STUDENT AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Information			
Module Title	Computer Networks [TSI]		
Module Code	UFCFAX-24-2	Level	Level 5
For implementation from	2022-23		
UWE Credit Rating	24	ECTS Credit Rating	12
Faculty	Faculty of Environment & Technology	Field	Computer Science and Creative Technologies
Department	FET Dept of Computer Sci & Creative Tech		
Module Type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co-requisites	None		
Module Entry Requirements	None		
PSRB Requirements	None		

Part 2: Description
Educational Aims: The main aim of the module is to give students understanding of the network architectures, models and protocols. Teach them network terminology, provide skills for basic configuration of the network devices and using the command line interface (CLI); test a small computer network; describe the architecture; components and operations of routers and switches in a small network; provide an understanding of switching processes; VLAN technology and routing. **Outline Syllabus:** Term 1 Explore the Network; Configure a Network Operating System; Network Protocols and Communications; Network Access; Ethernet; Network Layer; IP Addressing; Subnetting IP Networks; Transport Layer; Application Layer;

Build a Small Network;
Term 2
Routing Concepts;
Static Routing;
Dynamic Routing;
Switched Networks;
Switch Configuration;
VLANs;
Access Control Lists;
DHCP;
NAT for IPv4;
Device Discovery, Management and Maintenance;

Teaching and Learning Methods: Learning and teaching will be provided to students in forms of lectures, labs and practical classes. Lectures will be supported by presentation published and available to the students on e.tsi.lv under the module section. Also, additional materials, like, textbooks, publications on the internet, official documentation, videos etc will be presented in TSI LMS. This module utilise intensively materials of Cisco Networking Academy.

During labs, each student receives an individual task to perform. All labs are carried out in Cisco Networking Academy lab.

Practical classes are targeted on common work of students and teaching staff to discuss, explain in details and practise on practical issues of the course.

Part 3: Assessment			
Examination will be completed through in Cisco Networking Academy interface During both terms students should complete test on each topic in Cisco Networking Academy interface. During both terms students should complete sequence of labs in Cisco Networking Academy lab.			
First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Examination - Component A	✓	25 %	Examination
Practical Skills Assessment - Component B		30 %	A Series of labs done in Cisco Networking Academy lab. Each lab is based on Cisco Networking Academy practical assignment and Cisco networking equipment.
In-class test - Component B		45 %	Series of regular in-class test
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Examination - Component A		25 %	Examination
Practical Skills Assessment - Component B		30 %	A Series of labs done in Cisco Networking Academy lab. Each lab is based on Cisco Networking Academy practical assignment and Cisco networking equipment.
In-class test - Component B		45 %	Series of regular in-class test

Part 4: Teaching and Learning Methods	
Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:

Module Learning Outcomes	Reference
Understand and know network devices and services for data transfer; Protocols roles on various layers of computer networks; hierarchical schemas of network names and addresses allocation on the different layers of IPv4 and IPv6 networks	MO1
Understand and know the basic principles of switching; purposes and tasks of router; logical segmentation of networks using VLANs and inter-VLAN routing	MO2
Understand routing protocols (classification, functionalities); concept of Access Control Lists (ACL); Network Address Translating (NAT) technologies; Dynamic Host Configuration Protocol (DHCP) to IPv4 and IPv6	MO3
Configuring and testing of: VLANs and inter-VLAN routing; static and default routing; dynamic routing in small routed networks using dynamic routing protocols; access-control lists to IPv4 and IPv6; Dynamic Host Configuration Protocol (DHCP), Network Address Translation (NAT)	MO4
Implement small network on the base of Ethernet using routers and switches	MO5
Use CLI for the basic configuring of the different network devices	MO6
Apply widely used commands and utilities for small networks testing and network traffic analysing	MO7
Configure and test of the basic operations of small switched network	MO8

Contact Hours		
	Independent Study Hours:	
	Independent study/self-guided study	192
	Total Independent Study Hours:	192
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	132
	Total Scheduled Learning and Teaching Hours:	132
	Hours to be allocated	240
	Allocated Hours	324

Reading List	*The reading list for this module can be accessed via the following link:* https://rl.talis.com/3/uwe/lists/121B43F1-5985-B03E-7473-C9CCA87D0171.html?lang=en-gb&login=1

Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Computer Science and Software Development [Oct][PT][TSI][5yrs] BSc (Hons) 2020-21 BSc (Hons) 2020-21

Computer Science and Software Development [Oct][FT][TSI][4yrs] BSc (Hons) 2020-21

Computer Science and Software Development [Feb][FT][TSI][4yrs] BSc (Hons) 2020-21

Computer Science and Software Development [Feb][PT][TSI][5yrs] BSc (Hons) 2020-21 BSc (Hons) 2020-21