southwark college

SCHEME OF WORK

Networking Fundamentals: CCNA1 Exploration

QUAL CODE:		EXAM BOARD: Edexcel		MODE OF ATTENDANCE: Full Time		NAME: Angela Russell		YEAR: 2008

Wk	Ref	Topic/Assessment Criteria	Learning Outcomes	Learning Activities	Learning Checks	Resources	KS/FS	Targets and Differentiation
1	Cisco Ch0	**Introduction to the Unit** Icebreaker	Introduction to the unit. Learn about network interface cards and ipconfig. Learn how to configure a NIC and connect to the Internet. Use ping to test connectivity.	**Lab**: configuring a network card **Lab**: testing the connectivity of a NIC **Lab**: implication of DNS **Q/A**: technical terms	Labs Q/A One-One	Cisco labs and notes. Folder101 notes, quizzes activities.	*C3 contribute to a discussion* *PS3. explore, plan, implement a problem solution, check solution* *LP3 practical work*	All learners should be able to complete the lab work
2	Cisco Ch6	**IP Addresses and Subnet Masks** Preparation for Later	Learn about IP addresses and subnet masks. Decimal, Binary, Hexadecimal conversions. Logical AND operation.	**Lab**: Math exercises **Lab**: IP address and subnet mask problems **Q/A**: technical terms **Quiz 1a**: Basics	Labs Q/A Quiz One-One	Cisco labs and notes. Folder101 notes, quizzes activities.	*N3. use formulae, carry out calculations, interpret results* *LP3 practical work.*	All learners should be able to complete the basic binary exercises. Some learners will need extra help with calculating addresses and subnet masks
3	Cisco Ch1	**Living in a Network Centric World** Chapter 1	Understand the concepts of networks, local area networks, wide area networks, quality of service (QoS), security issues, and network collaboration services.	**Lab**: setting up a wiki **Lab**: establish an IM session **Lab**: intro to packet tracer **Q/A**: technical terms **Quiz 1b**	Labs Q/A Quiz One-One Chapter Test	Cisco labs and notes. Folder101 notes, quizzes activities.	*WO3 plan, cooperate, review work with others* *PS3. explore, plan, implement and check a solution* *LP3 practical work*	All learners should be able to complete the lab work. Some learners will have difficulty remembering terminology. Revision notes and quizzes should help.
4	Cisco Ch2	**Communicating Over the Network** Chapter 2 ~Chapter 2 Test~	Understand the OSI and TCP/IP models and data encapsulation. Learn about the network tool Wireshark®, which is used for analyzing network traffic. Build your first network.	**Lab** : use Wireshark to view Primary Data Units **Lab** : build your first small peer-peer network **Q/A**: technical terms **Quiz 2a & 2b**	Labs Q/A Quiz One-One Chapter Test	Cisco labs and notes. Folder101 notes, quizzes activities.	*WO3 plan, cooperate, review work with others* *PS3. explore, plan, implement and check a solution* *LP3 practical work*	All learners should be able to complete the lab work. Some learners will find the OSI model challenging. Further clarification in later chapters will help.

