

## NETW C7020: Internetworking

Module Details	
Module Code:	NETW C7020
Full Title:	Internetworking <b>APPROVED</b>
Valid From:	Semester 1 - 2019/20 ( June 2019 )
Language of Instruction:	English
Duration:	2 Semesters
Credits:	10
Module Owner::	Paula Keane
Departments:	Unknown
Module Description:	The aim of this module is to provide the student with a thorough knowledge of key networking technologies and have the ability to configure and troubleshoot Local Area and Wide Area Networks

Module Learning Outcome	
On successful completion of this module the learner will be able to:	
#	Module Learning Outcome Description
MLO1	Discuss in detail, the IP protocol:- its operation, structure and addressing.
MLO2	Design, Calculate and apply IPv4 subnet masks and addresses to fulfil given network requirements.
MLO3	Explain static and dynamic routing, how link state and distance vector routing protocols operate, and be able to determine how a router will forward traffic based on the contents of a routing table.
MLO4	Configure and troubleshoot routers in a LAN and WAN and use monitoring tools on an Ethernet LAN.
MLO5	Discuss the role and operation of the ICMP protocol in networking.
MLO6	Detail how spanning tree operates and outline the benefits of it.
MLO7	Configure and troubleshoot Switches, Vlans, Spanning Tree Protocol and Trunking.
MLO8	Outline the purpose and operation of Transport Layer Protocols.
MLO9	Configure and troubleshoot DHCP and DNS.
Pre-requisite learning	
<p><b>Module Recommendations</b>  <i>This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named DkIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).</i></p>	
No recommendations listed	

<b>Module Indicative Content</b>	
<b>IP addressing</b> IP address review, subnetting and VLSM.	
<b>Routing Concepts</b> Operations of a router, routing tables and route lookup process.	
<b>Static and default routing</b> Understand, configure, troubleshoot and implement static and dynamic routing.	
<b>Distance vector routing protocols</b> Configure, troubleshoot and implement distance vector routing protocols.	
<b>Link State routing protocols</b> Configure, troubleshoot and implement link state routing protocols.	
<b>Transport Layer Protocols</b> TCP and UDP.	
<b>Introduction to Switched Networks</b> Basic switching concepts and configuration.	
<b>VLANs</b> Introduction to VLAN concepts, VLAN configuration and troubleshooting, Inter-VLAN routing.	
<b>LAN redundancy</b> Understand and describe spanning tree technologies.	
<b>Application Technologies</b> Configure and troubleshoot DHCP and DNS.	
<b>Module Assessment</b>	
<b>Assessment Breakdown</b>	<b>%</b>
Course Work	40.00%
Final Examination	60.00%
<b>Module Special Regulation</b>	

**Assessments**

**Full Time**

Course Work			
<b>Assessment Type</b>	Class Test	<b>% of Total Mark</b>	10
<b>Marks Out Of</b>	100	<b>Pass Mark</b>	40
<b>Timing</b>	Week 13	<b>Learning Outcome</b>	1,2,3,4
<b>Duration in minutes</b>	120		
<b>Assessment Description</b> A practical evaluation of the students ability to configure and troubleshoot an Internetwork			
<b>Assessment Type</b>	Class Test	<b>% of Total Mark</b>	5
<b>Marks Out Of</b>	100	<b>Pass Mark</b>	40
<b>Timing</b>	Week 13	<b>Learning Outcome</b>	1,2,3
<b>Duration in minutes</b>	120		
<b>Assessment Description</b> Written test to assess knowledge of IP and routing at the end of semester 1.			
<b>Assessment Type</b>	Continuous Assessment	<b>% of Total Mark</b>	5
<b>Marks Out Of</b>	100	<b>Pass Mark</b>	40
<b>Timing</b>	Every Second Week	<b>Learning Outcome</b>	1,2,3,4,5
<b>Duration in minutes</b>	60		
<b>Assessment Description</b> Biweekly short assessments used to monitor students progress commencing in week 3			
<b>Assessment Type</b>	Class Test	<b>% of Total Mark</b>	5
<b>Marks Out Of</b>	100	<b>Pass Mark</b>	40
<b>Timing</b>	Week 20	<b>Learning Outcome</b>	3,5,9
<b>Duration in minutes</b>	120		
<b>Assessment Description</b> Class test in week 20			
<b>Assessment Type</b>	Class Test	<b>% of Total Mark</b>	15
<b>Marks Out Of</b>	100	<b>Pass Mark</b>	40
<b>Timing</b>	Week 26	<b>Learning Outcome</b>	1,2,3,4,5,6,7,9
<b>Duration in minutes</b>	120		
<b>Assessment Description</b> A practical evaluation of the students ability to implement switching and routing technologies.			
No Project			
No Practical			
Final Examination			
<b>Assessment Type</b>	Formal Exam	<b>% of Total Mark</b>	60
<b>Marks Out Of</b>	100	<b>Pass Mark</b>	40
<b>Timing</b>	End-of-Semester	<b>Learning Outcome</b>	1,2,3,4,5,6,7,8
<b>Duration in minutes</b>	180		
<b>Assessment Description</b> End of year formal exam			
Part Time			

