جـامعة الـزيـتـونــــة الأردنيــة
Al-Zaytoonah University of Jordan
كلية العلوم وتكنولوجيا المعلومات
Faculty of Science and Information Technology

" عراقة وجودة"
"Tradition and Quality"

QF01/0408-4.0E	**Course Plan for Bachelor program - Study Plan Development and Updating Procedures/ Cyber Security Department**

Study plan No.	**1**		**University Specialization**		**Cybersecurity**	
Course No.	**0125334**		**Course name**		**Software Security**	
Credit Hours	**3**		**Prerequisite Co-requisite**		**Data Integrity and Authentication**	
Course type	□ MANDATORY UNIVERSITY REQUIREMENT	□ UNIVERSITY ELECTIVE REQUIREMENTS	□ FACULTY MANDATORY REQUIREMENT	□ Support course family requirements	✓ Mandatory requirements	□ Elective requirements
Teaching style	□ **Full online learning**		□ **Blended learning**		✓ **Traditional learning**	
Teaching model	□ **2Synchronous: 1asynchronous**		□ **2 face to face : 1synchronous**		✓ **3 Traditional**	

Faculty member and study divisions' information (to be filled in each semester by the subject instructor)

Name	Academic rank	Office No.	Phone No.	E-mail	
Seraj Fayyad	Assistant Prof.	338	346	s.fayyad@zuj.edu.jo	
Division number	**Time**	**Place**	**Number of students**	**Teaching style**	**Approved model**
	11:00-12:30	9250	20	Traditional learning	Traditional

Brief description

In this course student will have a good overview about Software Development Life Cycle (SDLC) from security point of view. Student will learn the basic terminologies associated with different phases of the SDLC as well as the relevant security terminologies. Considering security in the requirements phase, student will learn about different security regulations and compliance requirements as well as different standards that address security requirements. In this context, student will examine data classification as pre-step for the identification of the relevant security requirements attached to different data classes. In addition, student will have a good overview about privacy requirements and possible standard that student could refer to, which will help security specialist in the fulfilment of such requirements.

Software architecture and design phase is a key phase in the SDLC. This phase typically employed to achieve the business and security requirements of the targeted system. In this course student will learn threat-modeling process in the context of addressing security needs in design phase. In addition, student will learn how to define the security architecture based on identified system's requirements. Moreover, in this course student will learn about performing secure interface design and performing architectural risk assessments. S/he will be able to model (nonfunctional) security properties and constraints and will learn how to model and classify data, how to evaluate and select reusable secure designs. Moreover, this course teaches the student also how to perform security architecture and design reviews besides defining secure operational architectures.

Secure coding are a key phase in the SDLC. This course examines specific coding practices that can be employed to achieve higher levels of secure code. In addition, this course teaches student how to gather information about specific threats and vulnerabilities in the software under development. In addition, the course examines the core concepts of code analysis and testing including static testing and dynamic testing. In this context, student will learn the methods employed to thoroughly test software as part of the development process.

Learning resources

Course book information (Title, author, date of issue, publisher ... etc)	CSSLP Certification All-in-One Exam Guide, Third Edition, Wm. Arthur Conklin and Daniel Shoemaker			
Supportive learning resources (Books, databases, periodicals, software, applications, others)	- Secure Software Development: A Security Programmer's Guide, Jason Grembi - Designing Security Architecture Solutions, Jay Ramachandran			
Supporting websites				
The physical environment for teaching	✓ Class room	✓ labs	□ Virtual educational platform	□ Others
Necessary equipment and software	Data show			
Supporting people with special needs				
For technical support				

Course learning outcomes (S*= Skills, C= Competences K= Knowledge,)*

No.	Course learning outcomes	The associated program learning output code
	Knowledge	
K1	Knowledge of Software life Cycle	**MK1, MK2**
K2	Know and explain types of security relevant standards.	**MK1, MK2**
K3	Knowledge of data and data classification and their relation to security fulfillment along SDLC.	**MK1, MK2**
K4	Describe IT threats and threat modeling and gather information about specific threats and vulnerabilities in the software under development	**MK1, MK2**
	Skills	
S1	Applying some phases of SDLC on a given simple use case considering possible security needs.	**MS5**
S2	Clarify common security concepts which are relevant to SDLC	**MS1**
S3	Implement elementary securing activities along SDLC	**MS3**
S4	Clarify the main concepts in software security.	**MS1**
S5	Explain some technique about how to secure software along it SDLC	**MS5**
	Competences	

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C1	Independently manage tasks related to the security of SDLC	**MC1**
C2	Work collaboratively and constructively	**MC1**
C3	Have the ability to lead and entrepreneurially perform a wide range of tasks responsibly	**MC2**
C4	Make constructive decisions in situations that require self-reliance	**MC2**
C5	Learn and innovate independently	**MC2**

Mechanisms for direct evaluation of learning outcomes

Type of assessment / learning style	**Fully electronic learning**	**Blended learning**	**Traditional Learning (Theory Learning)**	**Traditional Learning (Practical Learning)**
First exam	0	0	0	0
Second / midterm exam	%30	%30	**%30**	30%
Participation / practical applications	0	0	**20**	30%
Asynchronous interactive activities	%30	%20	**0**	0
final exam	%40	%50	**%50**	40%

Note: Asynchronous interactive activities are activities, tasks, projects, assignments, research, studies, projects, work within student groups ... etc, which the student carries out on his own, through the virtual platform without a direct encounter with the subject teacher.

Schedule of simultaneous / face-to-face encounters and their topics

Week	**Subject**	**learning style***	**Reference ****
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

15			
16	Final Exam		

*** Learning styles: Lecture, flipped learning, learning through projects, learning through problem solving, participatory learning ... etc.**

**** Reference: Pages in a book, database, recorded lecture, content on the e-learning platform, video, website ... etc.**

Schedule of asynchronous interactive activities (in the case of e-learning and blended learning)

Week	Task / activity	Reference	Expected results