



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Wales Institute of Science and Art
Applied Computing

L4 - Network and Cybersecurity Essentials (NCE) (ACCA4024)
MILESTONE - Academic Year 2022-23 (Sep 2022) - Sem 1

Lecturer: Nitheesh Murugan Kaliyamurthy, Munyaradzi Murira

Contact: n.kaliyamurthy@uwtsd.ac.uk; m.murira@uwtsd.ac.uk

To provide with an understanding of the key concepts and fundamentals of data communications, computer networks and security of data and devices in a network

Week	Unit(s) Covered	Additional	Labs
Week 1 (03/10/2022)	Introduction to Networks, Network Types, Components and its Applications	Task 1: Complete Introduction to Packet Tracer Course from Netacad.com and submit on or before 10th October 2022	Cisco Networking Activity
Week 2 (10/10/2022)	Principles of Communications, Network Models and Protocols, Ethernet Frames, Local Networks, Routing across Networks.		Cisco Networking Activity
Week 3 (17/10/2022)	IP Addressing (v4 & v6)		Cisco Networking Activity
Week 4 (24/10/2022)	Packet Encapsulation, Network and Endpoint Security		Cisco Networking Activity
Week 5 (31/10/2022)	Network Security Principles, Building and securing and Troubleshooting Home Networks		Setting up Virtual Machines (Pre-configured Ubuntu VM)
Week 6 (07/11/2022)	Reading/Mid-Assessment Week	COMPONENT 2 (Class Test) - Compulsory 1 Hour	
Week 7 (14/11/2022)	Cyber Essentials: Cyber Security, Understand Network and Cyber Security. Cyber Security Cube, CIA Triad, Countermeasures and Security Management Framework		(Palo Alto) Activity

Week 8 (21/11/2022)	Cyber Threats, Vulnerabilities and Attacks		(Palo Alto) Activity
Week 9 (28/11/2022)	Cybersecurity Design Models, Security Operating Platform		(Palo Alto) Activity
Week 10 (05/12/2022)	Cryptography, Access Control, Obscuring Data, Data Integrity, Digital Signatures, Availability, Incident Response and Disaster Recovery.		(Palo Alto) Activity
Week 11 (12/12/2022)	Defending Systems, Server Hardening, Network Hardening, Physical Security		Packet Tracer Activity
Assessment			
	Outcome	Deadline	
Component 1 50%	Demonstrate systematic understanding of security policies and measures to mitigate internal and external attacks and threats in a network	06/01/2023	Coursework
Component 2 50%	Develop fundamental understanding of network basics in terms of architecture, devices, application and protocols	07/11/2022	Class Test
Readings			
Book	William Stallings (2014) Data and Computer Communications, 10th Edition, Pearson		
Book	William Stallings (2017) Network Security Essentials: Applications and Standards, 6th Edition, Pearson		
Book	J. S. Beasley & P. Nilkaew (2018) Networking Essentials: A CompTIA Network+ N10-007 Textbook, 5th Edition, Pearson IT Certification		
Resources	Network Essentials, Cybersecurity Essentials (Cisco), Network Security Fundamentals, Cybersecurity Foundation (Palo Alto)		Optional
Resources	(User Login Required) www.netacad.com https://paloaltonetworksacademy.net		*