



Jordan University of Science and Technology
Faculty of Computer & Information Technology
Computer Information Systems Department

CIS433 Information Security

First Semester 2020-2021

Course Catalog

3 Credit Hours. 3 Credit hours (3 h lectures). The course covers classic security topics, such as applied cryptography, authentication, authorization and basic security principles. Furthermore, it covers some recent topics such as web security and virtual machines security. The topics that the course covers are listed below: Confidentiality, Integrity, Availability. Security policy and mechanism. Basic principles of secure system design, basic crypto primitives, Secret key crypto, public key crypto, Digital signatures, Message authentication, authentication, Access Control, Discussion of popular systems and security protocols.

Text Book

Title	Computer Security: Principles and Practice
Author(s)	William Stallings and Lawrie Brown
Edition	3rd Edition
Short Name	1
Other Information	

Instructor

Name	Dr. Qussai Yaseen
Office Location	Engineering Building A2 L3 Rm#5
Office Hours	Sun : 09:00 - 10:00 Mon : 09:00 - 11:00 Wed : 09:00 - 11:00 Thu : 09:00 - 11:00
Email	qmyaseen@just.edu.jo

Class Schedule & Room

Section 1:

Lecture Time: Sun, Tue : 10:00 - 11:30

Room: منصة الكترونية

Teaching Assistant

(Section 1), (Section 1), (Section 1)

Prerequisites

Line Number	Course Name	Prerequisite Type
1743510	CIs351 Management Information Systems	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Introduction. Basic security principles.	
Weeks 2, 3	Cryptography: Simple symmetric-key ciphers. DES.	
Weeks 3, 4	Public-key cryptography and RSA, Diffie-Hellman.	
Week 5	User Authentication: Means of Authentication, Password-Based, Token-Based, Biometric, Remote User authentication. Security Issues for User Authentication.	
Weeks 6, 7	Access Control: Access Control Principles. Subjects, Objects and Access Rights. Discretionary Role-Based Access Control.	
Weeks 8, 9	Database and Cloud Security: Database Access Control. Inference. Database Encryption. Data Protection in the Cloud	
Weeks 10, 11	Malicious Software: Viruses. Worms. Bots. Rootkits.	
Weeks 12, 13	Intrusion Detection: Intruders. Intrusion Detection. Host-Based and Distributed Host-Based Intrusion Detection. Network-Based Intrusion Detection. Honeypots.	
Weeks 14, 15	Network Security, Firewalls and Intrusion Prevention Systems: Firewall Characteristics. Types of Firewalls. Firewall Location and Configurations. Intrusion Prevention Systems. MAC address Flooding, DHCP starvation and Spoofing.	

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
A successful student in this course will be able to be familiar with information security concepts and terms. [1SO4]	20%	

A successful student in this course will be able to use symmetric and asymmetric encryption methods. [1SO2]	15%	
A successful student in this course will be able to code a hacking system that teach students how attackers think and hack systems. [1SO2, 1SO5]	15%	
A successful student in this course will be able to analyze authentication systems and access control methods and their differences [1SO2]	15%	
A successful student in this course will be able to design some types of malicious software. [1SO2, 1SO5]	15%	
A successful student in this course will be able to understand how countermeasures work and how intruders may bypass security countermeasures. [1SO4]	20%	

Relationship to Program Student Outcomes (Out of 100%)																
A	B	C	D	E	F	G	H	I	J	K	SO1	SO2	SO3	SO4	SO5	SO6
												45		40	15	

Evaluation	
Assessment Tool	Weight
First Exam	20%
Second Exam	20%
Assignments and Quizzes	20%
Final Exam	40%

Policy	
Teaching & Learning Methods	<p>? Class lectures: Class lectures will expose students to the knowledge required by this course</p> <p>? Class Discussions: Relevant issues will be discussed in class. These discussions are supposed to improve the students' communication and problem solving skills by motivating them to express their opinions.</p> <p>? Activity: Students will be expected to work on a group activity. The activity could be a small software project, or a case study of a healthcare provider. In addition to improving the students' technical and analytical skills, this project aims at improving the students' team work, self-management, and planning and organizing skills.</p> <p>? Self-study: Students will be required to study one of the assigned chapters as self-study. A number of questions from the self-study chapter will be included in the exam. This learning method aims at improving the students' learning skills.</p>

Date Printed: 2020-10-26