

SUMMARY OF INFORMATION ON EACH COURSE

1.	Name of Course	Computer Networks	
2.	Course Code	TCN 2141	
3.	Status of Course [Applies to (cohort)]	Specialisation Core for B.IT (Hons) Data Communications and Networking	
4.	MQF Level/Stage	Bachelor – MQF Level 6	
5.	Version (State the date of the Senate approval – history of previous and current approval date)	Date of previous version:	June 2012
		Date of current version:	June 2014
6.	Pre-Requisite	TDC1231 Data Communications and Networking	
7.	Name(s) of academic/teaching staff	Lew Sook Ling Anang Hudaya bin Muhamad Amin	
8.	Semester and Year offered	Trimester 1, Year 2	
9.	Objective of the course in the programme : To learn and to know the concepts of communication networks using TCP/IP protocols and its operations. Students are also expected to configure basic network topology and its components.		
10.	Justification for including the course in the programme : The success of an organization today will depend on its ability to deliver the services that its customers need. In today's world of the ever fast moving information overload, computer networking is the essential element that any organization will need to incorporate if it is to succeed. To understand Networking, you will need to become familiar with these three elements: Transmission medium provides a path for electrical signals between devices; Network interface are devices that send and receive electrical signals and Protocols are rules or standards that describe how hosts communicate and exchange data. Become familiar with these terms, because it will be used by IT. Professionals in the field.		
11.	Course Learning Outcomes :	Domain	Level
	LO1 Explain basic networking concepts including network layers, network devices and network topologies	Cognitive	Level 2
	LO2 Analyse the operation of the TCP/IP networks, including network protocols and routing algorithms.	Cognitive	Level 4
	LO3 Describe various networking technologies including Local Area Networks (LANs) and Wide Area Networks (WANs)	Cognitive	Level 6
	LO4 Design and configure basic network topologies for LANs and WANs	Cognitive	Level 5

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12.	Mapping of Learning Outcomes to Programme Outcomes :											
	Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9		
	LO1		X	X								
	LO2		X	X								
	LO3		X	X								
	LO4	X	X	X		X						
13.	Assessment Methods and Types :											
	Method and Type	Description/Details						Percentage				
	Final Exam	Written examination						60%				
	Test 1	Written examination						15%				
	Test 2	Written examination						15%				
	Lab/Tutorial	Laboratory test						10%				
14.	Mapping of assessment components to learning outcomes (LOs)											
	Assessment Components	%	LO1	LO2	LO3	LO4						
	Final Exam	60	66.67	60	66.67							
	Test 1	15	16.67	15	16.67							
	Test 2	15	16.67	15	16.67							
	Lab/Tutorial	10		10		100						
15.	Details of Course											
	Topics						Mode of Delivery					
							Lecture	Lab	Tutorial			
	1. Internetworking: Data link layer Physical addressing, Ethernet technology, Local Internetworking. Spanning Tree protocol (STP). STP Bridging. Virtual LAN, Layer 2 Switching.						4	4	2			
	2. Internetworking: Network layer Logical Addressing: IPv4 and IPv6 addresses. Internet Structure. IP protocol, IP Addressing scheme and subnetting, IPv4 Datagram format, fragmentation. Transition from IPv4 to IPv6						6	4	3			

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3. Internet and TCP/IP: Network Layer issues Address mapping using ARP, Internet Control Management Protocols (ICMP). Unicast Routing Protocols. Multicast Routing Protocols.		6	2	3
4. Internet and TCP/IP: Transport Layer Process-to-process delivery. Connectionless vs connection-oriented services. Transport protocols: UDP and TCP segment format and services.		4		2
5. Internet and TCP/IP: Applications Domain Name System. Electronic Mail. World Wide Web. Multimedia Over Internet		2		1
6. WAN technologies WAN Infrastructure, WAN Services: X.25, SONET, ISDN, Frame Relay.		2		1
7. Network Management, Security Network Management (SNMP), Network Security: Cryptography, Symmetric-Key Algorithm, Public Key Algorithm, Digital Signature, IPsec, Firewall. Network Performance issues.		2		1
Total		26	10	13
Total Student Learning Time (SLT)		Independent Learning		
Face to Face / Guided Learning				
Lecture	26	26		
Tutorials	13	13		
Laboratory/Practical	10	5		
Presentation	-	-		
Assignment	-	-		
Mid Term Test	2	8		
Final Exam	2	15		
Sub Total	53	67		
Total SLT	120			
16. Credit Value	3			
17. Reading Materials :				
Textbooks				
1. Behrouz Forouzan, (2007). Data Communications and Networking, 4 th Edition. McGraw-Hill.				
Reference Material (including 'Statutes' for Law)				
1. Tanenbaum, Andrew S., (2003). Computer Networks, 4 th Ed., New Jersey, Prentice Hall. ISBN: 0-13-038488-7.				

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2. James F Kurose, (2008). Computer Networking, A top-down approach featuring internet, 4th Edition, Prentice Hall. ISBN 0-321-26976-4.
3. Douglas E. Comer, Computer Networks and Internets, 4th Edition, Prentice.

Appendix (to be compiled when submitting the complete syllabus for the programme) :

1. Mission and Vision of the University and Faculty
2. Programme Objectives or Programme Educational Objectives
3. Programme Outcomes (POs)
4. Mapping of POs to the 8 MQF domain
5. Summary of the Bloom's Taxonomy's Domain Coverage in all the Los in the format below :

Subject	Learning Outcomes (please state the learning Outcomes)	Bloom's Taxonomy Domain		
		Affective	Cognitive	Psychomotor
ABC1234	Learning Outcome 1			
	Learning Outcome 2			
	Learning Outcome 3			
	Learning Outcome 4			
DEF5678	Learning Outcome 1			
	Learning Outcome 2			
	Learning Outcome 3			
	Learning Outcome 4			

6. Summary of LO to PO measurement
7. Measurement and Tabulation of result for LO achievement
8. Measurement Tabulation of result for PO achievement