University of the West of Scotland

Undergraduate Programme Specification

Session: 2023/24 Last Modified: 07/02/24 Status: Published

		T	
1	Named Award Title:	BSc (Hons) Com	puter Networking
2	Award Title for	BSc Honours Co	mputer Networking
	Each Award: 1	BSc Honours Co	mputer Networking (Sandwich)
		BSc Computer N	letworking
			letworking (Sandwich)
		DipHE Computer	
		CertHE Compute	er Networking
3	Date of Validation	March 2020 (mo	st recent approval)
	/ Approval:	Maron 2020 (mo	
BC	Details of		
S4	Cohorts Applies to:	All student 2020	onwards
5	Awarding Institution/Body:	University of th	e West of Scotland
6	Tooching	University of the	e West of Scotland
	Teaching		
	Institution(s) ² :	New College La	narkshire (collaborative, L9 only)
7	Language of Instru	ction &	English
	Examination:		
8	Award	BCS	
	Accredited By:		
	Accredited by.		
9a		6 years full-time	e, 8 years part-time. Please note that part-time
	Maximum Period	students wishin	g BCS Accreditation must complete the course
	of Registration:	within 6 years.	1
		Authorised Inter	ruption Guidance notes (uws.ac.uk)
9b	Duration of		ars; Part Time – 8 years; With Placement
	Study:	(compulsory) – 5	
10	Mode of Study:	Full Time	•
		Part Time	
11	Campus:	Paisley	
	•	,	
		New College Lar	narkshire (Cumbernauld campus)
12	School:	•	gineering & Physical Sciences
13	Programme	Applied Compu	
	Board:		-

 $^{^{\}rm 1}$ Include main award and all exit awards e.g. BA / BSc / BEng / DipHE / CertHE

² University of the West of Scotland and include any collaborative partner institutions involved in delivery.

14	Programme	Duncan Thomson
	Leader:	

15. Admission Criteria

Candidates must be able to satisfy the general admission requirements of the University of the West of Scotland as specified in Chapter 2 of the University Regulatory Framework together with the following programme requirements:

SQA National Qualifications:

Standard Entry Requirements: ABBB (114 UCAS Tariff points) including Higher Maths OR Computing Science OR equivalent.

Minimum Entry Requirements: BBBB (108 UCAS Tariff points) including Higher Maths OR Computing Science OR equivalent.

Also including Maths and English at least at Intermediate 2 / National 5.

or GCE

A Levels: BBC (112 UCAS Tariff points) including Maths OR Computing Science OR equivalent (112 UCAS Tariff points). Also Maths and English at least at GCSE.

or SQA National Qualifications/Edexcel Foundation

An appropriate HNC/HND award.

Year 2 entry with an HND with an 'C' in the Graded Unit.

Year 3 entry with at least a 'B' in the Graded Unit.

The level of entry and/or credit awarded being subject to the content of the HN programme.

Other Required Qualifications/Experience

Applicants may also be considered with other academic, vocational or professional qualifications deemed to be equivalent.

Further desirable skills pre-application (i.e. to satisfy additional PSRB requirements or other)

Students should have a basic knowledge of computers.

16 General Overview

The growth in use of the Internet and the resulting wide range of network-connected devices and services have radically altered the way individuals and organisations communicate and conduct business. Such technologies have transformed, and will continue to transform, our lives.

There is a growing demand for skilled personnel who are able to design, implement and maintain network infrastructure for large, medium and small enterprises, as well as organisations in the public and third sector.

The Computer Networking programme is designed to give you experience in general computing, along with the skills and knowledge required to administer systems, build and troubleshoot networks, and adapt to new technologies which are continually developing in this fast-moving area.

The Computer Networking programme is available as a Single degree programme with options (subject to timetabling constraints).

The BSc (Hons) Computer Networking is recognised by the British Computer Society (BCS) fully meeting the educational requirements for Chartered IT Professional registration.

There are opportunities for both gaining a sandwich degree through a full-time placement lasting for a full academic session and for shorter part-time placements in second and third year.

Students with an Honours degree may consider entry to Masters degrees in specialisms of computing or telecommunications, or postgraduate research.

The teaching, learning and assessment strategy is designed to help students master the learning outcomes of the programme. Many of the learning outcomes of the programme are practical in nature and a large proportion of class time is spent in computing laboratories engaging with appropriate hardware and software acquiring practical knowledge and skills through a variety of activities. The theoretical understanding underpinning the subject is mainly engendered through lectures, tutorials, seminars and individual study. The practical classes reinforce this knowledge and provide an opportunity to develop and demonstrate practical skills applying this knowledge. Students will be required to work both individually and in groups. Students are expected to undertake independent study to supplement and consolidate what is taught in formal classes. The teaching is supported by the University's Virtual Learning Environment.

