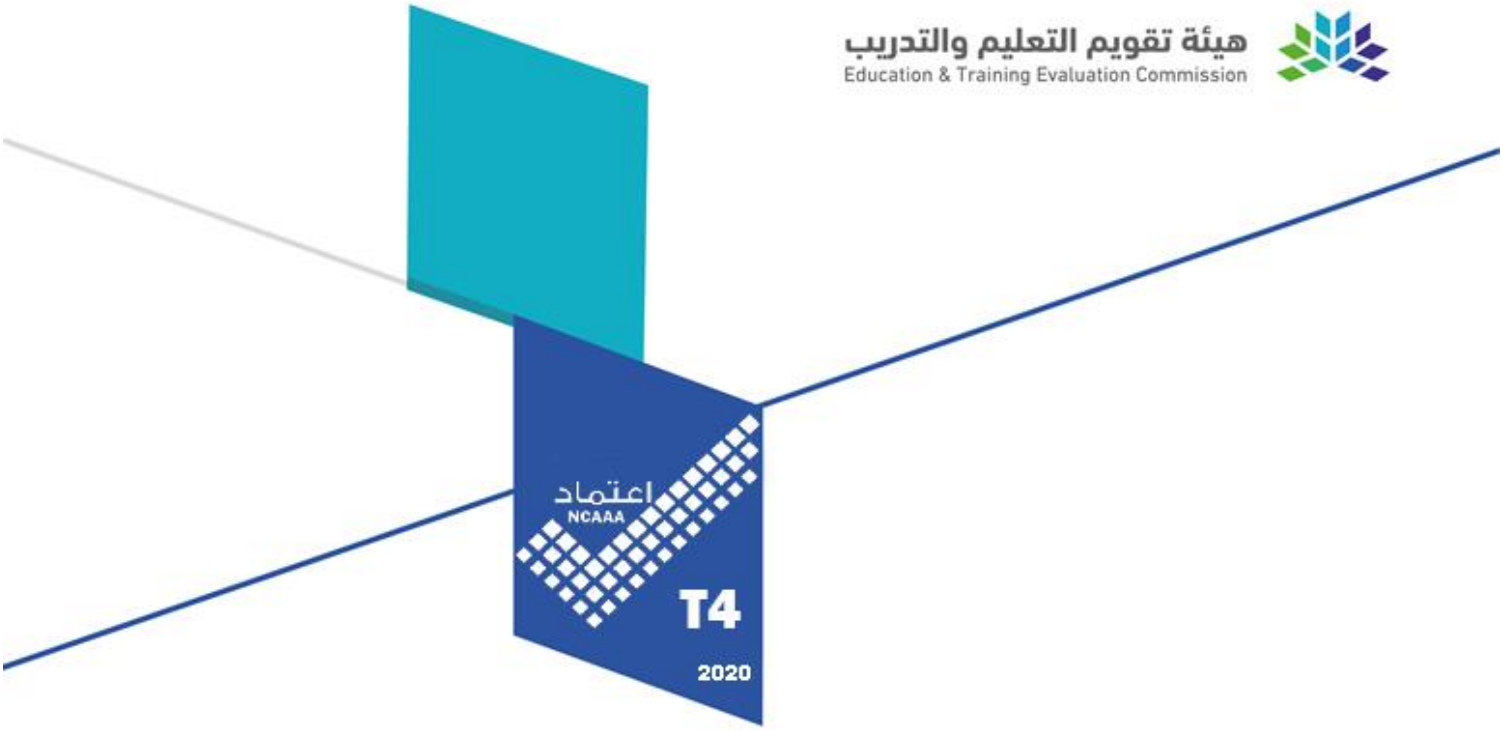

Course Specifications

Course Title:	Network Security
Course Code:	**IT 462**
Program:	INFORMATION TECHNOLOGY
Department:	INFORMATION TECHNOLOGY
College:	College of Computer and Information Sciences
Institution:	**Majmaah University**

Table of Contents

A. Course Identification

1. Credit hours:
2. Course type **a.** University ☐ College ☒ Department ☐ Others ☐ **b.** Required ☐ Elective ☒
3. Level/year at which this course is offered: Level 10
4. Pre-requisites for this course (if any)**:** IT 341
5. Co-requisites for this course (if any)**:**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	44	100%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	33
2	**Laboratory/Studio**	
3	**Tutorial**	11
4	**Others** (specify)	
	Total	44

B. Course Objectives and Learning Outcomes

1. Course Description

This course aims to introduce secure networking, security attacks, network security practice, email security, IP security, web security, intrusion detection and prevention systems. In this course students will also learn advanced concepts in network security and their implementation in network and how to analyze and assess security of network installations in different setups. Hand on experiments include the execution of attacks, the setup of intrusion detection and prevention, securing computers and wired and wireless networks.

