Module Specification

Advanced Networking

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

Contents

Part 1: Information

Module title: Advanced Networking

Module code: UFCFBT-15-2

Level: Level 5

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

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: The module reflects the job skills and responsibilities that are associated with professional-level job roles such as network engineer, systems engineer, network support engineer, network administrator, and network consultant.

Features: Not applicable

Educational aims: To equip you with the knowledge and skills needed to monitor and maintain complex, enterprise routed and switched IP networks.
To reinforce configuration skills using a range of routing protocols in IPv4 environments and the secure integration of VLANs and WLANs into campus networks.

Outline syllabus: Basic Device Configuration

VLANs Concepts and Configuration

Spanning Tree Fundamentals

DHCPv4 Concepts and Configuration

LAN Security Concepts

WLAN Concepts and Configuration

Routing Concepts including: Static and Dynamic Routing

Troubleshoot Static and Dynamic Routes

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 device configurations for network devices using the Command Line Interface

MO2 Use routers, switches and wireless devices to configure and troubleshoot VLAN and Wireless LANs

MO3 Configure and troubleshoot redundancy on a switched network using STP

MO4 Explain, justify and communicate how a networking design and solution meets set requirements.

MO5 Critically discuss how to support available and reliable networks

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 96 hours

Face-to-face learning = 54 hours

Total = 150

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/5E7FFA0D-361D-8D94-98D7-8C11FD9935AE.html

Part 4: Assessment

Assessment strategy: This module is assessed by a combination of techniques: a practical portfolio, and a presentation.

The practical portfolio requires students to design and develop a networking solution for a client brief including relevant technical documentation.

The presentation will then require students to explain their technical understanding of networking and explore how resilience and redundancy should be built into computer networks.

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

Assessment components:

Presentation (First Sit)

Description: Presentation (15 mins)

Weighting: 25 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO4, MO5

Portfolio (First Sit)

Description: Practical Portfolio

Weighting: 75 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Presentation (Resit)

Description: Presentation (15 mins)

Weighting: 25 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO4, MO5

Portfolio (Resit)

Description: Practical Portfolio

Weighting: 75 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Applied Computing[UCW] BSc (Hons) 2022-23