

Module Title:	Secure Systems Administration
Credits:	10
NFQ Level:	6
Module Delivered In	7 programme(s)
Teaching & Learning Strategies:	As well as traditional lectures learners will undertake various laboratory exercises. Learners will be expected to actively participate in class on the materials covered and work throughout each scheduled lab session to accomplish assigned tasks.
Module Aim:	To provide learners with a theoretical knowledge and practical skills required for deploying and administering IT systems securely.

Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Identify and diagnose problems on various computing platforms
LO2	Demonstrate practical and theoretical knowledge in managing/administering IT networked systems and services securely.
LO3	Understand and implement a DNS, DHCP and Web servers.
LO4	Analyse and understand the security effects of network implementations.
LO5	Investigate and employ network monitoring and analysis tools
LO6	Understand the role of regulation such as GDPR

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

Workstation administration

Operating system installation and configuration; Installing hardware peripherals and corresponding drivers

Network administration:

Setup and sharing of device servers; installing application software; backup systems; system start-up and shutdown; system crash recovery; network services, DHCP, DNS, proxy, firewall, DMZ, monitoring and analysis network activity.

System security and monitoring

Virus protection; password and user authentication systems; process management; connection recording; encryption digital signatures and DDoS attack and mitigation strategies.

General administration activities

Setting up a company environment; adding, deleting and configuring objects and users. Implement file system repair; incremental backups, network and BYOD policy documentation, Security considerations migrating to the cloud. Scripting and automation of tasks,

Web-server configuration

Web-server installation, secure configuration and testing.

General Data Protection Regulation (GDPR)

How General Data Protection Regulation (GDPR) applies to Secure System Administration

Assessment Breakdown	%
Continuous Assessment	20.00%
Project	30.00%
End of Module Formal Examination	50.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Examination	Assessment on semester 1 content.	1,2,3	10.00	Sem 1 End
Examination	Assessment on semester 2 content.	4,5,6	10.00	Sem 2 End

Project

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Students will setup, configure and administer a network environment for an organisation.	2,3,4	15.00	Sem 1 End
Project	The student will prepare a report on an topic relating to IT systems security.	1,4,5	15.00	Sem 2 End

No Practical

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	The terminal exam will be a 3 hour written test	1,2,3,4,5,6	50.00	End-of-Semester

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

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	30 Weeks per Stage	2.00
Laboratory	30 Weeks per Stage	2.00
Estimated Learner Hours	30 Weeks per Stage	3.33
	Total Hours	220.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_KCCYB_B	Bachelor of Science (Honours) in Cyber Crime & IT Security	2	Mandatory
CW_KCCIT_B	Bachelor of Science (Honours) in Information Technology Management	2	Mandatory
CW_KCCYB_D	Bachelor of Science in Cyber Crime & IT Security	2	Mandatory
CW_KCCSY_D	Bachelor of Science in Information Technology Management	2	Mandatory
CW_KWCCD_B	BSc (Honours) in Creative Computing and Digital Innovation	2	Mandatory
CW_KWCAP_C	Higher Certificate in Computing	2	Mandatory
CW_KCCOM_C	Higher Certificate in Science in Computing (Applications or Programming)	2	Group Elective 2