2. Course Main Objective

Aim of the course is to understand and Identify computer and network security threats, classify the threats and develop a security model to prevent, detect and recover from the attacks.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Understand the security issues involved with different Network.	K1
1.2	Understanding the Wireless Security Architectures	K1
1.3		
1...		
2	**Skills :**	
2.1	Design secure network architectures by using the basic concepts of secure communication.	S1
2.2	Describe security assessment of networks and identify some of the factors driving the need for network security	S1
2.3		
2...		
3	**Values:**	
3.1	Evaluate and recognize a problem as being a possible network security threat.	V2
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	**Introduction to Network Security:** The OSI Security Architecture, Security Attacks, Security Services, Security Mechanisms, Model for Network Security and Standards.	5
2	**Network Access Control:** Network Access Control overview, Authentication protocol, IEEE 802. IX Port Based Network Access Control.	5
3	**Network Security Threat Model:** Types of threats, Threats against the application (Cross-site scripting, Session hijacking, Information Disclosure), Threat modeling	6
4	**Wireless Network Security:**	6

	Wireless & Mobile Device Security, IEEE 802.11 Wireless LAN, IEEE 802.11i Wireless LAN Security	
5	**Transport-Level Security:** Secure Socket Layer, Transport Layer Security, HTTPS, Secure Shell (SSH)	5
6	**Electronic Mail Security:** Internet mail Architecture, E-mail formats, E-mail threats and security, Pretty Good Privacy, S/MIME, Domain Keys Identified Mail, Domain-based message authentication	6
7	**IP Security:** IP Security Policy Encapsulating security payload Internet Key Exchange Cryptographic Suites	6
8	**Intrusion detection & Firewall:** Intrusion Detection Password Management Firewall Characteristics Types of Firewalls Firewall Basing Firewall Location and Configurations	5
Total		44

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Understand the security issues involved with different Network	Classroom Teaching	Test, Mid Exam, Final Exam
1.2	Understanding the Wireless Security Architectures	Classroom & Exercise Teaching	Mini Project, Mid Exam, Final Exam, Mini Project.
…			
2.0	**Skills**		
2.1	Describe security assessment of networks and identify some of the factors driving the need for network security	Classroom & Exercise Teaching	Mini Project, Mid Exam, Final Exam, Mini Project.
2.2	Design secure network architectures by using the basic concepts of secure communication.	Classroom & Exercise Teaching	Mini Project, Mid Exam, Final Exam, Mini Project.
…			

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
3.0	**Values**		
3.1	Evaluate and recognize a problem as being a possible network security threat.	Classroom & Exercise Teaching	Mini Project, Mid Exam, Final Exam, Mini Project.
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz	Every two weeks	20%
2	Mid Term Exam	Week 6	20%
3	Assignment (2)	Every two weeks	10%
4	Lab Based Assignments/ Mini Project Presentation	Every two weeks	10%
5	Final Exam	Week 11	40%
6			
7			
8			

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

Each student is allotted to an academic advisor for guidance and counselling

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Network Security Essentials: Applications and Standards (6th Edition) by William Stallings ISBN-13: 978-0134527338 Pearson (Aug 7, 2016)
Essential References Materials	1. Introduction to Network Security by Douglas Jacobson Chapman & Hall/CRC Computer and Information Science Series, ISBN-13: 978-1584885436 2. Introduction to Network Security: Theory and Practice 2nd Edition, by JieWang , Zachary A. Kissel, Publisher: Wiley; 2 edition (October 5, 2015), ISBN-13: 978-1118939482
Electronic Materials	

Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classroom
Technology Resources (AV, data show, Smart Board, software, etc.)	PC or Laptop with Windows/Linux, Smart Board, Projector
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Internet Connection

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Final Exam Answer Scripts Verification	Peer faculty members	Review
Course Learning Outcomes Feedback	Students	Survey
Final Exam evaluation	Students	Survey

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	IT Council
Reference No.	
Date	September 2022