



Jordan University of Science and Technology
Faculty of Computer & Information Technology
Cybersecurity Department

CY344 Networks Security Laboratory - JNQF Level: 7

Second Semester 2023-2024

Course Catalog

1 Credit Hours. This course consists of a set of laboratory experiments on security protocols such as SSL/TLS, SSH, and IPsec. Moreover, it consists of experiments about conducting attacks against network protocols such as TCP, UDP, and ARP, traffic sniffing attacks, DNS hacking, SYN flooding, port scanning, access control, intrusion detection systems, and Firewalls.

Teaching Method: On Campus

Text Book

Title	Network Security Essentials: Applications and Standards
Author(s)	William Stallings Pearson
Edition	6th Edition
Short Name	Network Security Essentials
Other Information	https://www.pearson.com/en-us/subject-catalog/p/network-security-essentials-applications-and-standards/P200000003333/9780137561650

Course References

Short name	Book name	Author(s)	Edition	Other Information
Network Security	Network Security, Firewalls, and VPNs	Stewart, J. Michael, Kinsey, Denise	3rd Edition	
Network Analysis	Network Analysis Using Wireshark 2 Cookbook: Practical recipes to analyze and secure your network	Nagendra Kumar Nainar & Yogesh Ramdoss & Yoram Orzach	2nd Edition	
Nmap	Nmap Network Scanning: The Official Nmap Project Guide to Network Discovery and Security	Gordon Fyodor Lyon	1st Edition	

Instructor

Name	Dr. Khaled Alrawashdeh
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Office Location	N2L0
Office Hours	Sun : 09:00 - 12:00 Tue : 10:00 - 12:00 Wed : 13:00 - 14:00 Thu : 10:00 - 11:00
Email	kmalrawashdeh@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Tue : 13:30 - 16:30 Room: LAB Section 2: Lecture Time: Thu : 13:30 - 16:30 Room: LAB

Prerequisites		
Line Number	Course Name	Prerequisite Type
1773430	CY343 Networks Security	Pre./Con.

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	? Setup Virtual Network-Network Security Basics ? Introduction to Packet Sniffing	From Network Security Essentials , From Network Security
Week 2	Viewing Network Data with Wireshark	From Network Security
Week 3	Assessing the Network with Common Security Tools	From Network Security
Week 4	Design basic network using GNS3	
Week 5	Design A network using GNS3	
Week 6	Port Scanning	From Nmap
Week 7	Advanced nmap network scanning	From Nmap
Week 8	Vulnerability and exploitation	From Network Security , From Network Analysis
Week 9	Switch Attacks, Mitigations, DNS, and DHCP	From Network Security , From Network Analysis , From Nmap
Week 10	Access Control List (ACL) using Packet tracer	From Network Security , From Network Analysis
Week 11	Designing A secure Network Topology	From Network Security

Week 12	Configuring the Windows Defender Firewall And Configuring Windows Server Security	From Network Security
Weeks 13, 14	Configuring Firewall Interfaces with pfSense and IDS using SNORT	From Network Security Essentials , From Network Security , From Nmap
Week 15	Drafting a Network Security Policy	From Network Security Essentials , From Network Security , From Network Analysis
Week 16	Final Exam	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Understanding security architectures, protocols, and services in both wired and wireless networks [15SO1] [15L7K1]	15%	
Understand the role of network protocols in securing networks [10SO1] [10L7K1]	10%	
Understand the different types of secure network configurations [25SO2] [25L7K1]	25%	
Discover, analyze, and identify security issues in the network. [15SO2] [15L7S1]	15%	
Evaluate the use of an IDS and IPS in a working environment [15SO4] [15L7S2]	15%	
Apply security mechanisms, security policies, security components (such as protection domains and firewalls), port security and protection to secure networks. [20SO6] [20L7C4]	20%	

Relationship to Program Student Outcomes (Out of 100%)					
SO1	SO2	SO3	SO4	SO5	SO6
25	40		15		20

Relationship to NQF Outcomes (Out of 100%)			
L7K1	L7S1	L7S2	L7C4
50	15	15	20

Policy	
Cheating	Standard JUST policy will be applied.
Attendance	Excellent attendance is expected. According to the JUST policy, a student will receive the grade of ZERO (35%) if he misses more than 20% of the classes. Attendance will be taken by calling the names or passing a sign-up sheet. If you miss a class, it is your responsibility to find out about any announcements or assignments you may have missed.

Workload	The average workload a student should expect to spend is 8 hours/week.
Participation	Participation in the class will positively affect your performance. Disruption and side talks will possibly result in dismissal from class. No eating or chewing gum is allowed in class.
Makeups	Makeup exam should not be given unless there is a valid excuse.
Drop Date	Last day to drop the course is before the 12th week of the current semester.

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