Module: Network Development 151

Module name:	Network Development 151
Code:	NWD151
NQF level:	5
Type:	Core – Diploma in Information Technology (all stream)
Contact Time:	30 hours
Structured Time	6 hours
Self-directed time	34 hours
Notional hours:	70 hours
Credits:	7
Prerequisites:	None

Purpose

This module serves as a general introduction for students to acquire a foundation in current networking technologies for local area networks (LANs), wide area networks (WANs), and the Internet. The module provides an introduction to the hardware, software, terminology, components, design, and connections of a network, as well as the topologies and protocols for LANs. It covers LAN user concepts and the basic functions of system administration and operation.

Outcomes

Upon successful completion of this module, the student will be able to:

- Demonstrate an informed understanding of networks including key terms, concepts and facts and current IT infrastructure components.
- Show awareness of literacy knowledge in respect to advanced networking concepts, basic taxonomy and terminology of computer networking.
- Select and apply the core concepts and methods underlying IP networks to solve network design and connectivity problems.
- Identify and evaluate the different core elements of IT network infrastructure solutions based on how they relate to different network systems.
- Demonstrate the ability to gather information from a range of sources in order to apply basic processes to analyse ethical considerations on security and business continuity implications of IT network infrastructure solutions.

Assessment

- Continuous evaluation of theoretical work through two written assignments, one formative test, and a summative test.
- Continuous evaluation through tracking of progress, offering support, guidance and provision of constant stream of opportunities to prove mastery of subject material and pursuing more challenging work as they master the basics.
- Final assessment through a written examination.

Teaching and Learning

Learning materials
Lecturer hand-outs, samples and lab exercises.

Prescribed Book
- Network Development - IT without frontiers series
- Online prescribed sources.
- Simulation Software (Packet Tracer)

Additional Material
   📖 Lammle, T., (2009). *CompTIA Network+ Deluxe Study Guide*. John Wiley & Sons. [ISBN: 9781119021247]

Learning activities
Learning will be facilitated by the lecturer with student centred activities that involve problem based learning where pupils are presented with challenges that replicate the situation in the real world environment. This will be achieved through a combination between presentation of theoretical concepts, guided exercises, group work and discussions together with two mandatory assignments to be completed during the module.

Notional learning hours

Activity	Units	Contact Time	Structured Time	Self-Directed Time
Lecture		27.0		13.0
Formative feedback		3.0		
Project				
Assignment	2			6.0
Test	2		4.0	8.0
Exam	1		2.0	7.0
		30.0	**6.0**	**34.0**

Syllabus
- Introduction to Networking
- Basic Network Media
- Understanding Network Architecture
- Introducing Network Standards
- TCP/IP Protocol Suite
- Designing and Installing a Network
- Establishing Network Shares and Accounts
- Elements of Network Connectivity
- IP addressing fundamentals and Dynamic Host Configuration Protocol
- Virtual Private Networks
- Domain Name system
- Introduction to Network Security

- Printing on a Network
- Troubleshooting a Network