The Hashemite University

الجامعـــــة الهاشميـــــة

Deanship of Academic Development and International Outreach

عمادة التطوير الأكاديمي والتواصل الدولي

Software Ethics and Security (2010031353)

Second Semester 2021/2022

COURSE INFORMATION	
Course Name: Software Ethics and Security **Semester:** Second Semester 2021/2022 **Department:** Department of Software Engineering **Faculty:** Prince Al-Hussein Bin Abdullah II Faculty for Information Technology	**Course Code: 2010031353** **Section:** Mandatory **Core Curriculum**:
Day(s) and Time(s): Monday: 12:30-2:00 Wednesday: 12:30-2:00 **Classroom:** IT 302	**Credit Hours:** 3 **Prerequisites**: 2010031260 Fundamentals of Software Engineering

COURSE DESCRIPTION

Three credit hours is counted for this course. This course covers privacy issues and digital information security. Data cryptology, digital signatures. Theory and practice of software security, focusing in particular on some common software security risks. Methodologies and tools needed for identifying and eliminating security vulnerabilities, techniques to prove absence of vulnerabilities, intrusion detection and essential guidelines for building secure software. The course also describes legal and ethical issues for software systems.

DELIVERY METHODS

The course will be delivered through a combination of active learning strategies. These will include:

- PowerPoint lectures and active classroom based discussion
- Video lectures
- E-learning resources: e-reading assignments and practice quizzes through Model and Microsoft Team

FACULTY INFORMATION

Name	**Maen Hammad**
Academic Title:	**Professor**
Office Location:	**IT 323**
Telephone Number:	
Email Address:	**mhammad@hu.edu.jo**
Office Hours:	**Monday** 2:00-3:00 **Wednesday** 2:00-3:00

	Please send an e-mail (mhammad@hu.edu.jo) to meet at any other time.

REFERENCES AND LEARNING RESOURCES

Required Textbook:

- Computer Security: Principles and Practice, William Stallings, Lawrie Brown, Pearson , 4th Edition**,** 2017

Suggested Additional Resources:

- Security in Computing, Charles P. Pfleeger, Shari L. Pfleeger, 4th Edition.
- Computer Security, Dieter Gollmann, 2nd Edition.
- Matt Bishop "Introduction to Computer Security", Addison Wesley, 1st Edition

STUDENT LEARNING OUTCOMES MATRIX*

Core Curriculum Learning Outcomes	Program Learning Outcomes	Course Objectives	Course Student Learning Outcomes	Assessment Method
	[ET1] Understanding of the need for a high level of professional and ethical conduct in engineering and a knowledge of professional codes of conduct.	• Describe the threads posed to software security and discuss the more common attacks associated with those threats. • Apply appropriate security techniques to solve security problems. • Understanding and applying appropriate authentication techniques • Understanding legal and ethical issues in software security	• [CLO5] Understand various legal and ethical issues in computer security. • [CLO2] Use the proper authentication method based on the application being used. And accordingly use the proper access control mechanism.	• Exams • Quizzes
	[ET5] Awareness of relevant legal requirements governing engineering activities, including personnel, health & safety, contracts, intellectual property rights, product safety and liability issues.		• [CLO2] Use the proper authentication method based on the application being used. And accordingly use the proper access control mechanism.	• Exams • Quizzes
	[ET6] Knowledge and understanding of risk issues, including health & safety, environmental and commercial risk, and of risk assessment and risk management techniques.		• [CLO1] Comprehend basic security terminologies, and specifically the basic goals of software security, that is, confidentiality, integrity and availability. • [CLO3] Distinguish between the different types of malwares and use the proper techniques to protect against them.	• Exams • Quizzes

	[EP5] Knowledge of relevant legal and contractual issues.		• [CLO5] Understand various legal and ethical issues in computer security.	• Exams • Quizzes
	[EP9] Understanding of, and the ability to work in, different roles within an engineering team.		• [CLO4] Understand the techniques needed to detect deferent types of intrusions.	• Exams • Quizzes

ACADEMIC SUPPORT

It is The Hashemite University policy to provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their Instructor to ensure that their individual needs are met. The University through its Special Need section will exert all efforts to accommodate for individual's needs.

