Anglia Ruskin University

Module Definition Form (MDF)

Module code: MOD005428	**Version:** 1 **Date Amended:** 04/May/2016

1. Module Title
Advanced Network Routing

2a. Module Leader
David Cameron

2b. Department
Department of Computing and Technology

2c. Faculty
Faculty of Science and Technology

3a. Level
5

3b. Module Type
Standard (fine graded)

4a. Credits
15

4b. Study Hours
150

5. Restrictions

Type	**Module Code**	**Module Name**	**Condition**
Pre-requisite:	MOD005436	Networking Essentials	Compulsory
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:			

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

This module builds on the key concepts of network switching and routing by focusing on routing protocols and some of the more advanced elements of network device configuration.

This module introduces the learner to static and dynamic routing theory and the protocols associated with this element of the technology. Open Shortest Path First (OSPF) will be used to create a routed network and further security features such as Access Control Lists (ACL) will be presented. Network addressing features such as Dynamic Host Configuration Protocol (DHCP) and Network Address Translation (NAT) are finally implemented to complete the network configuration.

The module is delivered as a mixture of theory, delivered through a series of lectures, and practical implementation, delivered through a series of guided laboratory exercises. In the lab sessions students will gain a deep understanding on the routing and switching concepts and acquire hands-on-skills using advanced network simulation tools that comply with industry standard router platforms.

Students studying this module will be able to access on-line materials including the Cisco

Networking Academy online curriculum, the VLE, and access a specialist laboratory.

Assessment is through a closed book exam and a practical assignment with documentation.

6b. Outline Content

Static Routing

Routing Dynamically

Single-Area OSPF

Network Security issues including Access Control Lists

DHCP

Network Address Translation

6c. Key Texts/Literature

The reading list to support this module is available at: http://readinglists.anglia.ac.uk/modules/mod005428

6d. Specialist Learning Resources

Packet Tracer Software

Specialist Networking Lab

7. Learning Outcomes (threshold standards)		
No.	**Type**	**On successful completion of this module the student will be expected to be able to:**
1	Knowledge and Understanding	Compare and contrast Distance-Vector and Link-state routing protocols
2	Knowledge and Understanding	Apply appropriate routing protocols in a relevant organisational domain
3	Intellectual, practical, affective and transferrable skills	Design a small routable network comprising advanced LAN and WAN components
4	Intellectual, practical, affective and transferrable skills	Configure routers to implement small routable networks

8a. Module Occurrence to which this MDF Refers				
Year	**Occurrence**	**Period**	**Location**	**Mode of Delivery**
2017/8	F01UCP	Semester 2	University Centre, Peterborough	Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	**Hours**	**Learning Outcomes**	**Details of Duration, frequency and other comments**
Lectures	12	1,2,3,4	Lecture 1 hr x 12 weeks
Other teacher managed learning	24	1,2,3,4	Practical 2hr x 12 weeks
Student managed learning	114	1,2,3,4	reading, research, skills practice, assignment
TOTAL:	150		

9. Assessment for the above Module Occurrence					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
010	Coursework	1-4	50 (%)	Fine Grade	30 (%)
Written assessment with practical element (1,500 words equivalent)					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
011	Examination	1-4	50 (%)	Fine Grade	30 (%)
1hr 15, closed book					

In order to pass this module, students are required to achieve an overall mark of 40%.
In addition, students are required to:
(a) achieve the qualifying mark for each element of fine graded assessment of as specified above
(b) pass any pass/fail elements