

Pre-Requisite Modules code(s)	Co-Requisite Modules code(s)	ECTS Credits	Module Code	Module Title
None	None	5	CMPU1021	Networking 1 - Fundamentals

8.1.8. Networking 1 - Fundamentals

Module author: Edina Hatunic-Webster

Module Description:

This course serves as an introduction to networking technologies. The course focuses on network terminology and protocols, Local-Area Networks (LANs), Wide-Area Networks (WANs), Open Systems Interconnection (OSI) models, cabling, Ethernet, Internet Protocol (IP) addressing and network standards.

Module aim

To provide the learner with a fundamental knowledge of networking technologies and of the relationships between the different parts of a computer network.

Learning Outcomes:

On completion of this module, the learner will be able to:

- describe the components and organisation of basic computer network installations.
- describe the Open System Interconnection (OSI) reference model layers.
- describe Transmission Control Protocol/Internet Protocol (TCP/IP) model layers.
- explain the purpose and operation of the main networking devices.
- Use a variety of networking utilities and tools

Learning and Teaching Methods:

The on-line course delivery involves a combination of lectures, self-paced study and weekly online continuous assessments.

Module content:

- Network Fundamentals
- OSI Reference Model Layers.
- Networking Media
- Planning and Cabling Networks
- Ethernet
- TCP/IP Protocol Suite and IP Addressing

Module Assessment

Assessment will be through a combination of continuous assessment and a written exam.

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Marks will be allocated as follows:

Continuous Assessment (50%): The continuous assessment element of this course will focus on the practical aspects of the course.

Written Exam (50%): The written exam will be conducted under normal DIT Exam regulations and will be based on the theory covered during lectures.

Essential Reading:

COMER, Douglas E. "Computer Networks and Internets with Internet Applications", Prentice Hall.

TANNENBAUM, Andrew, S. "Computer Networks", Prentice Hall

LAMMLE, Todd. "CCNA Cisco Certified Network Associate Study Guide, Fifth Edition", Sybex.

Mark A. Dye, Antoon W. Ruff, "Network Fundamentals", CCNA Exploration Companion Guide, Cisco Press, 2007

Supplemental Reading:

Cisco Systems, 2003, "Cisco Network Academy Program: IT Essentials 1: PC Hardware and Software Companion Guide", Cisco Press.

Cisco Systems, 2005, "Cisco Network Academy Program: CCNA 1 and 2 Companion Guide, Third Edition", Cisco Press.

HALSALL, Fred. "Computer Networking and the Internet", Addison Wesley.

THOMAS, Tom., 2004, "Network Security First Step", Cisco Press

Web references, journals and other:

<http://www.cisco.com>

Further Details:

Duration: Single Semester Module; Contact Hours: 4 hours per week (2 hours of lecture, 2 hours of laboratory work, maximum of 20 students per laboratory.)

Date of Academic Council approval