

<b>Pre-Requisite Modules code(s)</b>	<b>Co-Requisite Modules code(s)</b>	<b>ECTS Credits</b>	<b>Module Code</b>	<b>Module Title</b>
			CMPU3028	Networking 4 – WAN Technologies

### 8.3.3. Networking 4 – WAN Technologies

**Module author:** K. O'Brien

#### **Module Description:**

In This course provides an introduction to Wide Area Networking (WAN) technologies. The course focuses on Advanced IP addressing techniques including Network Address Translation (NAT), Port Address Translation (PAT) and Dynamic Host Configuration Protocol (DHCP), WAN Technology and Terminology including Point to Point Protocol (PPP), Dial-On-Demand Routing (DDR) and Frame Relay, Network Management, Introduction to Optical Networking.

The module is structured to cover both theory and practical experience of Wide Area Networking technologies.

#### **Module aim**

The aim of this module is to provide the learner with a working knowledge of and practical experience of the installation and configuration of Wide Area Networks.

#### **Learning Outcomes:**

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

- Describe the components and organisation of Wide Area Networks.
- Apply practical skills in the area of design, installation, configuration and security of Wide Area Networks.

#### **Learning and Teaching Methods:**

The on-line course delivery involves a combination of lectures, self-paced study and weekly online continuous assessments. Included in the on-line materials is a significant practical aspect to the course where learners will gain exposure to industry standard networking equipment, its configuration and management

#### **Module content:**

Overview of WAN Technologies, Point-to point protocol, Frame Relay, Network Security, Access Control Lists, Teleworker Services, IP addressing Services, Network Troubleshooting, emerging technologies

#### **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%)
- Written Exam (50%)

### Essential Reading:

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

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

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

Vachon B., Graziani R. (2008) Accessing the WAN Exploration Companion Guide, First Edition", Cisco Press

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

### Supplemental Reading:

Graziani R., Johnson A. (2007) ,Routing Protocols and Concepts, CCNA Exploration Companion Guide, Cisco Press.

### Further Details:

Maximum of 20 students per laboratory.. To be delivered in one semester. Four hours per week, 2 hours of lecture, 2 hours of laboratory work.

**Date of Academic Council approval .....**