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5	Cisco Ch3	**Application Layer Functionality and Protocols** Chapter 3 ~Chapter 3 Test~	Learn about the topmost OSI layer – the Application layer. Become familiar with protocols and services that operate at that layer, such as HTTP, DNS, DHCP, SMTP/POP, Telnet and FTP.	**Lab**: install a web server/client and analyze network traffic **Lab**: install an email service and analyze traffic **Q/A**: technical terms **Quiz 3a & 3b**	Labs Q/A Quiz One-One Chapter Test	Cisco labs and notes. Folder101 notes, quizzes activities.	*WO3 plan, cooperate, review work with others PS3. explore, plan, implement and check a solution LP3 practical work*	All learners should be able to complete the first lab work. Some learners will manage the second lab too. Lab work will help learners remember the protocols.
6	Cisco Ch4	**OSI Transport Layer** Chapter 4 ~Chapter 4 Test~	Learn about the OSI Transport layer and how the TCP and UDP protocols apply to applications. Understand the difference between TCP and UDP.	**Lab**: observe TCP/UDP using Netstat & Wireshark **Lab**: capture and analyze FTP/TFTP traffic **Q/A**: technical terms **Quiz 4a & 4b**	Labs Q/A Quiz One-One Chapter Test	Cisco labs and notes. Folder101 notes, quizzes activities.	*WO3 plan, cooperate, review work with others PS3. explore, plan, implement and check a solution LP3 practical work*	All learners should be able to complete the first lab work. Some learners will complete the second lab too. Q/A will help reinforce terminology
7	Cisco Ch5	**OSI Network Layer** Chapter 5 ~Chapter 5 Test~	Learn about the OSI Network layer. Examine the concepts of addressing and routing and learn about path determination, data packets, and the IP protocol.	**Lab**: examine a gateway **Lab**: the route command, Telnet to a router and issue basic commands **Q/A**: technical terms **Quiz 5a & 5b**	Labs Q/A Quiz One-One Chapter Test	Cisco labs and notes. Folder101 notes, quizzes activities.	*WO3 plan, cooperate, review work with others PS3. explore, plan, implement and check a solution LP3 practical work*	All learners should be able to complete the first and second lab work. The quizzes are essential here to help with the difficult concept of routing.
8	Cisco Ch6	**Addressing the Network – Ipv4** Chapter 6 ~Chapter 6 Test~	Understand network addressing and subnet masks. Address classes. Private and public addresses. The CIDR mask. Calculating number of hosts and subnets.	**Lab**: ping and tracert **Lab**: Calculate host and subnet addresses **Q/A**: technical terms **Quiz 6a & 6b**	Labs Q/A Quiz One-One Chapter Test	Cisco labs and notes. Folder101 notes, quizzes activities.	*N3. use formulae, carry out calculations, interpret results LP3 practical work.*	All learners should be able to complete both labs. Most learners will be able to calculate simple subnets. Extra homework and online activities are available.
9	Cisco Ch6	**Addressing the Network – Ipv4** Chapter 6 Cont'd ~Chapter 6 Test~	More advanced calculation of network addresses and subnet masks. Explore the ICMP (Internet Control Message Protocol) tools, such as ping and trace.	**Lab**: design an IP addressing scheme **Lab**: use Wireshark to explore the ICMP protocol **Q/A**: technical terms **Quiz 6a & 6b**	Labs Q/A Quiz One-One Chapter Test	Cisco labs and notes. Folder101 notes, quizzes activities.	*N3. use formulae, carry out calculations, interpret results LP3 practical work.*	All learners should be able to complete both labs. Most learners will find calculating subnets challenging. Extra homework and online activities are available.

