

Module Title Introduction To Data Networks Keywords Network design, router configuration, Switches, VLANs, Fault finding and testing	Reference CM2521 SCQF Level SCQF 8 SCQF Points 15 ECTS Points 7.5 Created July 2002 Approved November 2015 Amended April 2016 Version No. 3
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This Version is No Longer Current

The latest version of this module is available [here](#)

Prerequisites for Module

None.

IP Addressing: IPv4 Network Addresses, IPv6 Network Addresses, Connectivity Verification.

Corequisite Modules

None.

Subnetting IP Networks: Subnetting an IPv4 Network., Addressing Schemes, Design Considerations for IPv6.

Precluded Modules

None.

Network Access: Data Link Layer, Media Access Control, Physical Layer, Network Media.

Aims of Module

1. To introduce students to the architecture, structure, functions, components, and models of the Internet and other computer networks.
2. To introduce students to the principles and structure of IP addressing.
3. To introduce students to the fundamental concepts of Ethernet, media and operations.

Ethernet: Ethernet Protocol, Address Resolution Protocol, LAN Switches.

Network Management and Performance: Create and Grow, Keeping the Network Safe, Basic Network Performance, Managing IOS Configuration Files.

Indicative Student Workload

Contact Hours

Full Time

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1. Select suitable equipment, and protocols for use in small network.
2. Diagnose problems and purpose solutions to basic problems in equipment selection, protocol use and configurations in a network.
3. Analyse and design and IP addressing schemes for a small network.
4. Configure a small network.
5. Troubleshoot small network.

Indicative Module Content

Exploring the Network: Communicating in a Network-Centric World, the Network as a Platform, LANs, WANs, and the Internet, The expanding Network.

Configuring a Network Operating System: IOS Bootcamp, Getting Basics, Addressing Schemes.

Network Protocols and Communications: Network Protocols and Standards, Using Requests for Comments, Moving Data in the Network

Laboratory 36

Directed Study
Directed Study 36

Private Study
Private Study 78

Mode of Delivery

This module is taught using a structured programme of web based learning materials, web-based activities, practical exercises and student centred learning.

Assessment Plan

	Learning Outcomes Assessed
Component 1	1,2,3
Component 2	4,5

Component 2 is coursework which consists of a practical laboratory exercises associated with the Cisco Course 1 worth 50% of the total module assessment.

Component 1 is comprised of a closed book on-line examinations worth 50% of the total module assessment.

Indicative Bibliography

Data in the Network.

Application Layer: Application Layer Protocols, Well-Known Application Layer Protocols and Services.

Transport Layer: Transport Layer Protocols, TCP and UDP.

Network Layer: Network Layer Protocols, Routing, Routers, Configuring a Cisco Router.

1. STALLINGS, W. 2013. Data and Computer Communication, 10th ed. New Jersey: Prentice Hall
2. This module represents Course 1 of the four course CCNA (Cisco Certified Networking Associate) Routing and Switching Curriculum. The material for the course is provided by Cisco to the University in the form of web-based learning and assessment mechanisms as well as lab equipment in the form of routers and switches for practical training.