Knowledge and understanding is mostly assessed through class tests, exams or written work. The applied knowledge skills are assessed through in-class demonstrations, assessments, implementation exercises, or reflective logs. Many assessments provide opportunities for students to develop their written and verbal communication and organisational skills, with increasing levels of autonomy expected as the student progresses through the course. Most

modules use a combination of assessment approaches appropriate to the learning outcomes to be demonstrated.

17 Graduate Attributes, Employability & Personal Development Planning

Graduates of the programme will be **U**niversal, **W**ork-ready and **S**uccessful across the three dimensions, academic, personal and professional which encapsulate the breadth of the learning experience at University level. The programme aims to develop the student's intellectual and imaginative capabilities, professional understanding and judgement, problem-solving and communications skills, and ability to work as an effective team member.

During the course of the programme, students will have opportunities to develop their employability skills in the area of computer networking, and to meet a number of potential employers through, for example, programme, division, school, or wider university events.

The programme has 4 strands of Personal Development Planning:

- Each student will be assigned a personal tutor (their Year Leader) with whom they will be expected to meet each term
- One module at each level is associated with the aims of personal development (COMP07067, COMP08053/WRKB08001, COMP09093 and COMP10034)
- A number of events related to employability (see above)
- The opportunity to develop a portfolio of work using the University's ePortfolio system (Mahara)

Work Based Learning/Placement Details

There are a range of opportunities for work-based learning within the programme.

There is an opportunity for second-year students to undertake the module COMP08063 Work-Related Learning (Comp) module while undertaking a part time placement in a company in the second trimester. Continuing third year students may choose to take the COMP09016 Placement Project (Computing) as an optional module to continue this work.

An alternative is a thick sandwich either between L9 and L10 or (less frequently) between L8 and L9 where a placement of at least 36 weeks duration is undertaken on a full-time basis, leading to a sandwich award. The 40-credit, module must be agreed and documented according to the COMP0001 Sandwich Placement: Computing module descriptor for this option.

Honours year student in appropriate full time employment may, in consultation with the programme leader, take either WRKB10001 (WBL 4 – Industrial

Project (40 Point)) or WRKB10002 (WBL 4 – Industrial Project (20 Point)) to replace up to 2 core modules, provided the learning outcomes of the Honours year are met.

Note that participation in the Work-Related Learning, Placement Project and Sandwich Placement modules is subject to the availability of suitable placements with external bodies.

19 Attendance and Engagement

In line with the <u>Student Attendance and Engagement Procedure</u>, 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 VLE, and complete assessments and submit these on time.

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

Students are expected to attend their timetabled classes and to engage fully with the learning activities which form each module. An attendance level of 80% is generally expected across all modules.

20 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.

The BSc (Hons) Computer Networking involves a number of modules which require use to basic computing hardware or software which may not be fully accessible to all. Prospective students with physical disabilities which might limit their access to such systems should consult with the Programme Leader before enrolling on this programme, and should liaise with academic staff as appropriate when studying a module using such systems.

Programme structures and requirements, SCQF level, term, module name and code, credits and awards (<u>Chapter 1, Regulatory Framework</u>)

Learning Outcomes (Maximum of 5 per heading)

Outcomes should incorporate those applicable in the relevant QAA Benchmark statements.

Please ensure that Learning Outcomes are appropriate for the level of study. Further information is available via SCQF: https://scqf.org.uk/support/support-for-educators-and-advisers/support-for-colleges-heis/ and a Level Descriptors tool is available (https://support-for-colleges-heis/ and a Level Descriptors tool is available (https://scqf.org.uk/support/support-for-educators-and-advisers/support-for-colleges-heis/ and a Level Descriptors tool is available (Scottish Credit and Qualifications Framework) and ensure appropriate cognisance of Chapter 1, Regulatory Framework. https://www.uws.ac.uk/media/6514/regulatory-framework-2023-2024.pdf