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10	Cisco Ch7	**Data Link Layer** Chapter 7 ~Chapter 7 Test~	Learn about the services provided by Data Link layer. Media Access Control. Understand the difference between Logical and Physical topologies. The Frame PDU.	**Lab**: use Wireshark to capture and analyze Ethernet II frame header fields **Q/A**: technical terms **Quiz 7a & 7b**	Labs Q/A Quiz One-One Chapter Test	Cisco labs and notes. Folder101 notes, quizzes activities.	*N3. use formulae, carry out calculations, interpret results PS3. explore, plan, implement and check a solution. LP3 practical work*	All learners should be able to complete the lab. All learners should understand the concepts. Q/A will help reinforce terminology. Extra homework/online activities are available.
11	Cisco Ch8	**OSI Physical Layer** Chapter 8 ~Chapter 8 Test~	Learn about the Physical layer and how data is encoded for travel across the network. Also learn about bandwidth, different types of media and connectors.	**Lab**: Create a straight-through UTP cable **Lab**: Create a crossover UTP cable **Q/A**: technical terms **Quiz 8a**	Labs Q/A Quiz One-One Chapter Test	Cisco labs and notes. Folder101 notes, quizzes activities.	*WO3 plan, cooperate, review work with others PS3. explore, plan, implement and check a solution LP3 practical work*	All learners should be able to make the first cable. Some will make both. All learners should understand the concepts. Extra homework/online activities are available
12	Cisco Ch9	**Ethernet** Chapter 9 ~Chapter 9 Test~	Examine and understand the technologies and operation of Ethernet. The LLC layer, Media Access Control, collisions and CMSA/CD. Address Resolution Protocol.	**Lab**: explore the Address Resolution Protocol **Lab**: explore a Cisco switch MAC CAM table **Q/A**: technical terms **Quiz 9a & 9b**	Labs Q/A Quiz One-One Chapter Test	Cisco labs and notes. Folder101 notes, quizzes activities.	*WO3 plan, cooperate, review work with others PS3. explore, plan, implement and check a solution. LP3 practical work*	All learners should be able to complete both labs. All learners should understand the concepts. Q/A will help reinforce terminology. Extra homework/online activities are available
13	Cisco Ch10	**Planning and Cabling Networks** Chapter 10 ~Chapter 10 Test~	Undertake the design and cabling of a network. Apply previously learnt knowledge and skills to select appropriate cables and develop an addressing and testing scheme.	**Lab**: design a network addressing scheme **Lab**: create, configure and cable the network **Q/A**: technical terms **Quiz 11a & 11b**	Labs Q/A Quiz One-One Chapter Test	Cisco labs and notes. Folder101 notes, quizzes activities.	*N3. use formulae, carry out calculations, interpret results PS3. explore, plan, implement and check a solution LP3 practical work*	All learners should be able to complete both labs. However, some will need extra help with the design and network addressing. Extra homework/online activities are available
14	Cisco Ch11	**Configuring and Testing Your Network** Chapter 11 ~Chapter 11 Test~	Learn some basic Cisco Router commands. Connect and configure a small network using basic commands for routers and switches. Test and troubleshoot the network.	**Lab**: configure a router with basic IOS commands **Lab**: test the network Q/A and flashcards **Quiz 10c**	Labs Q/A Quiz One-One Chapter Test	Cisco labs and notes. Folder101 notes, quizzes activities.	*N3. use formulae, carry out calculations, interpret results PS3. explore, plan, implement and check a solution LP3 practical work*	All learners should be able to complete both labs. All learners should understand the concepts. Q/A will help reinforce terminology. Extra homework/online activities are available

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15	Cisco Case Study	**Case Study** ~Practical Case Study and Skills Test~	Complete a practical case study and skills test that combines the Cisco Case Study and BTEC criteria.	**Practical Case Study**: design and create a small network.	Case Study Assessed Lab Work	Case Study & Skills Test Paper on Folder101	*PS3. PS3. explore, plan, implement and check a solution LP3 practical work*	The Case Study will be completed under test conditions and used for assessment. All should have the skills to cover the basics; some will be able to achieve the M and D criteria.
16	Cisco Test	**Practice and Final Test** ~Final Test~	Complete chapter tests on Wednesday. Take the Final Test on Friday.	The Final Cisco Test counts towards the pass criteria for BTEC. A score of at least 70% is needed for a pass.	Final Test results	Cisco online chapter and final test	*LP3: evaluate own progress, take and review tests*	The Final Test will prove challenging to all learners. The chapter tests should have prepared them for the final.
17	M1 to M3 D1 to D3	**Portfolio Arrangement Final Test Retake**	Portfolio arrangement & checks. Retake the final test if necessary.	Collect and check lab activities, case study and skills test that make up the portfolio of work.	Portfolio or Work. Final Test results	Cisco online chapter and final test.	*LP3: evaluate, review own progress*	Some learners will need to retake the Final Test. Practice quizzes are available.

Key Skills Mapping:

Communicating - C3.1a Contributing to a group discussion. C3.1b Giving a presentation. C3.2 Read & synthesise information. C3.3 Write two different documents

Application of Number - N3.1 Plan & interpret information. N3.2 Carry out calculations. N3.3 Interpret & present results

Information Technology - IT3.1 Plan how to obtain & use info sources. IT3.2 Explore, develop, exchange info & derive new info. IT3.3 Different presentations given - effective format & style