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

PRESCRIPTION: NE700 NETWORKS

AIM OF MODULE:	To enable students to extend their knowledge of computer networking and network architectures.
CREDITS:	7
KNOWLEDGE ASSUMED FROM:	NM600 LAN Administration, NM61n Applied LAN Administration, DC600 Data Communications or NE600 Networks
STUDENT LEARNING HOURS:	70
CONTENT REVISED:	2004
PRESCRIPTION EXPIRY DATE:	Nov 2011

Level and Assessment Schedule

TOPICS	Highest Skill Level R	C	A	P	Suggested Assessment Percentage
1. Network Architectures		*			15
2. Local Area Networks				*	25
3. Wide Area Networks				*	25
4. Network Interconnections		*			15
5. Network Management		*			20
					100

LEARNING OUTCOMES

The student will:

C	1	Describe typical network architectures.
P	2	Perform a detailed study of a typical LAN configuration.
P	3	Perform a detailed study of a typical WAN configuration.
C	4	Describe interconnections between diverse networks.
C	5	Describe the requirements for network management.

CONTENT

1 NETWORK ARCHITECTURES

- Network architectures described will include:
  - The ISO Model
  - The TCP/IP suite
  - IBM's Systems Network Architecture (SNA) and may include others eg. DNA

2 LOCAL AREA NETWORKS

- The design and implementation of a LAN will include:
  - Media types
  - Hardware options (devices)
  - Software (NOS options)
  - Communications protocols
  - Features and constraints

3 WIDE AREA NETWORKS

- The design and implementation of a WAN will include:
  - Hardware options (devices)
  - Communication networks (options)
  - Communications protocols
  - Features and constraints

4 NETWORK INTERCONNECTIONS

- The interconnection of diverse networks will be described in terms of:

  - Hardware (devices)
  - Communications protocols
  - Communication networks (options)
  - Security issues

5 NETWORK MANAGEMENT

- Network management issues described will follow the ISO management model and include:

  - Fault management
  - Accounting management
  - Configuration and name management
  - Performance management
  - Security management

NOTES

- While a case study may be used for the detailed examination of a typical LAN configuration, designing and constructing a LAN is the preferred option.

- It is expected that the detailed examination of a WAN will be performed using a case study.

- For the analysis of synchronous protocols use a product such as Triticom's™ LANdecoder™.

- When investigating protocols used in the design and implementation of networks (LANs and WANs) it is expected that the major emphasis will be on TCP/IP.