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Module Definition Form (MDF)

Module code: MOD002630	**Version:** 10 **Date Amended:** 27/Nov/2025

1. Module Title
Networking Technologies

2a. Module Leader
Erika Sanchez-Velazquez

2b. School
School of Computing and Information Sciences

2c. Faculty
Faculty of Science and Engineering

3a. Level
5

3b. Module Type
Standard (fine graded)

4a. Credits
30

4b. Study Hours
300

5. Restrictions

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

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

Computer networks are the backbone of every modern organisation and understanding how to design and secure them is essential. This module equips you with the knowledge and practical skills needed to build, protect and manage enterprise-grade networks.

You'll explore the operation of Local Area Networks (LANs) and key routing protocols like OSPF and BGP, while developing a strong understanding of network security fundamentals, including firewalls, VPNs, intrusion prevention systems (IPS), secure access control and threat mitigation techniques. You'll learn about Access Control Lists (ACLs), network management strategies and design principles to create robust, scalable and secure network solutions.

By the end of this module, you'll be ready for the Cisco Network Security certification. This globally recognised credential validates your expertise and support career progression into roles such as Network Engineer, Network Security Specialist or Network Administrator.

6b. Outline Content

Topics covered in this module include:

- OSPF
- BGP
- Access control Lists (ACLs)
- Generic Routing Encapsulation (GRE) protocol
- AAA
- firewalls
- device monitoring and management (SNMP)
- IPS
- VPNs,
- Layer 2 security.

6c. Key Texts/Literature

The reading list to support this module is available at: https://readinglists.aru.ac.uk/

6d. Specialist Learning Resources

Students will be given access to the on-line web-based curriculum, the networking laboratory and the remote network laboratory NETLAB. In addition, students will be able to access a range of specialised networking software.

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	Apply Link-state routing protocols within a heterogeneous network.
2	Knowledge and Understanding	Assess the suitability of relevant WAN protocols within a modern communication infrastructure.
3	Knowledge and Understanding	Understand use of examples of key tools of modern network management.
4	Intellectual, practical, affective and transferrable skills	Design a scalable IP addressing scheme for a single-area routable network comprising LAN and WAN components.
5	Intellectual, practical, affective and transferrable skills	Configure routers and switches within a single-area domain.
6	Intellectual, practical, affective and transferrable skills	Design and implement a suitable series of Access Control lists to filter traffic.

8a. Module Occurrence to which this MDF Refers				
Year	**Occurrence**	**Period**	**Location**	**Mode of Delivery**
2026/7	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	**Hours**	**Learning Outcomes**	**Details of Duration, frequency and other comments**
Lectures	24	1-6	Lecture: 2hrs/week; Web-based curriculum, VLE resource for lecture notes/presentations.
Other teacher managed learning	24	1-6	Networking Laboratory: 2 hrs/week. Web-based curriculum, VLE resource for lecture notes/presentations. 1 hr asynchronous session to work on labs and other practical activities.
Student managed learning	252	1-6	Laboratory sessions, remote laboratory facility.
TOTAL:	300		

9. Assessment for the above Module Occurrence

The assessment for some modules includes a presentation (see below for details on how this particular module is assessed). We recognise that presenting, especially to a large group, can cause significant anxiety or distress for some students. If this may affect you, please contact your Module Leader or the Disability and Neurodiversity Service as early as possible. We will work with you to consider appropriate reasonable adjustments. Depending on your individual needs, these might include, for example, presenting to a smaller group or presenting only to a member of academic staff.

Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
010	Examination Cambridge	1-3	40 (%)	Fine Grade	30 (%)
Written Computer-Based Exam (1 hour 30 minutes)					

Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
011	Coursework	4-6	60 (%)	Fine Grade	30 (%)
Case study based assignment including demonstration equiv 3500 words					

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:
(a) achieve the qualifying mark for each element of fine graded assessment as specified above
(b) pass any pass/fail elements

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]