Course Work			
<b>Assessment Type</b>	Class Test	<b>% of Total Mark</b>	10
<b>Marks Out Of</b>	0	<b>Pass Mark</b>	0
<b>Timing</b>	Week 13	<b>Learning Outcome</b>	1,2,3,4
<b>Duration in minutes</b>	0		
<b>Assessment Description</b> A practical evaluation of the students ability to configure and troubleshoot an Internetwork			
<b>Assessment Type</b>	Continuous Assessment	<b>% of Total Mark</b>	5
<b>Marks Out Of</b>	100	<b>Pass Mark</b>	40
<b>Timing</b>	Every Second Week	<b>Learning Outcome</b>	1,2,3,4,5
<b>Duration in minutes</b>	0		
<b>Assessment Description</b> Biweekly short assessments used to monitor students progress commencing in week 3			
<b>Assessment Type</b>	Class Test	<b>% of Total Mark</b>	5
<b>Marks Out Of</b>	100	<b>Pass Mark</b>	40
<b>Timing</b>	Sem 1 End	<b>Learning Outcome</b>	1,2,3
<b>Duration in minutes</b>	60		
<b>Assessment Description</b> Written test to assess knowledge of IP and routing at the end of semester 1.			
<b>Assessment Type</b>	Class Test	<b>% of Total Mark</b>	5
<b>Marks Out Of</b>	100	<b>Pass Mark</b>	40
<b>Timing</b>	Week 20	<b>Learning Outcome</b>	3,5,9
<b>Duration in minutes</b>	60		
<b>Assessment Description</b> Class test in week 20			
<b>Assessment Type</b>	Class Test	<b>% of Total Mark</b>	15
<b>Marks Out Of</b>	100	<b>Pass Mark</b>	40
<b>Timing</b>	Week 26	<b>Learning Outcome</b>	1,2,3,4,6,7,9
<b>Duration in minutes</b>	120		
<b>Assessment Description</b> A practical evaluation of the students ability to implement switching and routing technologies.			
No Project			
No Practical			
Final Examination			
<b>Assessment Type</b>	Formal Exam	<b>% of Total Mark</b>	60
<b>Marks Out Of</b>	100	<b>Pass Mark</b>	40
<b>Timing</b>	End-of-Semester	<b>Learning Outcome</b>	1,2,3,5,6,7,8
<b>Duration in minutes</b>	180		
<b>Assessment Description</b> Final exam			
Reassessment Requirement			
<b>Reattendance</b> <i>The assessment of this module is inextricably linked to the delivery. Therefore reassessment on this module will require the student to reattend (i.e. retake) the module in its entirety.</i>			

**Module Workload**

<b>Workload: Full Time</b>					
<i>Workload Type</i>	<i>Contact Type</i>	<i>Workload Description</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>	<i>Hours</i>
Lecture	Contact	No Description	Every Week	1.00	1
Tutorial	Contact	No Description	Every Week	1.00	1
Practical	Contact	No Description	Every Week	2.00	2
Directed Reading	Non Contact	No Description	Every Week	1.00	1
Independent Study	Non Contact	No Description	Every Week	3.00	3
Total Weekly Learner Workload					8.00
Total Weekly Contact Hours					4.00
<b>Workload: Part Time</b>					
<i>Workload Type</i>	<i>Contact Type</i>	<i>Workload Description</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>	<i>Hours</i>
Lecture	Contact	No Description	Every Week	1.00	1
Tutorial	Contact	No Description	Every Week	1.00	1
Practical	Contact	No Description	Every Week	2.00	2
Directed Reading	Non Contact	No Description	Every Week	1.00	1
Independent Study	Non Contact	No Description	Every Week	3.00	3
Total Weekly Learner Workload					8.00
Total Weekly Contact Hours					4.00

## Module Resources

### *Recommended Book Resources*

**Behrouz A Forouzan. (2012), Data Communications and Networking, 5e. McGraw-Hill Higher Education, [ISBN: 0071315861].**

*This module does not have any article/paper resources*

### *Other Resources*

[Website], Cisco Inc.. Home Page,  
<http://www.cisco.com>