

BATB308: Data Communications Technology

Module Code:	BATB308
Long Title	Data Communications Technology APPROVED
Title	Data Communications Technology
Module Level:	LEVEL 7
EQF Level:	6
EHEA Level:	First Cycle
Credits:	5
Module Coordinator:	AKARI DEVELOPER
Module Author:	AKARI DEVELOPER
Departments:	
Specifications of the qualifications and experience required of staff	
Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
#	Learning Outcome Description
LO1	LO 1. Understand the theory, concepts and principles of data communications and its relevance to the commercial world.
LO2	LO 2. Have an understanding of the theory, concepts, principles, issues and limitations of network technologies including Wireless and Mobile Communications, Local Area Networks, Wide Area Networks and Internet technologies and how these technologies are used to support business.
LO3	LO 3. Be able to transfer and apply theoretical concepts to a range of contexts and problems in the 'real world' where data networks are used to support business
LO4	LO 4. Recognise current and future data communications and networking trends which benefit business and provide competitive advantage
Dependencies	
Module Recommendations	
No recommendations listed	
Co-requisite Modules	
No Co-requisite modules listed	
Entry requirements	

BATB308: Data Communications Technology

Module Content & Assessment	
Indicative Content	
Introduction to Data Communication (10%) Data Communication Distributed processing Categories of networks The Internet Protocols and standards Business benefits	
Network Models (10%) Layered architecture Encapsulation Peer-to-peer processes Internet model OSI model	
Digital and Analogue Transmission (10%) Analogue and digital signals Analogue-to-digital conversion (sampling, quantisation) Digital-to-analogue conversion (digital modulation) Analogue-to-analogue conversion (amplitude modulation, frequency modulation)	
Transmission Media (10%) Twisted-pair cable Co-axial cable Fibre-optic cable Radio waves Microwaves Infrared	
Local Area Networks (10%) Traditional Ethernet Ethernet addressing Bridged Ethernet Switched Ethernet Full-Duplex Ethernet Fast Ethernet Gigabit Ethernet	
Connecting LANs and Backbone Networks (10%) Repeater Hub Bridge Switch Router Gateway Backbone networks	
Wireless and Mobile Communications (10%) Wired vs. Wireless LAN IEEE 802.x Wireless LAN Standards Wireless LAN security Bluetooth standard Bluetooth applications GSM and GPRS 3G mobile Wireless Application Protocol (WAP)	
Wide Area Networks (WANs) (10%) Point-to-Point Protocol (PPP) Digital Subscriber Line (DSL) Integrated Services Digital Network (ISDN) X.25 and Frame Relay Asynchronous Transfer Mode (ATM) Multiprotocol Label Switching (MPLS)	
The TCP/IP Protocol Suite (10%) TCP/IP versions Addressing Classes Special addresses Unicast, multicast and broadcast addresses Private networks	
Private Networks, Virtual Private Networks and Network Address Translation (10%) Private networks Intranet Extranet Private addressing Virtual private networks (VPN) Network address translation (NAT)	
Teaching Methodology Lectures, tutorials, laboratory practicals.	
Assessment Breakdown	%
Coursework	40.00%
End of Module Assessment	60.00%

Assessments

Full Time			
Coursework			
Assessment Type:	Assignment	% of total:	40
Assessment Date:	n/a	Outcome addressed:	1,2,3,4
Non-Marked:	No		
Assessment Description:	n/a		
End of Module Assessment			
Assessment Type:	Terminal Exam	% of total:	60
Assessment Date:	End-of-Semester	Outcome addressed:	1,2,3,4
Non-Marked:	No		
Assessment Description:	End-of-Semester Final Examination		
No Workplace Assessment			

BATB308: Data Communications Technology

Module Workload				
Module Target Workload Hours 0 Hours				
Workload: Full Time				
Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	No Description	2	Every Week	2.00
Total Weekly Contact Hours				2.00
Workload: Part Time				
Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	No Description	2	Every Week	2.00
Total Weekly Contact Hours				2.00

Module Resources	
<i>Recommended Book Resources</i>	
Forouzan, B.. (2003),) Introduction to Data Communications and networking, 3rd ed. , McGraw-Hill Education, International Editions NewYork.	
<i>Supplementary Book Resources</i>	
<p>Forouzan, B. (2003), TCP/IP Protocol Suite, 3rd ed. McGraw-Hill International Editions.</p> <p>Goldman, J.E., Rawless P.T. (2004), Applied Data Communications – A Business Oriented Approach, 4th ed. John Wiley & Sons.</p> <p>Panko, R. R.. (2004), Business Data Communications and Networking., 5th ed. Prentice Hall.</p> <p>Tanenbaum, A. S. (2003), Computer Networks, 4th edInternational Edition. , Prentice-Hall International Editions.</p> <p>Dietel, H.M., Dietel, P.J., Nieto, T.R.& Steinbuhler, K. (2002), Wireless Internet & Mobile Business, Prentice Hall, New Jersey.</p>	
<i>This module does not have any article/paper resources</i>	
<i>Other Resources</i>	
<p>[Websites], Networking Essentials Notes.</p> <p>[Websites], http://www.geocities.com/SiliconValley/Monitor/3131/ne/netoc.html.</p>	
Discussion Note:	