



Module Specification

Computer Networks and Protocols

Version: 2023-24, v2.0, 10 Jul 2023

Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	4
Part 4: Assessment.....	4
Part 5: Contributes towards	5

Part 1: Information

Module title: Computer Networks and Protocols

Module code: UFCE4N-15-1

Level: Level 4

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Arts, Technology and Environment

School: CATE School of Computing and Creative Technologies

Partner institutions: University Centre Weston

Field:

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module introduces the basic features of networks and their administration. Students will complete a range of practical networking tasks to reflect the requirements of a networking technician and compile accurate technical laboratory reports.

Features: Not applicable

Educational aims: This module will enable you to understand basic computer system organisation and network infrastructures.

The overall focus of this module is on the services and capabilities that network infrastructure solutions enable in an organisational context and prepare students for a role as network administrator

Outline syllabus: This module will expose students to the fundamental building blocks of network architecture and the key protocols, security and performance considerations.

Basic network device configuration eg hubs, switches, gateways, firewalls/UTM, VPN

Client device configuration (Stationary and mobile devices)

Network service configuration eg DNS, DHCP, NTP, NFS/Samba, PIXE

Typical architectures of computer networks and the Internet e.g. server/client, hub/spoke and peer to peer

Network types (LAN, WAN, MAN, WLAN)

Binary fundamentals & IP Addressing and Subnet addressing

Different transport layer protocols (TCP and UDP)

Key M2M communication protocols, eg HTTP, HTTPS, SMTP, IMAP, POP, FTP, SSH

Network Monitoring (SNMP) and some of main factors that affect network performance e.g. bandwidth, propagation delay, transmission delay

Part 3: Teaching and learning methods

Teaching and learning methods: This module will be delivered through introductory lectures covering the fundamentals and technical underpinning of the module before progressing onto practical delivery through a series of lessons, workshops and practical tasks in a Network Lab to develop the tools and techniques required to complete the assessment for this module.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Apply basic network configurations for network devices

MO2 Plan, design, implement and test a network solution

MO3 Identify and explain the fundamental building blocks of computer networking

MO4 Identify and explain the key network protocols used in M2M communication

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link

Part 4: Assessment

Assessment strategy: This module has one assessment, designed to assess student's theoretical knowledge and practical application of network infrastructure topologies.

The network infrastructure portfolio will consist of three, one-hour, in-class practical

labs with a laboratory report for each in-class assessment.

One of the network labs will be completed in a small group or 2-3 students and require students to configure multiple networked devices.

The practical in-class laboratory assessments and corresponding lab reports are design to allow students to demonstrate understanding of the fundamentals of network infrastructure and the theories and principles of network design through completing a series of practical tasks in a Network Lab with access to specialist equipment and network infrastructure.

The resit opportunities will be comparable to the first sit.

Assessment tasks:

Portfolio (First Sit)

Description: The network infrastructure portfolio will consist of three, one-hour, in-class practical labs with a laboratory report for each in-class assessment.

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Portfolio (Resit)

Description: The network infrastructure portfolio will consist of three, one-hour, in-class practical labs with a laboratory report for each in-class assessment.

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Digital and Technology Solutions (Network Engineer) {Apprenticeship-UCW} [UCW]
BSc (Hons) 2023-24

Digital and Technology Solutions (Software Engineer) {Apprenticeship-UCW} [UCW]
BSc (Hons) 2023-24

Digital and Technology Solutions (Data Analyst) {Apprenticeship-UCW} [UCW] BSc
(Hons) 2023-24

Digital and Technology Solutions (Cyber Security Analyst) {Apprenticeship-UCW}
[UCW] BSc (Hons) 2023-24

Digital and Technology Solutions (Software Engineer) {Apprenticeship-GlosColl}
[GlosColl] BSc (Hons) 2023-24