NETW: Networking: Wireless and Routing Concepts

Module Title:	Networking: Wireless and Routing Concepts
Language of Instruction:	English

Credits:	5

NFQ Level:	6

Module Delivered In	5 programme(s)

Teaching & Learning Strategies:	A combination of traditional lectures and laboratory sessions will be employed. The laboratory sessions will allow for regular formative assessment and feedback.

Module Aim:	To provide learners with an appreciation of the characteristics, functionality and management of wireless LANs and Inter-network communications.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
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.

Pre-requisite learning
Module Recommendations *This is prior learning (or a practical skill) that is recommended before enrolment in this module.*
No recommendations listed
Incompatible Modules *These are modules which have learning outcomes that are too similar to the learning outcomes of this module.*
No incompatible modules listed
Co-requisite Modules
No Co-requisite modules listed
Requirements *This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.*
No requirements listed

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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

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

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Module Workload

Workload: Full Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
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

Programme Code	Programme	Semester	Delivery
CW_KWCCD_B	Bachelor of Science (Honours) in Creative Computing and Digital Innovation	4	Mandatory
CW_KCCYB_B	Bachelor of Science (Honours) in Cyber Crime and IT Security	4	Mandatory
CW_KCCIT_B	Bachelor of Science (Honours) in Information Technology Management	4	Mandatory
CW_KCCYB_D	Bachelor of Science in Cybercrime and IT Security	4	Mandatory
CW_KCCSY_D	Bachelor of Science in Information Technology Management	4	Mandatory