Module Title:	Network Systems Management
Language of Instruction:	English

Credits:	10

NFQ Level:	8

Module Delivered In	No Programmes

Teaching & Learning Strategies:	Lecture, Lab Activities and Practicals – there is a high practical lab component to this course, with lab activities designed to complement the taught material. Students will deploy the tools and technologies studied.

Module Aim:	To prepare the student to manage, maintain and secure networks and the systems that they interconnect.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Manage a diverse and heterogeneous collection of network-attached devices.
LO2	Recommend and plan the implementation of a network security strategy based upon an organizations identified requirements.
LO3	Monitor the effectiveness of various network technologies.
LO4	Perform network and application log analyses and audits.
LO5	Deploy and manage a collection of network management tools and services.

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.*
3rd year Networking and Systems Administration or equivalent

Module Content & Assessment

Indicative Content
Local and Wide-area Networks Review of technology; equipment and requirements for internetwork connections.
Security Security virtues, rules and high-level practices.
Internet security E-mail security, encryption, firewalls, secure protocols.
Network management Overview, management information base, agents, proxies, common protocols and implementations, performance monitoring, congestion control.
Network management tools and servers Firewalls, IDS, SNMP-based tools, vulnerability scanners, Internet servers (web, email).

Assessment Breakdown	%
Continuous Assessment	40.00%
End of Module Formal Examination	60.00%

Continuous Assessment				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Written Report	Continuous Assessment and Examination. Example CA/exercises to include (but not limited to): • Based on a provided case-study organisation, draft a security strategy document (LO2). • Use Nessus and Nmap to test pre-configured systems for weaknesses (LO1,3,4). • Use Webalizer to monitor web server activity. Write a script to process a web server log file for suspicious behaviour (LO1,4). • Install, configure and operate the SNORT IDS (LO1,5). • Install and operate a firewall over a fi	1,2,3,4,5	40.00	n/a

No Project

No Practical

End of Module Formal Examination				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	No Description	1,2,3,4,5	60.00	End-of-Semester

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

Module Workload

Workload: Full Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
Lecture	30 Weeks per Stage	2.00
Laboratory	30 Weeks per Stage	2.00
Estimated Learner Hours	30 Weeks per Stage	2.67
	Total Hours	200.00