	SCQF LEVEL 7 Learning Outcomes (Maximum of 5 per heading)
	Knowledge and Understanding
A1	Demonstrate an understanding of computer network theory and protocol operation.
A2	Demonstrate an understanding of the basic principles and techniques of web development.
А3	Demonstrate knowledge of the fundamental concepts of software development.
A4	Demonstrate an understanding of the internal structure and operation of computer systems.
	Practice - Applied Knowledge and Understanding
B1	Design and implement a simple computer network.
В2	Develop and publish a web site using a range of technologies.
В3	Design and implement a basic computer program.
В4	Compare and contrast operating system software.
	Communication, ICT and Numeracy Skills
C 1	Demonstrate the ability to communicate ideas both verbally and in writing.
C2	Produce a reflective account of learning and personal development planning.
С3	Use standard PC applications to process and manipulate a variety of information and data.
C4	Work with integers in a variety of bases (binary, hexadecimal and decimal).
	Generic Cognitive Skills - Problem Solving, Analysis, Evaluation
D1	Troubleshoot problems in a simple computer network.
D2	Select appropriate tools and techniques for tackling a specified networking task.
	Autonomy, Accountability and Working With Others
E1	Demonstrate an understanding of project management fundamentals and terminology.
E2	Demonstrate an understanding of personal development and awareness of professionalism.

Learning Outcomes - Level 7 Core Modules

SCQF	Module Code	Module Name	Crodit	Т	er	m	Factnetes
Level	Wodule Code	Module Name	Credit	1	2	3	Footnotes
7	COMP07009	Introduction to Web Development	20	>			
7	COMP07067	Professional Development in Computing	10	√			
7	COMP07027	Introduction to Programming	20	>	√		1
7	COMP07061	Computer Systems	20	>			
7	COMP07012	CCNA1: Introduction to Networks	20	>			
7	МАТН070	Mathematics for Computing	10	✓			

Footnotes for Core Modules:

1: Long thin module taught through T1 and T2.

Learning Outcomes - Level 7 Optional Modules

•	Module	Module Name	Credit	Т	err	n	Footnotes
Level	Code	Noutre Name	Credit	1	2	3	rootilotes
7	COMP07063	Business Technology Environment	20		✓		

Footnotes for option modules

Or any other module from within Computing, or the wider university, subject to prerequisite and timetabling constraints

22 a	Level 7 Criteria for Progression and Award
	In line with the Regulatory Framework, for the (exit) award of CertHE Computer Networking, at least 120 credit points must be achieved, including all core modules listed above.
	Students not meeting the core module requirements, but with the requisite 120

credits may be eligible for the (exit) award of CertHE Information Technology.

Distinction will be awarded in line with University Regulations and no imported credit can be used. (Regulations 3.35 & 3.26)

Links: <u>UWS Regulatory Framework</u>; and <u>Student Experience Policy Statement</u>.

[click here to add detail]

	Level 8 Learning Outcomes (Maximum of 5 per heading)
	Knowledge and Understanding
A1	Demonstrate a detailed knowledge of routing protocols in TCP/IP networks.
A2	Demonstrate understanding of routing and switching in computer networks.
А3	Demonstrate an understanding of operating systems concepts.
A4	Demonstrate an understanding of relational database theory.
	Practice - Applied Knowledge and Understanding
B1	Design and implement a computer network using routers and switches.
B2	Demonstrate the ability to work with subnet masks for routing and access control.
В3	Perform basic operating system administration tasks.
В4	Design and implement a relational database to a specification.
	Communication, ICT and Numeracy Skills
C1	Utilise a database to store and retrieve information effectively.
C2	Work within a range of command-line base operating environments
	Generic Cognitive Skills - Problem Solving, Analysis, Evaluation
D1	Select an appropriate routing protocol based on network requirements.
D2	Locate and correct problems in a computer network.
	Autonomy, Accountability and Working With Others
E1	Work effectively within a team.

E2 Work under instruction to configure a computer system.

Learning Outcomes - Level 8 Core Modules

SCQF	Bandula Cada	Madula Nama	Cuadit	Т	err	n	Factoria
Level	Module Code	Module Name	Credit	1	2	3	Footnotes
8	COMP08002	Database Development	20	>			
8	COMP08074	Operating Systems	20	<			
8	COMP08097	CCNA2: Switching, Routing & Wireless Essentials	20	>			
8	COMP08098	CCNA3: Enterprise Networks, Security & Automation	20		\		
		Plus EITHER of the following module	es				
8	COMP08053	WBL 2 - Group Project (20 point)	20		\		1
8	WRKB08002	WBL 2 - Work Placement (20 point)	20		<		1

Footnotes for Core Modules:

1 At least one of these modules **MUST** be taken; Students **MAY** take both (taking one in place of an option module below)

Learning Outcomes - Level 8 Optional Modules

SCQF	Module Code	Module Name	Credit	Т	err	n	Footnot
Level	Widule Code	Wodule Name	Credit	1	2	3	es
7	COMP07012	CCNA1: Introduction to Networks	20		<		1
7	COMP07027	Introduction to Programming	20	✓	\		1
8	COMP08068	Programming for Mobile Devices	20		√		2

