جامعة الإسراء
ISRA UNIVERSITY

Course Syllabus

According to JORDAN National Qualification Framework (JNQF)

Course Name: Ethical Hacking

Course Number: 06044158

General Course Information:

Course title	**Ethical Hacking**
Course number	**06044158**
Credit hours	**3**
Education type	**[Face-to-Face]**
Prerequisites/corequisites	**Intrusion Detection Systems (0644301)**
Academic Program	**Cyber Security**
Program code	**0644**
Faculty	**Faculty of Information Technology**
Department	**Computer Science**
Level of course	**3**
Academic year /semester	**3**
Awarded qualification	**BSc.**
Other department(s) involved in teaching the course	**None**
Language of instruction	**English**
Date of production/revision	**2020/2021**

Course Coordinator:

Coordinator's name	**Dr. Hasan Kanaker**
Office No	**4225**
Office Phone extension number	**2612**
Office Hours	**[11-12] Sun, [12-1] Tues, Thur.; [11:00-12:30] Mon, [9:30-11] Wed**
Email	**hasan.kanaker@iu.edu.jo**

Other Instructors:

Instructor name	
Office No	
Office Phone extension number	
Office Hours	
Email	

Course Description *(English/Arabic)*:

English	*Introduction to the principles and techniques of using hacking skills for defensive purposes. The course covers planning, investigation, scanning, exploitation, post-exploitation, and result reporting.* *The student learns how system vulnerabilities can be exploited and learn to escape such problems.*
Arabic	مقدمة في مبادئ وتقنيات استخدام مهارات القرصنة لأغراض دفاعية. يغطي المقرر الدراسي التخطيط والتحقيق والمسح والاستغلال وما بعد الاستغلال وتقرير النتائج. يتعلم الطالب كيف يمكن استغلال ثغرات النظام ويتعلم الهروب من مثل هذه المشاكل.

Textbook: *Author(s), Title, Publisher, Edition, Year, Book website.*

1. CEH v10 Certified Ethical Hacker Study Guide.

Author(s): Ric Messier
First published:30 May 2019
Print ISBN:9781119533191 |Online ISBN:9781119533245 |DOI:10.1002/9781119533245

References: ***Author(s), Title, Publisher, Edition, Year, Book website.***

1. https://onlinelibrary.wiley.com/doi/book/10.1002/9781119533245

Course Educational Objectives (CEOs):

1.	**Introduce students to Ethical Hacking concepts.**
2.	**Students will also learn how to utilize more advanced Concepts and Tools to penetration tests and security enhancing techniques**
3.	**Evaluation Security measures and counter measures**

Intended Learning Outcomes (ILO's):

	Subject Intended learning outcomes (ILOs) describe what students are expected to know and be able to do at the end of the course. These outcomes are related to the knowledge, skill and competence that students acquire:	Relationship to CEOs	Contribution to PLOs	Bloom Taxonomy Levels*	Descriptors**
A	**Knowledge and Understanding:**				
A1	**By the end of the course, a student should be able to define the attacks and counter measures. and should know how to enhance security systems.**	**1**	**1**	**1**	**s**
A2	**Students should know the attack classifications and counter measures techniques. Also, students should know the best practices of setting security measures.**	**1**	**1**	**1**	**s**
B	**Intellectual skills:**				
B1	**Ability to analysis and discuss different cases of attacks and counter attacks.**	**2**	**2**	**4**	**s**
B2	**Ability to distinguish between attacks, and counter attacks.**	**2**	**3**	**2**	**c**
C	**Subject specific skills:**				
C1	**An ability to use current techniques, skills, and tools used to protect systems and networks, and use security.**	**2,3**	**6**	**3**	**s, c**
D	**Transferable skills:**				
D1	**Students should be able to use the most common tools for penetration test and vulnerabilities test to design security solution to systems and networks**	**3**	**6**	**3**	**c**

***Bloom Taxonomy Levels**

Level #	1	2	3	4	5	6
Level Name	Knowledge	Comprehension	Application	Analysis	Evaluation	Synthesis

**** Descriptor (National Qualification Framework Descriptors): K : Knowledge, S: Skill, C: Competency.**

Program Learning Outcome (PLOs):

