

<b>Module Title:</b>	Networking: Wireless and Routing Concepts
<b>Language of Instruction:</b>	English
<b>Credits:</b>	5
<b>NFQ Level:</b>	6
<b>Module Delivered In</b>	<a href="#">5 programme(s)</a>
<b>Teaching &amp; Learning Strategies:</b>	A combination of traditional lectures and laboratory sessions will be employed. The laboratory sessions will allow for regular formative assessment and feedback.
<b>Module Aim:</b>	To provide learners with an appreciation of the characteristics, functionality and management of wireless LANs and Inter-network communications.
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Understand LAN security vulnerabilities and implement mitigation strategies.
LO2	Plan and manage a wireless LAN.
LO3	Appraise network requirements to provide suitable inter-network communications using suitable static routes.
<b>Pre-requisite learning</b>	
<b>Module Recommendations</b> <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
<b>Incompatible Modules</b> <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
<b>Co-requisite Modules</b>	
No Co-requisite modules listed	
<b>Requirements</b> <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
No requirements listed	

**Module Content & Assessment**

**Indicative Content**

**LAN Security Concepts:**

Access Control (AAA, 802.1x); Attacks (MAC Table Attacks, VLAN Attacks, DHCP Attacks, ARP Attacks, Address Spoofing Attacks, STP Attacks); Mitigation (Port Security, DHCP Snooping, Dynamic ARP Inspection (DAI), IP Source Guard (IPSG))

**WLAN:**

Components of WLANs, WLAN Operation, CAPWAP Operation, Channel Management, WLAN Threats, Secure WLANs

**Routing:**

Path Determination, Packet Forwarding, Static v Dynamic Routing, IP Static Routes, Default Static Routes, Floating Static Routes

Assessment Breakdown	%
Continuous Assessment	50.00%
Project	40.00%
Practical	10.00%

**Continuous Assessment**

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Examination	n/a	1,2	20.00	Week 6
Examination	n/a	1,2,3	30.00	Week 9

**Project**

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	n/a	1,2,3	40.00	Week 12

**Practical**

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Weekly practical/laboratory work is designed to allow students to demonstrate the achievement of all the learning outcomes.	1,2,3	10.00	n/a

No End of Module Formal Examination

**ITCarlow reserves the right to alter the nature and timings of assessment**

**Module Workload**

<b>Workload: Full Time</b>		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	12 Weeks per Stage	2.00
Laboratory	12 Weeks per Stage	2.00
Estimated Learner Hours	15 Weeks per Stage	5.13
	Total Hours	125.00

**Module Delivered In**

<b>Programme Code</b>	<b>Programme</b>	<b>Semester</b>	<b>Delivery</b>
CW_KWCCD_B	<a href="#">Bachelor of Science (Honours) in Creative Computing and Digital Innovation</a>	4	Mandatory
CW_KCCYB_B	<a href="#">Bachelor of Science (Honours) in Cyber Crime and IT Security</a>	4	Mandatory
CW_KCCIT_B	<a href="#">Bachelor of Science (Honours) in Information Technology Management</a>	4	Mandatory
CW_KCCYB_D	<a href="#">Bachelor of Science in Cybercrime and IT Security</a>	4	Mandatory
CW_KCCSY_D	<a href="#">Bachelor of Science in Information Technology Management</a>	4	Mandatory