Footnotes for option modules

- 1 Direct entrant students should take one of these modules as directed if similar material not covered previously
- 2 Recommended option for continuing students

22b	Level 8 Criteria for Progression and Award
	In line with the Regulatory Framework, for the (exit) award of DipHE Computer Networking, students require at least 240 credit points must be achieved of which a minimum of 100 from the core modules above and none less than SCQF Level 7.
	Those students who achieve 240 credits, at least 90 of which at L8, without meeting the core module requirements above, may be eligible for the (exit) award of DipHE Information Technology.
	Distinction will be awarded in line with University Regulations and no imported credit can be used. (Regulations 3.35 & 3.26)
	Links: <u>UWS Regulatory Framework</u> ; and <u>Student Experience Policy Statement</u> .
	[click here to add detail]

	SCQF LEVEL 9 Learning Outcomes (Maximum of 5 per heading)
	Knowledge and Understanding
A1	Demonstrate detailed knowledge of the operation of a variety of operating systems.
A2	Demonstrate a critical understanding of the operation of computer networks.
А3	Demonstrate an understanding of information security policies and practices
	Practice - Applied Knowledge and Understanding
B1	Carry out a number of operating system administration tasks on a Windows platform.
B2	Use a range of Unix system administration skills to configure a system to specified requirements
В3	Develop a security policy for an organisation
	Communication, ICT and Numeracy Skills
C1	Use mathematical models to predict or describe the operation of a computer network
C2	Write a technical report on an aspect of computer networking
С3	Use a range of software appropriate to the field of computer networking

	Generic Cognitive Skills - Problem Solving, Analysis, Evaluation
D1	Draw on an appropriate range of sources to find answers to networking problems
D2	Evaluate a number of solutions to a problem, selecting the most suitable based on appropriate criteria
	Autonomy, Accountability and Working With Others
E1	Autonomy, Accountability and Working With Others Work effectively within a group to design and implement elements of computer networks

Learning Outcomes - Level 9 Core Modules

SCQF	Madula Cada	Madula Nama	Cue dit	Т	Term		Footnotes	
Level	Module Code	Module Name	Credit	1	2	3	rootilotes	
9	COMP09024	Unix System Administration	20	>				
9	СОМР09089	Windows Server Administration	20	>				
9	СОМР09093	Professional Computing Practice	10	\	✓		1	
9	COMP09022	Data Communications & Networks	20		>			
9	СОМР09086	Information Security Management	20		✓			
9	COMP09092	Research Methods in Computing	10	>	>		1	

Footnotes for Core Modules:

1 May run in either term 1 or term 2, depending on campus and numbers

Learning Outcomes - Level 9 Optional Modules

SCQF	Module	Module Name	Credit	Т	err	n	Footnote
Level	Code	Noutie Name	Credit	1	2	3	S
7	COMP07012	CCNA1: Introduction to Networks	20		\		1
7	COMP07027	Introduction to Programming	20	✓	√		1
8	COMP08097	CCNA2: Switching, Routing & Wireless	20	✓			2

		Essentials				
8	COMP08098	CCNA3: Enterprise Networks, Security & Automation	20		\	2
8	COMP08002	Database Development	20	\		2
9	COMP09006	Web Site Development	20	\		3
9	COMP09050	Database Applications	20	\		3

Footnotes for option modules

- 1 Students entering directly to third year may be directed to take one of these modules, depending on pre-existing experience
- 2 Available only for direct entrant students
- 3 Available for direct entrant or continuing students

22c	Level 9 Criteria for Progression and Award
	In line with the Regulatory Framework, for the award of BSc Computer Networking, at least 360 credit points must be achieved of which all core modules for L9 listed above must be passed, with minimum of 180 credits at SCQF Level 8 and none less than SCQF Level 7. Students who meet the required credit minima abive but do not pass the core modules may be eligible for the BSc Information Technology award.
	Students who have taken and passed the COMP00001 placement module in additional to the degree requirements for BSc Computer Networking will be eligible for the BSc Computer Networking (Sandwich) award.
	Distinction will be awarded in line with University Regulations and no imported credit can be used. (Regulations 3.35 & 3.26)
	Links: <u>UWS Regulatory Framework</u> ; and <u>Student Experience Policy Statement</u> .
	[click here to add detail]

SCQF LEVEL 10 Learning Outcomes (Maximum of 5 per heading)
Knowledge and Understanding

