MODULE SPECIFICATION

Part 1: Information			
Module Title	Networking and Security I		
Module Code	UFCFVM-15-2	Level	Level 5
For implementation from	2018-19		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Computer Science and Creative Technologies
Department	FET Dept of Computer Sci & Creative Tech		
Contributes towards			
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
Overview: This topic introduces the basic computer system organisation and network infrastructures, with an overall focus on the services and capabilities that network infrastructure solutions enable in an organisational context. **Educational Aims:** See Learning Outcomes. **Outline Syllabus:** The syllabus includes: Overview of computer architecture and functions that includes; CPU, memory, instructions, instruction cycle, I/O, interrupts, peripheral devices, instructions and memory architecture How software is run and how operating system services create an interaction between hardware and software The fundamental building blocks e.g. routers, switches, hubs, storage, transmission Typical architectures of computer networks and the Internet e.g. server/client, hub/spoke The meaning of data and protocol and how they relate to each other Data formats Simple protocols including failure modes in protocols e.g. why a protocol may 'hang' and the effect on a protocol of data communication errors

Some of main factors that affect network performance e.g. the relationship between bandwidth, number of users, nature of traffic, contention
Ways to improve network performance e.g. application of traffic shaping, changes to architecture to avoid bottlenecks, network policy that prohibit streaming protocols

Teaching and Learning Methods: Introductory lectures are supported by seminars, case studies, visits and practical workshops. In addition this module will be supported by interactive forums and learning tools.

150 hours study time of which 36 hours will represent scheduled learning. Scheduled learning includes lectures, seminars, tutorials, demonstration, practical classes and workshops; external visits; supervised time in studio/workshops.

Independent learning includes hours engaged with essential reading, case study preparation, assignment preparation and completion. Apprentice study time will be organised each week with a series of both essential and further readings and preparation for practical workshops. It is suggested that preparation for lectures, practical workshops, session delivery and seminars will take 7 hours per week.

Contact Hours:

36 hours scheduled learning
114 hours research, independent study and preparation for assessment work

Scheduled learning will typically include lectures, seminars, supervision, external visits and an interactive forum.

All apprentices are expected to attend a series of tutorials.

Part 3: Assessment

This module is assessed by a combination of techniques: an examination (1.5 hours) (closed book) and a report (1,500 words).

Assessment A – 1.5 Hour Exam (Closed Book) (Component A)
Apprentices will need to undertake a 1.5 hour unseen exam based on the main factors that affect network performance, including improvement measures. It is suggested that apprentices be provided a case study within the exam – this case study could outline an organisations current network infrastructure, requiring the apprentices to analyse the main factors that are currently affecting their network performance. Apprentices could then propose ways to improve performance.

Assessment B – 1500 Word Report (Component B)
Apprentices will be expected to produce a 1500 word report discussing the core technical theory of a network engineer. Apprentices are expected to demonstrate appreciation of computer architecture and functions, the fundamentals of computer networks, data formats and protocols. Apprentices should also show wider skills i.e. researching, written communication, and academic language/writing skills.

Total Assessment:

Practical Exam: Oral Assessment and/or presentation, practical skills assessment, practical exam

Coursework: Written assignment or essay, report, presentation, dissertation, portfolio, project

Please note that this is the total of various types of assessment and will not necessarily reflect the component and module weightings in the Assessment section of this module description:

Total assessment of the module:
Coursework assessment percentage: 70%
Practical exam assessment percentage: 30%
Total: 100%

First Sit Components	Final Assessment	Element weighting	Description
Report - Component B		70 %	Report (1500 words)
Examination - Component A	✓	30 %	1.5 Hour Exam (Closed Book)
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component B		70 %	Report (1500 words)
Examination - Component A	✓	30 %	1.5 Hour Exam (Closed Book)

Part 4: Teaching and Learning Methods

Learning Outcomes

On successful completion of this module students will be able to:

	Module Learning Outcomes
MO1	Explain some of the main factors that affect network performance and propose ways to improve performance
MO2	Give an overview of computer architecture and functions
MO3	Describe the fundamental building blocks of computer networks and the Internet
MO4	Explain data and protocols, including data formats, simple protocols, and failure modes

Contact Hours

Contact Hours	
Independent Study Hours:	
Independent study/self-guided study	114
Total Independent Study Hours:	114
Scheduled Learning and Teaching Hours:	
Face-to-face learning	36
Total Scheduled Learning and Teaching Hours:	36
Hours to be allocated	150
Allocated Hours	150

Reading List	*The reading list for this module can be accessed via the following link:* https://uwe.rl.talis.com/index.html