3	✓
--------	---	--------	---	--------	---

**Learning Outcomes: (maximum of 5 statements)**

On successful completion of this module the student will be able to:

- L1. Demonstrate a critical understanding of the design of network protocols
- L2. Demonstrate a detailed knowledge of an area of data communications
- L3. Use numerical and graphical methods to analyse network performance

**Employability Skills and Personal Development Planning (PDP) Skills**

<b>SCQF Headings</b>	During completion of this module, there will be an opportunity to achieve core skills in:
Knowledge and Understanding (K and U)	SCQF Level 11. A detailed understanding of the operation of computer networks. A detailed knowledge of number of commonly used networking protocols
Practice: Applied Knowledge and Understanding	SCQF Level 11. Execute a defined project involving research, development or investigation and identify and implement relevant outcomes
Generic Cognitive skills	SCQF Level 11. Use of information from a range of sources, including standards documents, when evaluating network protocols
Communication, ICT and Numeracy Skills	SCQF Level 11. Use of basic mathematics and graphs to illustrate and calculate network performance communicating technical information concisely to a technical audience
Autonomy, Accountability and Working with others	SCQF Level 11. Divide and manage work within a peer group

<b>Pre-requisites:</b>	Before undertaking this module the student should have undertaken the following:	
	<b>Module Code:</b>	<b>Module Title:</b>
	<b>Other:</b>	
<b>Co-requisites</b>	<b>Module Code:</b>	<b>Module Title:</b>

\* Indicates that module descriptor is not published.

<b>Learning and Teaching</b>	
<b>Learning Activities</b> During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	<b>Student Learning Hours</b> (Normally totalling 200 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
	200 Hours Total

<b>**Indicative Resources: (eg. Core text, journals, internet access)</b>
<p>The following materials form essential underpinning for the module content and ultimately for the learning outcomes:</p> <p>"Computer Networks" - Andrew S Tanenbaum; Prentice Hall (2003)*</p> <p>"Data and Computer Communications" - William Stallings; Prentice Hall(2006)*</p> <p>"Computer Networking and the Internet" - Fred Halsall; Addison Wesley(2005)*</p> <p>"The Good Sciences Study Guide" - Northedge, Thomas, Lane &amp; Peasgood; Open University (1997)*</p> <p>"Computer Networks and Internets" - Douglas Comer; Pearson (2015)</p> <p>"Interconnections" - Radia Perlman (1999)*</p>
(**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)

<b>Engagement Requirements</b>
In line with the Academic Engagement Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on the relevant learning platform, and complete assessments and submit these on time. Please refer to the Academic Engagement Procedure at the following link: <a href="#">Academic engagement procedure</a>

## Supplemental Information

<b>Programme Board</b>	Computing
<b>Assessment Results (Pass/Fail)</b>	No
<b>Subject Panel</b>	Applied and Business Computing
<b>Moderator</b>	tbc
<b>External Examiner</b>	tbc
<b>Accreditation Details</b>	pending
<b>Changes/Version Number</b>	1

### Assessment: (also refer to Assessment Outcomes Grids below)

A written coursework (50%) will allow students to demonstrate their abilities in using a range of sources, including standards, to research and present an area of data communications.

A second coursework (50%) undertaken in small groups will allow the student to demonstrate their understanding of a range of network protocols, use mathematical models and graphs in the context of computer networks, and divide and manage work within a team. 20 of the 50 marks available will be based on the student's performance managing the group work, including up to 10 marks based on summative peer assessment. (Students will assess the contributions made by fellow group members using a provided grading rubric. Grades will be determined for each student by taking the median score given by their peers.)

(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 Handbook.)

### Assessment Outcome Grids (Footnote A.)

#### Component 1

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Review/ Article/ Critique/ Paper		✓		50	0

#### Component 2

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Case study	✓	✓	✓	50	0
<b>Combined Total For All Components</b>				100%	0 hours

#### Footnotes

A. Referred to within Assessment Section above

B. Identified in the Learning Outcome Section above

#### Note(s):

- More than one assessment method can be used to assess individual learning outcomes.
- Schools are responsible for determining student contact hours. Please refer to University Policy on contact hours (extract contained within section 10 of the Module Descriptor guidance note).

This will normally be variable across Schools, dependent on Programmes &/or Professional requirements.

## **Equality and Diversity**

### **UWS Equality and Diversity Policy**

(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)