COURSE DESCRIPTIONS

Faculty	Science and Information Technology				
Department	Software Engineering			**NQF level**	7
Course Title	Information and software security	**Code**	503361	**Prerequisite**	501292
Credit Hours	3	**Theory**	3	**Practical**	0
Course Leader	Dr. Arwa Zabian	**email**	arwa@jadara.edu.jo		
Lecturers	Dr. Arwa Zabian	**emails**			
Lecture time	10- 11.30 Mon-Wed	**Classroom**	Lab 15	**Attendance**	
Semester	Second 2021-2022	**Production**	2018	**Updated**	2021

Short Description
This course gives a broad overview of essential concepts and methods for providing and evaluating security in information system. The main concepts studied in this course are: foundation in information security, software security, cryptography and network security.
Course Objectives
The objective of this course are: 1. Identify the fundamentals of information security that are used in protecting information when is stored on the computer or while travelling over computer networks 2. Present cryptographic algorithms, software security, risk assessment, databases security

Course Intended Learning Outcomes (CILOs)
A. Knowledge - Theoretical Understanding
a1. Explain basic security concepts in the field of information security such as confidentiality, integrity, availability, importance of cryptographic algorithms, ethical hacking a2. Define software security, symmetric , asymmetric encryption, hash encryption techniques
B. Knowledge - Practical Application
a3. Interpret the impact of loss of security on different systems
C. Skills - Generic Problem Solving and Analytical Skills
b1. Identify the different access control mechanism, authorization, authentication, public key algorithms, different malicious software
D. Skills - Communication, ICT, and Numeracy
b2. Apply some rules of firewall, intrusion detection, internet security, ethical hacking on real scenario in the network
E. Competence: Autonomy, Responsibility, and Context
Teaching and Learning Methods

Face to face learning
Assessment Methods
By quizzes, assignment

Course Contents					
Week	**Hours**	**CILOs**	**Topics**	**Teaching & Learning Methods**	**Assessment Methods**
1	3	a1	**Fundamental principles in information security**	Face to face learning	
2	1.5	a1,a3	**Fundamental principles in information security**	Face to face learning	quiz
	1.5		**Cryptography tools**		
3	1.5	a2	Cryptography tools	Face to face learning	
	1.5	b1	**User authentication**		
4, 5,6	6	a2,b1	**Cryptography algorithms (symmetric encryption)**	Face to face learning	quiz
				Face to face learning	
7	3	b2	Introduction to Ethical Hacking, e-mail hacking , password cracking, making a protected file	Face to face learning	
8	1.5	b1	**Malicious software**	Face to face learning	
	1.5	a1,a2,a3, b1,b2	**Mid Exam**		Mid Exam
9	3	a1,b1	Public Key cryptography	Face to face learning	quiz
10	1.5				
11	1.5	b2	Intrusion detection	Face to face learning	
	1.5	b2	Firewall		
12	3	b2	Databases security	Face to face learning	quiz
13	3	b2	Internet security	Face to face learning	
14	3	b2	Software security	Face to face learning	
15	6	a1,a2, a3,b1,b2	Final exam	Face to face exam	Final exam
16					

Infrastructure	
Textbook	**Computer Security Principles and Practice**, ***William Stallings- Lawrie Brown,*** Pearson . 4d. 2017. ISBN-10: 0133773922
References	**Cryptography and network security: principles and practice**. Eight edition, **William Stalling.** Pearson 2019. ISSN: 978-0-13-335469-0
Required reading	**Ethical Hacking Tutorials for Beginners**. Lawrence Williams. Updated February 24, 2022. Available at https://www.guru99.com/ethical-hacking-tutorials.html
Electronic materials	**https://sites.google.com/site/arwinazabian/security**
Other	

Course Assessment Plan							
Assessment Method		**Grade**	**CILOs**				
			a1	**a2**	**a3**	**b1**	**b1**
First (Midterm)		30	6	6	6	6	6
Second (if applicable)							
Final Exam		50	12	10		14	14
Coursework		20					
Coursework assessment methods	Assignments						
	Case study						
	Discussion and interaction						
	Group work activities						
	Lab tests and assignments						
	Presentations						
	Quizzes		4	4	4	4	4
Total			22	20	10	24	24

Plagiarism
Plagiarism is claiming that someone else's work is your own. The department has a strict policy regarding plagiarism and, if plagiarism is indeed discovered, this policy will be applied. Note that punishments apply also to anyone assisting another to commit plagiarism (for example by knowingly allowing someone to copy your code). Plagiarism is different from group work in which a number of individuals share ideas on how to carry out the coursework. You are strongly encouraged to work in small groups, and you will certainly not be penalized for doing so. This means that you may work together on the program. What is important is that you have a full understanding of all aspects of the completed program. In order to allow proper assessment that this is indeed the case, you must adhere strictly to the course work requirements as outlined above and detailed in the coursework problem description. These requirements are in place to encourage individual understanding, facilitate individual assessment, and deter plagiarism.