

Module Title Network Protocols And Performance Keywords Physical layer: Serial communication, information theory, link capacity calculations, line coding, protocols. Data Link layer: Protocols, utilisation, error control. Network layer: IP addressing, routing protocols.	Reference EN3534 SCQF SCQF 9 Level SCQF Points 15 ECTS Points 7.5 Created November 2011 Approved February 2012 Amended Version No. 1
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This Version is No Longer Current

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

Prerequisites for Module

None.

Network layer: IPv4 addressing, IPv6 addressing, routing protocols, queuing theory.
Network Protocols: BOOTP/DHCP, NAT, SNMP, POP3, ARP, RARP, IMAP, unicast, multicast, broadcast.

Corequisite Modules

EN1530 Introduction to Networks or equivalent.

Indicative Student Workload

Precluded Modules

None.

<i>Contact Hours</i>	Full Time
Assessment	14
Lectures	12
Tutorials/Seminars	12

Aims of Module

To provide the student with an understanding of the protocols and performance issues associated with computer networks.

<i>Directed Study</i>	
Directed Study	25
Practical Exercises	12
<i>Private Study</i>	
Private Study	75

Learning Outcomes for Module

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

1. Understand the basis of performance metrics used to assess the efficiency and effectiveness of a computer network.
2. Understand the function and operation of network protocols.
3. Appreciate the influence of network protocols at the physical, data link and network layers on the overall performance of a computer network.
4. Appreciate the role of queuing and information theory in estimating and predicting the performance of computer networks.

Indicative Module Content

Performance issues related to:
Physical layer: Serial communication, information theory, link capacity calculations, line coding, protocols.
Data Link layer: Protocols, utilisation, error control.

Mode of Delivery

The module is taught using a structured programme of lectures, tutorials, practical exercises.

Assessment Plan

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

Component 2 is a closed book exam of 2.5 hours duration. (70% weighting)

Component 1 is a coursework involving a performance assessment of a computer network. (30% weighting)

Indicative Bibliography

1. STALLINGS, W. 2010. Data and Computer Communications. 9th ed. Person Prentice Hall.