

<b>Module Title:</b>	Networking 2
<b>Language of Instruction:</b>	English
<b>Credits:</b>	5
<b>NFQ Level:</b>	6
<b>Module Delivered In</b>	<a href="#">8 programme(s)</a>
<b>Teaching &amp; Learning Strategies:</b>	Combination of lectures and practical laboratory sessions. Lectures will take the form of traditional theory and tutorials. Laboratory sessions take the form of individual & group work.
<b>Module Aim:</b>	To provide the student with: 1. An understanding of IPv4 and IPv6 addressing. 2. a systematic understanding of WANs and basic routing concepts. 3. the skills required to build a basic Wide Area Network
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Demonstrate an understanding of the encapsulation process and the fundamentals of computer network security
LO2	Explain IPv4 and IPv6 addressing & sub-netting including variable length subnet masks
LO3	Demonstrate competence in configuring routers to implement basic WANs
<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
<b>Basic Router Commands</b> Basic commands required for initial router configuration
<b>IPv4 Addressing</b> Structure and use of IPv4 addresses, sub-netting and variable length subnet masks
<b>IPv6 Addressing</b> Structure and use of IPv6 addresses, SLACC concepts
<b>ICMP</b> Role of ICMP in Ethernet networks
<b>Transport Layer</b> Segmentation process, sequence numbers, role of port numbers, TCP/UDP
<b>Application Layer</b> Application Layer protocols - DNS, DHCP, SSH, HTTP, HTTPS
<b>Network Security Fundamentals</b> Basic network device security, encrypted passwords, securing access
<b>Build a basic Wide Area Network</b> Basic router configuration to enable data transfers between networks

Assessment Breakdown	%
Continuous Assessment	100.00%

Continuous Assessment				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Other	Two practical examinations to assess the student's knowledge of basic router configuration and their ability to build simple wide area networks	3	40.00	n/a
Practical/Skills Evaluation	Weekly practical/laboratory work is designed to allow students to demonstrate the achievement of the learning outcomes	1,3	20.00	n/a
Other	The students will be given two online tests to assess their understanding of IPv4 and IPv6 addressing and basic network security	1,2	20.00	n/a
Examination	The students will be given a written test to assess their knowledge of the encapsulation process, subnetting, variable length subnet masks and routing concepts	1,2	20.00	n/a

No Project

No Practical

No End of Module Formal Examination

SETU Carlow Campus 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	1.00
Laboratory	12 Weeks per Stage	2.00
Estimated Learner Hours	15 Weeks per Stage	5.13
Tutorial	12 Weeks per Stage	1.00
Total Hours		125.00

**Module Delivered In**

Programme Code	Programme	Semester	Delivery
CW_KWCCD_B	<a href="#">Bachelor of Science (Honours) in Creative Computing and Digital Innovation</a>	2	Mandatory
CW_KCCYB_B	<a href="#">Bachelor of Science (Honours) in Cyber Crime and IT Security</a>	2	Mandatory
CW_KCCIT_B	<a href="#">Bachelor of Science (Honours) in Information Technology Management</a>	2	Mandatory
CW_KCSOF_B	<a href="#">Bachelor of Science (Honours) in Software Development</a>	2	Mandatory
CW_KCCYB_D	<a href="#">Bachelor of Science in Cybercrime and IT Security</a>	2	Mandatory
CW_KCCSY_D	<a href="#">Bachelor of Science in Information Technology Management</a>	2	Mandatory
CW_KCSOF_D	<a href="#">Bachelor of Science in Software Development</a>	2	Mandatory
CW_KCCOM_C	<a href="#">Higher Certificate in Science in Computing Programming</a>	2	Mandatory