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

NES595 Special Topics In Network Engineering And Security
Second Semester 2023-2024

Course Catalog
3 Credit Hours. ?Selected state-of-the-art topics in network engineering and security." This course covers network and computer penetration-testing techniques that ethical hackers and security testers use to protect computer networks. This course provides a structured knowledge base for preparing security students to discover vulnerabilities and recommend solutions for tightening network security and protecting data from potential attackers
Teaching Method: On Campus

Text Book	
Title	Hands-On Ethical Hacking and Network Defense
Author(s)	Michael T. Simpson, Nicholas Antill
Edition	3rd Edition
Short Name	Hands-On
Other Information	Cengage Learning, 2016

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref #2	Penetration Testing: A Hands-On Introduction to Hacking	Georgia Weidman	1st Edition	No Starch Press

Instructor	
Name	**Dr. Monther Al dwairi**
Office Location	M2L2
Office Hours	Sun : 09:30 - 11:30 Mon : 11:30 - 12:30 Tue : 09:30 - 11:30 Wed : 12:00 - 13:00

Email	munzer@just.edu.jo

Class Schedule & Room

Section 1:
 Lecture Time: Mon, Wed : 08:30 - 10:00
 Room: A2124

Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Introduction to Ethical Hacking	**1** From **Hands-On**
Weeks 2, 3	Overview of TCP/IP, IP addressing and ports	**1** From **Hands-On**, **2** From **Ref #2**
Weeks 4, 5	Using Kali Linux and Programming Overview	**2,3,4** From **Ref #2**
Weeks 5, 6	Information Gathering	**5** From **Ref #2**
Weeks 7, 8	Enumeration and Finding Vulnerabilities	**6** From **Ref #2**
Week 9	Exploitation, overview of system hacking methodologies	**8** From **Ref #2**
Week 10	Exploitation using the Metasploit Framework	**8** From **Ref #2**
Week 11	Exploitation: Network Sniffing Attacks	**7** From **Ref #2**
Weeks 12, 13	Exploitation: Web Application Attacks	**7** From **Ref #2**
Week 14	Exploitation: Social Engineering	**9,11** From **Ref #2**
Weeks 15, 16	Post Exploitation	**13** From **Ref #2**

Relationship to Program Student Outcomes (Out of 100%)

SO1	SO2	SO3	SO4	SO5	SO6	SO7	MSO1	MSO2	MSO3	MSO4	MSO5	MSO6	MSO7

Evaluation

Assessment Tool	Weight
First Exam	15%
Second Exam	15%
Project	30%
Final Exam	40%

Policy

Essential Notes (Exams)	Exams May include: Definitions, True/False, Multiple-Choice, Analysis and Descriptive formats.
	? Use only your own tools: calculator, pens and ruler
	? Instructions on the first page of the exam are quite important.
	? Not abiding by the rules is a reason for dismissal from the exam.
	? Graded exam papers will be returned within a week.
	Additional Notes
	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 ? Excellent attendance is expected.
	? 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.
	? 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 ? Average workload 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 gums are allowed in class.
	? Discretionary oral examinations will be held for some students in certain assessments. The details for the selection criteria for students and cases where discretionary oral examinations may be applied is detailed below.
	? Oral interview will assess the student(s) knowledge about each subject/step/command of the assessment. More information will be included in the assessment description.
	? Differential grading may be applied in the cases were
	o All groups end up with the same/close number of points (i.e. potential abuse of crowdsourcing and competitive intelligence);
	o Team members did not contribute equally to capturing the flags; Team member(s) is held back by the group and believes that he can do better than what they have submitted; Suspected cheating whether it is plagiarism or consulting external parties;
	o One group member is doing all the work;
	o One group member is absent, and/or didn't participate in the work;
	o Group disagreement and some members not pulling their own weight.
	? In all cases the teams will sit for an interview and demo session where they have demonstrated their skills. In case of online teaching the differential grading questions will take the form of a test.
	? The final grade depends on the student answering the interview questions and demonstrating their knowledge of the subject matter

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