

**NEW ZEALAND INSTITUTES OF TECHNOLOGY AND POLYTECHNIC  
QUALIFICATIONS IN INFORMATION & COMMUNICATIONS TECHNOLOGY**

**PRESCRIPTION: HS330 NETWORKS**

AIM OF MODULE:	To provide students with fundamental knowledge of networks and networking.
CREDITS:	5
STUDENT LEARNING HOURS:	50
CONTENT REVISED:	2008
PRESCRIPTION EXPIRY DATE:	November 2013

**Level and Assessment Schedule**

TOPICS	Highest Skill Level				Suggested Assessment Percentage
	R	C	A	P	
1 Networking Fundamentals		*			40
2 LANs		*			35
3 WANs		*			25
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## LEARNING OUTCOMES

The student will:

- C 1 Explain the fundamentals of networks and networking
- C 2 Explain the concepts of Local Area Networks (LANs)
- C 3 Explain the concepts of Wide Area Networks (WANs)

## CONTENT

### 1 Networking Fundamentals

- List the key elements and terms associated with a data communication system and explain their roles, including;
  - Sender
  - Receiver,
  - Link/medium
  - Modem; e.g. xDSL
  - Analogue
  - Digital
  - Internet Service Provider (ISP)
  - Telecommunications provider
  - Transmission media
- Describe the ISO OSI 7-Layer Model and briefly compare this with the TCP/IP protocol
- Briefly describe network security issues and some basic precautions to be applied, including physical security and backups

### 2 LANs

- Describe the following network topologies and their properties:
  - Ring
  - Bus
  - Star
  - Extended Star
- Describe the principles of operation of the following protocols:
  - Ethernet
  - Token passing
- Describe typical networking media, including;

- Twisted pair cable
- Coaxial cable,
- Optical fibre
- Wireless
- Describe typical LAN configurations, as follows;
  - Peer-to-Peer
  - Client/Server
- Describe typical uses of LANs, including;
  - Local sharing of data
  - Programs
  - Peripherals
  - Communications

### **3 WANs**

- Describe various types of WAN services
- Describe typical uses of WANs
- Describe the World Wide Web/Internet
- Briefly describe data compression and data encryption