Course Name (English)	FUNDAMENTALS OF NETWORK SECURITY APPROVED
Course Code	ECE643

MQF Credit	3

Course Description	This course covers basic principle of core security technologies and infrastructure. This is achieved by recognizing vulnerabilities to networks and mitigates potential security threats including intrusion prevention system and traffic filtering. The network security aspects such as computer virus, firewall and establish security policy are also considered.

Transferable Skills	Problem solving, organising, decision making and research skills.

Teaching Methodologies	Lectures, Blended Learning, Lab Work

CLO	
	CLO1 Identify network security threats and mitigation techniques.
	CLO2 Implement security features to provide secure solutions.
	CLO3 Utilize network simulator or tools to verify secure network operations.

Pre-Requisite Courses	No course recommendations

Topics
1. Introduction To Networking Security 1.1) Network attacks and threats, mitigation technique. 1.2) Basics of network security and securing network devices. 1.3) Authentication, authorization and accounting. 1.4) Network devices configuration for secure administrative access.
2. Securing the Network Perimeter & IPS 2.1) Access control list 2.2) Firewall technologies 2.3) Context-based access control 2.4) Zone-based policy firewall. 2.5) Intrusion Prevention Systems (IPS).
3. Securing the Local Area Network 3.1) Endpoint security considerations 3.2) Layer 2 security considerations and features 3.3) Configuring Layer 2 devices security
4. Cryptography, Confidentiality & Integrity 4.1) Symmetric and Asymmetric encryption 4.2) Cryptographic services 4.3) Hashes, digital signatures, and authentication 4.4) Virtual Private Network
5. Managing a Secure Network 5.1) Enterprise security needs 5.2) Security policy 5.3) Network security management

Assessment Breakdown	%
Continuous Assessment	50.00%
Final Assessment	50.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Practical	Student utilize simulation tools.	20%	CLO3
	Test	Test 1	15%	CLO1
	Test	Test 2	15%	CLO2

Reading List	Recommended Text	• Cisco Networking Academy, *CCNA Security Course Booklet Version 1.1*, 2 Ed., Cisco Press [ISBN: 1-58713-307-5]
	Reference Book Resources	• **William Stallings, Lawrence Brown, *Computer Security: Principles and Practice*, Prentice Hall [ISBN: 0-13-277506-9]**
		• **William Stallings, *Network Security Essentials: Applications and Standards*, Prentice Hall [ISBN: 0-13-610805-9]**
		• **Chong Ed. Kim, *Fundamentals of Network Security Firewalls & VPNs*, Jones & Bartlett Publishers [ISBN: 0-76-379130-X]**
		• **William (Chuck) Easttom, *Computer Security Fundamentals*, 2nd Edition Ed., Que [ISBN: 0-78-974890-8]**
		• **Michael Goodrich, Roberto Tamassia, *Introduction to Computer Security*, Addison Wesley [ISBN: 0-32-151294-4]**
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	