Module Specification

Network Infrastructure

Version: 2023-24, v2.0, 16 Mar 2023

Contents

Part 1: Information

Module title: Network Infrastructure

Module code: UFCFYQ-30-1

Level: Level 4

For implementation from: 2023-24

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Environment & Technology

Department: FET Dept of Computer Sci & Creative Tech

Partner institutions: None

Delivery locations: Not in use for Modules

Field: Computer Science and Creative Technologies

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.

Features: Not applicable

Educational aims: This module will enable you to understand 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, thus preparing you for a role as network administrator.

Outline syllabus: Overview of computer architecture and functions that includes; CPU, memory, instruction cycle, I/O, interrupts and peripheral devices

The fundamental building blocks e.g. routers, switches, hubs, storage, transmission

Basic network device configuration

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

OSI Model

Different transport layer protocols (TCP and UDP)

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: Introductory lectures covering the fundamentals and technical underpinning of the module for the first assessment 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 practical 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 using the Command Line Interface

MO2 Configure both IP addresses and a DHCP for a domain

MO3 Plan, design, implement and test a network solution.

MO4 Identify and explain the fundamental building blocks of computer networking

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 192 hours

Face-to-face learning = 108 hours

Total = 300

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://rl.talis.com/3/uwe/lists/C17AE399-53C0-7631-69B3-8506DEC367C4.html

Part 4: Assessment

Assessment strategy: This module has two assessments, designed to assess student's theoretical knowledge and practical application of network infrastructure topologies. The network infrastructure report will demonstrate students understanding of the fundamentals or network infrastructure and the theories and principles of secure network design.

The second assessment is a 2 hour Time Constrained Assessment (TCA) completed in a Network Lab with access to specialist equipment and network infrastructure under exam conditions. Students will be required to set up a network to meet a given specification within the given timeframe.

Tutor-lead formative feedback will be available throughout the module.

Assessment components:

Practical Skills Assessment (First Sit)

Description: Practical Exam (1 Hour) Lab-based

Weighting: 40 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2

Report (First Sit)

Description: Report - Design, simulate and document a network solution (2000 words)

Weighting: 60 %

Final assessment: No

Group work: No

Learning outcomes tested: MO3, MO4

Practical Skills Assessment (Resit)

Description: Practical Exam (1 Hour) Lab-based

Weighting: 40 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2

Report (Resit)

Description: Report - Design, simulate and document a network solution (2000 words)

Weighting: 60 %

Final assessment: No

Group work: No

Learning outcomes tested: MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Applied Computing[UCW] BSc (Hons) 2023-24