

1 Module Details	
Module Name	Network Operating Systems
Nominal duration	It is expected that students with the appropriate entry knowledge and skills will successfully complete this module in 36 to 40 hours.
Module code	NUE119
Discipline code	0703230
2 Module purpose	This module will provide students with the knowledge and skills to install and configure a business machine on a common network O/S using TCP/IP protocols.
3 Prerequisites	ITH202 Using a Graphical Interface NE115 Introduction to Local Area Networks
4 Relationship to competency standards	This module provides some of the knowledge and skills underpinning competency in the following standards: National Electrotechnology Industry Standards, Units NES009 NES106, NES206, NES301, NES402, NES501, and the relevant specialisation. Metals & Engineering Industry Standards, Units 5.1A, 18.57A
5 Content	<ol style="list-style-type: none"> 1. Network systems <ul style="list-style-type: none"> - Mainframe - Mini computers - Microcomputers 2. WANs <ul style="list-style-type: none"> - Protocols - Protocol stacks - Interconnectivity 3. LANs <ul style="list-style-type: none"> - Protocols - Terminal emulation 4. Operating systems <ul style="list-style-type: none"> - NT - UNIX - LINUX - Netware - Windows 95 - Other NOS 5. Administration <ul style="list-style-type: none"> - Duties - Responsibilities - Procedures - User access - Managing and configuring attached devices 6. TCP/IP <ul style="list-style-type: none"> - Protocols - Services - IP addressing scheme - Routing - OSI model relationship - Network address - Broadcast address

	<ul style="list-style-type: none"> - Multicast - Fragmentation - PPP implementation - Bridging - Network address translation
	<p>7. Equipment installation</p> <ul style="list-style-type: none"> - driver loading - testing - troubleshooting
6 Assessment strategy	
Assessment methods	Assessment should be progressive reflecting a holistic approach to ensure the module purpose is met. To assist in ensuring validity, reliability and fairness assessment instruments should include practical exercises, assignments and written tests consisting of a number of item types, such as multiple choice, short answer and problem solving.
Conditions of assessment	Normally learning and assessment will take place in a classroom/laboratory environment.
7 Learning Outcome Details	
Learning Outcome 1	Describe the typical network systems found in common use.
Assessment criteria	<p>1.1 List typical mainframe network systems and their operating systems.</p> <p>1.2 List typical mini computer network systems and their operating systems.</p> <p>1.3 List typical microcomputer network systems and their operating systems.</p>
Learning Outcome 2	Identify and describe the fundamental characteristics of different network operating systems, highlighting the differences between them.
Assessment criteria	<p>2.1 Define the purpose of an operating system.</p> <p>2.2 Describe the fundamental characteristics of different network operating systems.</p> <p>2.3 Describe the log on procedure for different operating systems.</p> <p>2.4 Describe and demonstrate the general properties of network operating systems including job scheduling, buffering, spooling, access, realtime and time-sharing.</p>
Learning Outcome 3	Describe the duties and responsibilities of a network administrator.
Assessment criteria	<p>3.1 Describe the duties and responsibilities of a network administrator.</p>

	<p>3.2 Establish new users on a network.</p> <p>3.3 Apply permissions for a selected network device for a user/group.</p> <p>3.4 State the need for an audit trail.</p>
Learning Outcome 4	<p>Describe the TCP/IP protocols and services.</p> <p>4.1 Describe the TCP/IP suite of protocols.</p> <p>4.2 Draw the TCP/IP suite protocol stack.</p> <p>4.3 Draw a diagram relating the TCP/IP protocols to the OSI model.</p> <p>4.4 Describe each of the TCP/IP communication protocols.</p> <p>4.5 Describe each of the TCP/IP Suite services.</p>
Learning Outcome 5	<p>Describe the universal IP addressing scheme.</p>
Assessment criteria	<p>5.1 Describe the different IP address classes.</p> <p>5.2 Describe the term “sub-net addressing”.</p> <p>5.3 Generate a sub-net addressing scheme for an organisation.</p> <p>5.4 Define the reserved IP addresses and state their use.</p>
Learning Outcome 6	<p>Configure and test a discrete peripheral device on a network.</p>
Assessment criteria	<p>6.1 Configure a discrete peripheral on a network using TCP/IP protocols.</p> <p>6.2 Install a software driver on a network for a discrete peripheral.</p> <p>6.3 Perform loopback testing on a discrete peripheral on a network.</p> <p>6.4 Utilise a discrete peripheral on a network.</p> <p>6.5 Ping a discrete peripheral on a network from a workstation.</p> <p>6.6 Resolve address conflicts if necessary.</p>
8 Delivery of the module	
Delivery strategy	<p>Delivery strategies must be suitable for learning both theoretical and practical aspects described in the module purpose. It is considered that the most effective way to achieve this is by the integration of theory and practice where students learn by experimentation and through research and laboratory reports. It is recommended that learning and assessment be facilitated in a holistic manner, which may require a learning outcome sequence other than that indicated in the module.</p>
Resource requirements	<p>Resources should be sufficient for students to carry out practical exercises on an individual basis. This will require a small local area network.</p> <p>Useful references include</p>

Occupational health and safety requirements

A safe and healthy environment will be provided for students and teachers as well as safety procedures followed with regard to teaching/learning activities.