Module: Network Development 181

Module name:	Network Development 181
Code:	NWD181
NQF level:	5
Type:	Core – Bachelor of Computing (all streams)
Contact Time:	34 hours
Structured Time	6 hours
Self-directed time	40 hours
Notional hours:	80 hours
Credits:	8
Prerequisites:	None

Purpose

This module serves as a general introduction for students to acquire a foundation in current network technologies for local area networks (LANs), wide area networks (WANs), and the Internet. The course 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 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.
- 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 one 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.
- The assignments or projects collectively will count 20% of your class mark.
- All tests will collectively account for 80% of your class mark.
- Your class mark contributes 30% towards your final mark for the subject, while the final assessment accounts for 70% of your final mark.

Teaching and Learning

Learning materials

Prescribed Book (EBSCO)

    📖 Ferguson, B., 2015. CompTIA Network+ Review Guide: Exam N10-006.
    📖 Simulation Software (Packet Tracer)

Additional Material

    📖 Lammle, T., (2009). *CompTIA Network+ Deluxe Study Guide*. John Wiley & Sons. [ISBN: 9781119021247]
    📖 Lowe, D., 2016. Networking All-in-one for Dummies. John Wiley & Sons.

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		19.0
Formative feedback		7.0		
Project				
Assignment	2			6.0
Test	2		4.0	8.0
Exam	1		2.0	7.0
		34.0	**6.0**	**40.0**

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