Program Learning Outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviours that students acquire as they progress through the program. A graduate of the (_____) program will demonstrate:		Descriptors**		
		K	S	C
1.	Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.		✓	
2.	Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.		✓	
3.	Communicate effectively in a variety of professional contexts.			✓
4.	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.	✓		
5.	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.		✓	
6.	Apply security principles and practices to maintain operations in the presence of risks and threats. [CY]			✓

**** Descriptors according to the national qualifications framework (K: knowledge, S: skill, C: Competency)**

Weekly Schedule *(please choose the type of teaching)*

✓ **Face to Face**

☐ **Hybrid** *(**2 Lectures** Face – To - Face **+1 Lecture** Asynchronous)*

☐ **Hybrid (***1 Lectures* Face – To - Face ***+1 Lecture*** Asynchronous)

☐ **Online** *(**2 Lectures** Synchronous **+1 lecture Asynchronous**)*

Week	First Lecture (……..)	Second Lecture (……..)	Third Lecture (……..)	Ach. ILOs	Ach. PLOs	Descriptors**
1	Module 01: Introduction to Ethical Hacking	Module 01: Introduction to Ethical Hacking	Module 01: Introduction to Ethical Hacking	A1	1	s
2	Module 02: Footprinting and Reconnaissance	Module 02: Footprinting and Reconnaissance	Module 02: Footprinting and Reconnaissance	A2	1	s
3	Module 03: Scanning Networks	Module 03: Scanning Networks	Module 03: Scanning Networks	B1	2	s

4	Module 03: Scanning Networks	Module 03: Scanning Networks	Module 03: Scanning Networks	B1	2	s
5	Module 04: Enumeration	Module 04: Enumeration	Module 04: Enumeration	B1	2	s
6	Module 04: Enumeration	Module 04: Enumeration	Module 04: Enumeration	B1	2	s
7	Module 04: Enumeration	Module 04: Enumeration	Module 04: Enumeration	B1	2	s
8	Module 05: Vulnerability Analysis	Module 05: Vulnerability Analysis	Module 05: Vulnerability Analysis	B2	3	c
9	Module 06: System Hacking	Module 06: System Hacking	Module 06: System Hacking	C1	6	c
10	Module 07: Malware Threats	Module 07: Malware Threats	Module 07: Malware Threats	C1	6	c
11	Module 07: Malware Threats	Module 07: Malware Threats	Module 07: Malware Threats	C1	6	c
12	Module 08: Sniffing	Mid-term exam	Mid-term exam review			
13	Module 09: Social Engineering	Module 09: Social Engineering	Module 09: Social Engineering	D1	6	c
14	Module 10: Denial-of-Service	Module 10: Denial-of-Service	Module 10: Denial-of-Service	D1	6	c
15	Module 11: Session Hijacking	Module 11: Session Hijacking	Module 11: Session Hijacking	D1	6	c
16		**Final Exam**				

* **K: Knowledge, S: Skills, C: Competency**

Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- **Interactive videos**
- **Practice Labs**
- **Discussion Forums**
- **Quizzes**
- **Other Interactive online activities**
- **Reports**

Course Policies:

A- Attendance policies:

The maximum allowed absences is 15% of the lectures.

B- Absences from exams and handing in assignments on time:

Midterm exam can be retaken based on approval of excuse by the instructor's discretion.

Not handing assignment on time will incur penalties.

C- Academic Health and safety procedures

D- Honesty policy regarding cheating, plagiarism, and misbehaviour:

Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.

E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.
- Online Activities (Course Videos, Practice labs, Discussion Forums, Quizzes) **_30_%**
- Midterm **_20_%**

- Final Exam **_50_%**

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library.**

Required equipment:

- **PC / Laptop with webcam and mic**
- **Internet Connection**
- **Access to the IU E-Learning Platform at: https://elearn.iu.edu.jo/**
- **E-learning plan**
- Satisfaction questionnaires for online and face-to-face learning
- Software for e-learning
- Training

Assessment Tools implemented in the course:

- Final Exam
- Midterm Exam
- Quizzes
- Homework
- Practice Labs
- Discussion Forums
- Periodic reports for learning assessment
- Improvement plans for online or face-to-face teaching
- Others:…….

Responsible Persons and their Signatures:

Course Coordinator	**Dr. Hasan Kanaker**	**Completed Date**	**29 / 6 / 2022**
		Signature	

Received by (Department Head)	**Dr. Hasan Kanaker**	**Received Date**	**29 / 6 / 2022**
		Signature