



Beirut Arab University
Faculty of Science
Department of Mathematics and Computer Science

Course Syllabus – CMPS 455

Course Title: Computer Security

Credit Hours: 3

Prerequisites: None

Instructor: Dr. May Itani (B-D)

Semester: Spring 2021-2022

Class Meeting: Tuesday 8:00-10:00(Debbie)

Wednesday 8:00-10:00(Beirut)

Course Objectives:

This course introduces the student to fundamental tools in cryptography and the protocols that enable its application to network and communication security. It introduces basic theory and practice of cryptographic techniques used in computer security. We cover topics including encryption (classical and modern encryption techniques), digital signatures, secure authentication, cryptographic hashing, and ethics and challenges associated with the use of computer security in vulnerable world. The course also gives an overview of possible attacks on cryptosystems with the aim of preventing future attacks.

References:

1. Stallings, William. Cryptography and Network Security, Global Edition, 2017. (Pearson)
2. Stallings, William, Lawrie Brown. Computer Security, Global Edition. Pearson, 2018. (Pearson)

Schedule:

Week No.	Topics
1	Introduction to Computer Security
2	Classical Encryption Techniques
3	Block Ciphers and the Data Encryption Standard
4	Advanced Encryption Standard+ Block Cipher Operation
5	Public-Key Cryptography and RSA
6	Cryptographic Hash Functions - SHA
7	Midterm
8	Message Authentication Codes + Digital Signatures
9	Malicious code-Malware

10	Non-Malicious Program Errors
11	Techniques used by Hackers 1
12	Techniques used by Hackers 2
13	Computer Security Technology
14	Wireless Network Security
15	Final Exam

Evaluation:

The weight (tentative) in final grade to midterms, home works etc. is as follows:

Midterm Evaluation:	(30%)
Lab	(30%)
Final Exam:	(40%)

Policies:

As set by BAU regulations, and specified in Student Manual, students who miss more than one-fifth of the sessions of any course in the first ten weeks of the semester will be required to withdraw from the course with a grade of "WF".