

Module Details	
Module Title	Networks and Protocols
Module Code	COS7024-B
Academic Year	2020/1
Credits	20
School	Department of Computer Science
Subject Area	Computer Science
FHEQ Level	FHEQ Level 7
Pre-requisites	N/A
Co-requisites	N/A

Contact Hours	
Type	Hours
Online Lecture (Synchronous)	24
Online Tutorials (Synchronous)	4
Laboratories	8 (on campus and online)
Directed Study	164

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 1

Module Aims
To give an appreciation of the different types of communication and computer networks currently in use and give an insight into their operational features. To highlight the concepts of network performance analysis and introduce network security concepts, principles and theories.

Outline Syllabus
Introduction to network and network topologies. The TCP/IP protocol stack. Application layer protocols; reliable data transfers approaches; IP addressing schemes and routing mechanisms; Address resolution protocols; Performance analysis and security in networks :advances in wireless networks.

Learning Outcomes	
Outcome Number	Description
01	demonstrate a systematic understanding of the multilevel protocol stacks used in contemporary networks and how the protocols apply to the underlying networks and to understand the principles of secure communication.
02	demonstrate a critical awareness of the limitations of specific types of networks and be able to make well informed decisions as to the network features that are most suited for specific applications. You will also be able to understand how the performance and security of network communications can be evaluated and how to conduct research into specific aspects of networks.
03	use appropriate parts of the module in a research context and apply these to the development of future networks and secured protocols or some specific application area of these. You will also be able to apply network performance evaluation to other discipline areas, such as routing and congestion in road networks.

Learning, Teaching and Assessment Strategy
The basic underpinning material is covered in the lectures. The tutorials demonstrate how the lecture material can be applied by the process of working through examples, with lab sessions to simulate networks. Theoretical understanding will be assessed by coursework, and simulation skills exercised in the coursework assignment. Supplementary assessment is by coursework.

Mode of Assessment				
Type	Method	Description	Length	Weighting
Summative	Coursework	Analysis of network traffic to understand various protocols and detect malicious packets	N/A	20%
Summative	Coursework	An intensive research into the analysis of various network security protocols and technologies	3 hour	80%

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.