

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

PRESCRIPTION: NC500 NETWORK CABLING

AIM OF MODULE:	To enable students to install a basic cabling system for use with telecommunications and computer systems.
CREDITS:	7
STUDENT LEARNING HOURS:	70 student learning hours
CONTENT REVISED:	2010
PRESCRIPTION EXPIRY DATE:	November 2013

Level and Assessment Schedule

TOPICS	Highest Skill Level				Suggested Assessment Percentage
	R	C	A	P	
1. Cabling Systems		*			15
2. Installation Facilities		*			10
3. Installation Documentation		*			5
4. Systems Hardware		*			20
5. Cable Installation			*		50
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LEARNING OUTCOMES

The student will:

- C 1 Describe typical cabling system features.
- C 2 Explain telecommunications pathways requirements.
- C 3 Describe basic installation documentation requirements.
- C 4 Describe the various hardware components of a cabling system.
- A 5 Practice correct cabling installation techniques.

CONTENT

1 Cabling Systems

- A description of the structured building cabling systems for telephone and computer LAN networks installed according to the most recent New Zealand Standard; e.g. AS/NZ 3080, will include:
 - Star structure
 - Distributors
 - Backbones
 - Telecommunication closets
 - Equipment rooms
 - Horizontal cabling
 - Telecommunications outlets
 - Work areas
 - The standard system cable lengths

2 Installation Facilities

- An explanation of the telecommunications pathways and spaces for commercial buildings according to the most recent standard; e.g. Australian Standard AS 3084, will include:
 - Intra-building elements
 - Horizontal pathways
 - Backbone pathways
 - Entrance facilities

3 Installation Documentation

- A description of the basic requirements for identification of cabling and pathway system components and recording of installation particulars according to the most recent standard; e.g. Standard AS/NZ 3085.1, will include:
 - The use of identifiers
 - The use of labels

- The requirements for keeping of records
- The use of indoor and outdoor infrastructure diagrams

4 Systems Hardware

- A description of the various types of cabling and hardware used in a systems network will include:
 - UTP
 - STP
 - Coaxial cable
 - Optical fibre
 - The IBM cabling system or any other current system
 - Telecommunications plugs and sockets
 - Data plugs and sockets
 - Patch-cords
 - Patch panels and Baluns
 - Terminations

5 Cable Installation

- Practicing correct cable system installation techniques will include factors which affect system integrity such as:
 - Stress
 - Crush
 - Length
 - Termination
 - Markings and colour codes
- The requirements for minimising electrical interference (noise) including:
 - Shielding
 - Grounding
 - Earthing
 - Cable separation
- Correct wiring of system connectors, such as:
 - Two-wire telephone cable
 - UTP cable
 - STP cable
 - ST multi-mode Fibre
- Requirements for testing such as:
 - Acceptance testing
 - Trouble shooting
 - Compliance testing

Resources

- Cabling: The Complete Guide to Network Wiring (1st edition) by David Groth & Jim McBee. ISBN-13: 978-0782143317 (Published by Sybex Inc; July 21, 2004)

Web links:

- Telecommunications and networking Cabling Tips:
http://searchnetworking.techtarget.com/generic/0,295582,sid7_gci1050450,00.html#
(Accessed July 2010)