A1	Demonstrate a critical understanding of a specialism of computer networking						
A2	Demonstrate a critical understanding of the principles of computer and network security						
А3	Demonstrate a detailed knowledge of the terms and concepts of virtualisation						
A4	Demonstrate a detailed knowledge of the theory of radio-based computer networks						
A5	Demonstrate a detailed understanding of the tools and techniques used to manage and monitor networks						
	Practice - Applied Knowledge and Understanding						
B1	Carry out a practical investigation of network operation using a range of skills and techniques						
B2	Design, configure and evaluate a secure computer network						
В3	3 Design and implement virtualised computing components to meet requirements						
В4	Design, configure and evaluate radio-based communication networks						
В5	Implement a range of tools for managing and automating networks						
	Communication, ICT and Numeracy Skills						
C1	Prepare and deliver a technical presentation in a specialism of computer networking						
C2	Write a technical report for a professional audience on a specialism of computer networking						
С3	Use a range of software to support and develop work						
	Generic Cognitive Skills - Problem Solving, Analysis, Evaluation						
D1	Carry out a critical review of previous work in the specialism of computer networking						
D2	Make judgements based on limited or biased information						
D3	Identify the most important criteria when evaluating solutions to problems						
	Autonomy, Accountability and Working With Others						
E1	Work autonomously to near-professional standard according to an agreed specification						
E2	Work effectively under guidance in a peer relationship with qualified practitioners						

E3 Demonstrate the ability to reflect critically on work based on experience and professional standard			
E4 Work effectively in a group to solve complex networking problems			

Learning Outcomes - Level 10 Core Modules

SCQF	Madula Cada	Module Name	Credit	Term		n	Footnote
Level	Wiodule Code	Woude Name	Credit	1	2	3	s
10	COMP10034	Computing Honours Project	40	✓	✓		
10	COMP10014	Network Security	20	✓			
10	COMP10064	Virtualisation	20	✓			
10	COMP10023	Wireless Networking	20		✓		
10	COMP10070	Network Management, Monitoring & Automation	20		✓		

Footnotes for Core Modules:

Learning Outcomes - Level 10 Optional Modules

SCQF	Module Code	Madula Nama	Credit	Т	Term		Footnote
Level	Module Code	Module Name	Credit	1	2	3	S
10	WRKB10001	WBL 4 – Industrial Project (40 point)	40	>	✓		1
10	WRKB10002	WBL 4 – Industrial Project (20 point)	20	>	✓		1

Footnotes for option modules

1 Students in appropriate full time employment may, in consultation with the Programme Leader, take one of the Industrial Project modules in place of one or two of the core 20-credit modules, provided all L10 programme learning outcomes are met.

22d	Level 10
	Criteria for Award

In line with the Regulatory Framework, for the award of BSc Hons Computer Networking, students must complete at least 480 credit points, including the core modules at levels 9 and 10 above, and must hold a minimum of 270 points at level 8 and 360 at L7. Students who have passed the required credit volume but have not achieved the core requirements may be eligible for the BSc Hons Information Technology.

Students who have taken and passed the COMP00001 placement module in additional to the degree requirements for BSc Hons Computer Networking will be eligible for the BSc Hons Computer Networking (Sandwich) award.

No Distinction is awarded at Honours level (Regulation 3.25).

Links: UWS Regulatory Framework; and Student Experience Policy Statement.

[click here to add detail]

23 Regulations of Assessment

Candidates will be bound by the general assessment regulations of the University as specified in the <u>University Regulatory Framework</u>.

An overview of the assessment details is provided in the Student Handbook and the assessment criteria for each module is provided in the module descriptor which forms part of the module pack issued to students. For further details on assessment please refer to Chapter 3 of the Regulatory Framework.

To qualify for an award of the University, students must complete all the programme requirements and must meet the credit minima detailed in Chapter 1 of the Regulatory Framework.

24 Combined Studies

There may be instances where a student has been unsuccessful in meeting the award criteria for the named award and for other more generic named awards existing within the School. Provided that they have met the credit requirements in line with the SCQF credit minima (please see Regulation 1.21), they will be eligible for a Combined Studies award (please see Regulation 1.61).

For students studying BA, BAcc, or BD awards the award will be BA Combined Studies.

For students studying BEng or BSc awards, the award will be BSc Combined Studies.

Change/Version Control

Changes made to the programme since it was last published:

What	When	Who	
What	I Whan	I Who	

 Updated Links: Academic Engagement Procedure Equality and Diversity University Regulatory Framework Removed invalid links 	19/10/2023	C Winter
Guidance Note 2023-24 provided	12/12/23	D Taylor
General housekeeping to text across sections and addition of links and some specific guidance. Addition of Duration of Study and some other text – for CMA.	12/12/23	D Taylor

Version Number: UG 1 (2023-24)