Module Title **Introduction To Data Networks** **Keywords** Network design, router configuration, Switches, VLANs, Fault finding and testing	Reference EN2521 SCQF Level SCQF 8 SCQF Points 15 ECTS Points 7.5 Created July 2002 Approved March 2004 Amended August 2011 Version No. 4

This Version is No Longer Current

The latest version of this module is available here

Prerequisites for Module

Standard Grade Maths and Physics, and successful completion of SCQF 7 level, or equivalents.

Corequisite Modules

None.

Precluded Modules

None.

Aims of Module

To provide the student with the abiity to design and implement a data network.

Learning Outcomes for Module

VLANs: Concepts, benefits and disadvantages.

Network Design: IP address allocation, switch and router configuration. Use of Ping and Telnet to test operation.

Simulation: Use of Packet Tracer to design and test networks.

Indicative Student Workload

Contact Hours	Full Time
Assessment	12
Laboratory	24
Tutorials/Seminars	6
Directed Study	
Directed Study	24
Private Study	84

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

1. Explain the role and operation of networking equipment, both hardware and software.
2. Design, implement and test a wide area network consisting of host machines, servers, routers, switches and various types of cabling.

Indicative Module Content

Concepts: IP addressing, networks and subnets, use of fixed length and variable length subnet masks.

Network Equipment: cables, switches, routers, servers and host machines. Hardware and software.

Routing protocols: RIP and RIPv2. Development of routing tables and update procedures.

Mode of Delivery

This is a laboratory-based course supplemented with seminars, tutorial sessions and student-centred learning.

Assessment Plan

	Learning Outcomes Assessed
Component 1	1,2

Coursework - consisting of Packet Tracer exercises and a major design project. (100% weighting).

Indicative Bibliography

1. STALLINGS, 2009. Data and Computer Communication, 8th ed. New Jersey: Prentice Hall
2. GRAZIANI, R. and JOHNSON, A. 2008. Routing Protocols and Concepts - CCNA Exploration Companion Guide, Cisco Press.