Anglia Ruskin University

Module Definition Form (MDF)

Module code: MOD005421	**Version:** 1 **Date Amended:** 04/May/2016

1. Module Title
Computer Architecture and Networking

2a. Module Leader
David Cameron

2b. Department
Department of Computing and Technology

2c. Faculty
Faculty of Science and Technology

3a. Level
4

3b. Module Type
Standard (fine graded)

4a. Credits
30

4b. Study Hours
300

5. Restrictions

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

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

This module introduces students to the components present in modern computer systems and networks.

On completing this module, students will be able to specify, construct and maintain networked computer systems, and gain an in-depth understanding of common computer and network architectures, their function and confidently solve their problems.

The module introduces the Windows and Linux-based Operating Systems and the concept of virtualisation.

Theoretical topics include CPU architectures; bus systems; types of memory and data; program execution; number systems; peripheral and network architectures, models and protocols; the importance of standards; network devices and cabling.

The module will be delivered in weekly lectures, which should be consolidated through significant self-study. Laboratory sessions will enable students to gain the practical skills needed to construct, maintain and solve problems on networked computer systems.

Underpinning the theory students will learn (among other practical skills) how to safely assemble PCs (taking account of health and safety issues); install and configure operating systems; examine basic internetworking components, low-level and set up and configure a small local area network.

Student progress is assessed via a submitted laboratory log book, one in-class test, and a written coursework assignment.

6b. Outline Content

- Basic PC architecture

- CPUs, busses, motherboards and memory

- Operations of data, Program execution, Peripheral devices

- Health and safety/risk awareness

- Operating Systems & Virtualisation

- Number Systems and Boolean logic techniques needed in network configuration

- Data communication principles and devices

- The ISO OSI reference model, Ethernet and TCP/IP

- The Physical layer and cabling

- The Data link layer

- The Network and Transport layers and IP subnet design

- The Application, Sessions and Presentation layers

6c. Key Texts/Literature

The reading list to support this module is available at: http://readinglists.anglia.ac.uk/modules/mod005421

6d. Specialist Learning Resources
Workshop or laboratory to support practical work involving PC assembly and access to online Cisco material.

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	Assess the components of modern computer systems and compare the functionality and features of their operating systems and services.
2	Knowledge and Understanding	Discuss the role and function of common network devices, protocols and applications
3	Intellectual, practical, affective and transferrable skills	Install, configure and troubleshoot basic PC configurations and their operating systems.
4	Intellectual, practical, affective and transferrable skills	Install, configure and troubleshoot simple network infrastructure solutions.
5	Intellectual, practical, affective and transferrable skills	Apply knowledge of networks to configure and test simple network scenarios

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	36	1-4	Lecture 3 hr x 12 weeks
Other teacher managed learning	36	1-4	Lab Session and activities 3hr x 12 weeks
Student managed learning	228	1,2,5,6	Additional research, practice and preparation of documentation
TOTAL:	300		

9. Assessment for the above Module Occurrence					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
010	Practical	3,4	20 (%)	Fine Grade	30 (%)
Lab work - completed lab sheets equiv to 1,000 words					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
011	Practical	1,2,5	20 (%)	Fine Grade	30 (%)
In-class test - completed lab sheets equiv to 1,000 words					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
012	Coursework	1,2,5	60 (%)	Fine Grade	30 (%)
Written assignment 4,000 words					

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