



Jordan University of Science and Technology
Faculty of Computer & Information Technology
Network Engineering And Security Department

NES553 Network Security Laboratory

Second Semester 2020-2021

Course Catalog

1 Credit Hours. Experiments about conducting attacks against network protocols that include UDP, TCP, ICMP, IP and ARP, traffic sniffing attacks, DNS hacking, SYN flooding, port scanning, access control, intrusion detection systems, and Firewalls

Instructor

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Instructor

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Class Schedule & Room

Section 1:

Lecture Time: Wed : 13:30 - 16:30

Room: NES02-E1L3

Section 2:

Lecture Time: Thu : 13:30 - 16:30

Room: NES02-E1L3

Section 3:

Lecture Time: Thu : 10:00 - 13:00

Room: NES02-E1L3

Section 4:

Lecture Time: Mon : 13:30 - 16:30

Room: NES02-E1L3

Prerequisites

Line Number	Course Name	Prerequisite Type
1754520	NES452 Cryptography And Network Security	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Week 2	Introduction to UNIX and Permissions	
Week 3	Firewalls (iptables)	
Week 4	Encryption Algorithms and Modes	
Week 5	TCP/IP attacks	
Week 7	DNS Hacking	
Week 8	Shell Shock attack	
Week 9	Scanner Honeypot with Scapy	
Week 10	Network Intrusion Detection Systems (Snort)	
Week 11	Cross-site scripting attack	

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Perform UNIX basic system administration and access control [1SO1, 1SO4, 1SO6]	18%	
Configure the iptables firewall [1SO1, 1SO4, 1SO6]	15%	

Explore cryptographic solutions of PGP, certificates, and encryption algorithms and modes of operation [1SO1, 1SO4, 1SO6]	14%	
Conduct attacks on TCP/IP protocol suite, such as ARP cache poisoning, SYN flooding, and TCP RST attacks [1SO1, 1SO4, 1SO6]	18%	
Conduct DNS hacking [1SO1, 1SO4, 1SO6]	7%	
Conduct cross-site scripting and the Shell Shock attacks [1SO1, 1SO4, 1SO6]	7%	
Set up a scanner honeypot using scapy [1SO1, 1SO4, 1SO6]	3%	
Configure the snort IDS [1SO4, 1SO6]	18%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
27.33			36.33		36.33	

Evaluation	
Assessment Tool	Weight
Quizzes	15%
Lab work	20%
Midterm	25%
Final exam	40%

Policy	
Exams	<ol style="list-style-type: none"> 1. Practical midterm exam 2. Final exam will consist of practical part and written part tha may include: Definitions, True/False, Multiple-Choice, Analysis and Descriptive formats. 3. Use only your own tools: calculator, pens and ruler 4. Instructions on the first page of the exam are quite important. 5. Not abiding by the rules is a reason for dismissal from the exam.
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.
Cheating	Standard JUST policy will be applied.
Attendance	<ol style="list-style-type: none"> 1. Excellent attendance is expected. 2. According to the JUST policy, a student will receive the grade of ZERO (35%) "failed for absence" if he misses more than 20% of the classes. 3. Attendance will be taken by calling the names or passing a sign-up sheet. 4. If you miss a class, it is your responsibility to find out about any announcements or assignments you may have missed.
Workload	Average work-load student should expect to spend is 6 hours/week.
Graded Exams	Graded exam papers will be returned within a week.

Participation	1. Participation in the class will positively affect your performance. 2. Disruption and side talks will possibly result in dismissal from class. 3. No eating or chewing gums are allowed in class.
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