

Module: Wireless Networking 251

Module name:	Wireless Networking 251
Code:	WLN251
NQF level:	6
Type:	Fundamental – Diploma in Information Technology (Infrastructure stream)
Contact Time:	30 hours
Structured Time	6 hours
Self-directed time	34 hours
Notional hours:	70 hours
Credits:	7
Prerequisites:	NWD151

Purpose

This course studies the features of mobile and wireless networks and the impact of these features on the development of software and auxiliary protocols. This course will cover concepts on wireless communications for voice, data communication and multimedia. This is followed by several topical studies around recent research publications in mobile computing and wireless networking field.

Outcomes

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

- Demonstrate a detailed understanding of the main areas of wireless network technology including key terms, concepts, facts and the evolution of wireless networks.
- Evaluate, select and apply existing and emerging wireless communication networks to solve problems within the context of wireless networking.
- Demonstrate an understanding of different forms of knowledge, schools of thought on concepts of wireless technology and how wireless networking fits in.
- Identify, analyse and solve mobile interface performance issues within the context of wireless mobile communication.
- Assess the ethical implications of security and privacy issues in managing wireless enterprise network.

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.
- Wireless Networking IT without frontiers (2014).

Additional Material

- 📖 Aichele, C., Flickenger, R., Fonda, C., Forster, J., Howard, I., Krag, T., Zennaro, M., (2006). *Wireless Networking in the Developing World*. Limehouse Book Sprint Team.
- 📖 John Ross, (2008). *Introduction to Wireless Networks. The Book of Wireless: A Painless Guide to Wi-Fi and Broadband Wireless*

Learning activities

Learning will be facilitated by the lecturer with student centred activities that involve problem based learning where students are presented with challenges that replicate the situation in the real world environment. This will be achieved through a combination of presentation, 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

- Cellular Systems
- Radio Waves
- Microwave Communication
- Infra-red Communication
- Bluetooth
- Cellular Technologies
- Radio communication
- Satellite Communication