

Module Specification

Part One: ABOUT THE MODULE		
1a	Module title	Enterprise Networking Security and Automation
1b	Subject	BSc (Hons) Computer Networking and IT Security
1c	Location(s) module is offered	Islington College
1d	Courses Module is available on	On-Campus
2	Module code	CT6009NI
3	Module level and credit rating	Level 6 30
4	School	School of Computing and Digital Media
5	Teaching period	<i>Year Long (30 Weeks)</i>
6	Mode of attendance	<i>Day</i>
7	Module prerequisites and corequisites	<i>None</i>
8	Module description and aims	
	<p>Large enterprises depend heavily on the smooth operation of their network infrastructures. This final course in the CCNA series describes the architectures and considerations related to designing, securing, operating, and troubleshooting enterprise networks. It covers wide area network (WAN) technologies and quality of service (QoS) mechanisms used for secure remote access along with the introduction of software-defined networking, virtualization, and automation concepts that support the digitalization of networks.</p> <ol style="list-style-type: none"> 1. To provide a firm understanding of Security Policy design and management. 2. To introduce students to security technologies, products and solutions. 3. To provide students with practical experience of configuring firewalls and router security 4. To discuss VPN implementation using routers and firewalls 5. To introduce concepts of Intrusion Detection 6. To explain the implementation of AAA (Authentication, Authorisation and Accounting) 7. To explain the concepts of QoS, Virtualization, and Automation 	
9	Module learning outcomes	
	<p>On successful completion of this module, students should be able to:</p> <p>LO1: Work with routers and switches using OSPF in point-to-point and multiaccess networks.</p> <p>LO2: Mitigate threats and enhance network security using access control lists and security best practices.</p> <p>LO3: Develop critical thinking and problem-solving skills using real equipment and Cisco Packet Tracer.</p>	

	LO4: Understand virtualization, SDN, and how APIs and configuration management tools enable network automation.	
10	Indicative syllabus	
	<p>Network Security Concepts</p> <p>ACL</p> <p>NAT</p> <p>VPN and IPsec Concepts</p> <p>QoS Concepts</p> <p>Network Management</p> <p>Network Design</p> <p>Network Troubleshooting</p> <p>Network Virtualization</p> <p>Network Automation</p>	<p>LO1, LO2, LO3, LO4</p>
11	Indicative bibliography and key on-line resources	
	<ol style="list-style-type: none"> 1. Enterprise Networking, Security, and Automation Companion Guide (CCNAv7) - Cisco Systems Inc. 2. Understanding Cisco Networking Technologies – Todd Lammle 3. CCNA v7 Labs and Study Guide – Cisco Networking Academy 	
12	What is the balance of independent study and scheduled teaching activity within the module, the approach to blended learning and the opportunities for reflective learning/PDP?	
	<p>Students will develop understanding and practical investigative skills based on weekly lectures, tutorials, and supervised workshops. The teaching sessions will utilise examples/case studies as a platform for understanding security threats and how to counter them. The workshops are provided to support students in gaining practical experience in computer security and digital forensic investigations, within a dedicated laboratory.</p> <p>Students are provided with access to the on-line curriculum and encouraged to read the material prior to lecture sessions. On the completion of a lecture on a specific chapter, the study is supported by hands-on tutorial and lab sessions. The students are provided with mock assessments during the mid of the semester. Electronic simulations, quizzes, and interactive multimedia activities are also available to encourage deep thinking and self-development of students.</p> <p>Appropriate blended learning approaches and technologies, such as, the University's VLE and computer security tools, will be used to facilitate and support student learning to:</p> <ul style="list-style-type: none"> • deliver content; • encourage active learning; • provide formative and summative assessments, and prompt feedback; • enhance student engagement and learning experience. <p>Students will be expected and encouraged to produce reflective commentaries on the learning activities and tasks that they carry out to complete their work.</p> <p>Students will be expected and encouraged to produce reflective commentaries and an action plan for personal development on the learning activities and tasks that they carry out to complete their work, e.g., in the form of an assessed section of their coursework report/essay</p>	

Method		Description		Learning hours	
Scheduled Learning & Teaching		Lecture/Tutorials/Workshops/Seminars/Drop-ins		30 weeks x 3 hours = 90 hours (30%)	
Guided independent study		Self-study		139 hours	
Assessment preparation/delivery		Research, Solution Design, Development and Reporting/Documenting		71 hours = 210 hours (70%)	
Placement/study abroad		N/A		N/A	
TOTAL LEARNING HOURS FOR THE MODULE				300 Hours	
13	Description of assessment items.				
	<p>There are Two main tests at the end of each semester. Each test is a 2-hour practical examination based on cisco packet tracer and carries 50 % of the module weightage.</p> <p>Students are provided hands-on practical experience of the theoretical concept of each chapter. The lecture session is followed by tutorial and lab sessions, where initially students are provided a guided learning and then they are asked to perform lab activities themselves. Immediate feedback and detailed guidelines on how to improve is provided to the students immediately. Mock assessments are carried out at the middle of each semester.</p>				
Description of Assessment		Assessment weighting	Qualifying Marks	Week Due	Learning Outcome/s
Practical Examination	Unseen Cisco Packet Tracer Based Practical Examination 1	50%	N/A	15	LO1, LO2, LO3, LO4
Practical Examination	Unseen Cisco Packet Tracer Based Practical Examination 2	50%	N/A	29	LO1, LO2, LO3, LO4

Part Two: SCHOOL USE		
14	Nominated External Examiner	
15	Nominated Module Leader at time of approval	

Part Three: OFFICIAL USE AND CODES – <i>responsibility for completion is as indicated</i>		
1 6	Original date of validation (AQD)	
1 7	Revision date (specify cohort) (AQD)	
1 8	Module specification version number (AQD)	
1 9	SITS Mark Scheme (Student Journey)	
2 0	Subject Standards Board Name (Student Journey)	