Special Needs Section:
Tel:
Location:
Email:

COURSE REGULATIONS

Participation

Class participation and attendance are important elements of every student's learning experience at The Hashemite University, and the student is expected to attend all classes. A student should not miss more than 15% of the classes during a semester. *Those exceeding this limit of 15% will receive a failing grade regardless of their performance*. It is a student's responsibility to monitor the frequency of their own absences. **Attendance record begins on the first day of class irrespective of the period allotted to drop/add and late registration. It is a student's responsibility to sign-in; failure to do so will result in a non-attendance being recorded.**

In exceptional cases, the student, with the instructor's prior permission, could be exempted from attending a class provided that the number of such occasions does not exceed the limit allowed by the University. The instructor will determine the acceptability of an absence for being absent. A student who misses more than 25% of classes and has a valid excuse for being absent will be allowed to withdraw from the course.

Plagiarism

Plagiarism is considered a serious academic offence and can result in your work losing marks or being failed. HU expects its students to adopt and abide by the highest standards of conduct in their interaction with their professors, peers, and the wider University community. As such, a student is expected not to engage in behaviours that compromise his/her own integrity as well as that of the Hashemite University.

Plagiarism includes the following examples and it applies to all student assignments or submitted work:

- **Use of the work, ideas, images or words of someone else without his/her permission or reference to them.**
- **Use of someone else's wording, name, phrase, sentence, paragraph or essay without using quotation marks.**
- **Misrepresentation of the sources that were used.**

The instructor has the right to fail the coursework or deduct marks where plagiarism is detected

Late or Missed Assignments

In all cases of assessment, students who fails to attend an exam, class project or deliver a presentation on the scheduled date without prior permission, and/or are unable to provide a medical note, will automatically receive a fail grade for this part of the assessment.

- Submitting a term paper on time is a key part of the assessment process. Students who fail to submit their work by the deadline specified will automatically receive a 10% penalty. Assignments handed in more than 24 hours late will receive a further 10% penalty. Each subsequent 24 hours will result in a further 10% penalty.
- In cases where a student misses an assessment on account of a medical reason or with prior permission; in line with University regulations an incomplete grade for the specific assessment will be awarded and an alternative assessment or extension can be arranged.

Student Complaints Policy

Students at The Hashemite University have the right to pursue complaints related to faculty, staff, and other students. The nature of the complaints may be either academic or non-academic. For more information about the policy and processes related to this policy, you may refer to the students' handbook.

COURSE ASSESSMENT

Course Calendar and Assessment

Students will be graded through the following means of assessment and their final grade will be calculated from the forms of assessment as listed below with their grade weighting taken into account. The criteria for grading are listed at the end of the syllabus

Assessment	Grade Weighting	Deadline Assessment
First Exam	25 %	
Second Exam	25 %	
Quizzes	10%	
Final Exam	40%	

Description of Exams

Test questions will predominately come from material presented in the lectures. Semester exams will be conducted during the regularly scheduled lecture period. Exam will consist of a combination of multiple choice, short answer, writing code or descriptive questions.

No make-up exams, homework or quizzes will be given. Only documented absences will be considered as per HU guidelines.

Grades are not negotiable and are awarded according to the following criteria*:

Letter Grade	Description	Grade Points
A+	Excellent	4.00
A		3.75
A-		3.50
B+	Very Good	3.25
B		3.00
B-		2.75
C+	Good	2.50
C		2.25
C-		2.00
D+	Pass	1.75
D	Pass	1.50
F	Fail	0.00
I	Incomplete	-

WEEKLY LECTURE SCHEDULE AND CONTENT DISTRIBUTION

Topic	Chapter in Text	Week #
Introduction	Ch1	Week 1,2
Cryptographic Tools	Ch2	Week 3
User Authentication	Ch3	Week 4
Malicious Software	Ch6	Week 5,6
Intrusion Detection	Ch8	Week 7, 8
Software Security	Ch11	Week 9,10
Human Resources Security	Ch17	Week 11, Week 12,
Legal and Ethical Aspects	Ch19	Week13, Week14,
Public–Key Cryptography	Ch21	Week 15, 16