

Arab Academy for Science and Technology
College of Computing and Information Technology
IS703 Information Systems Security
CS716 Data Security

Spring 2014
3 Credit Hours
Lectures: Tuesday 6 – 9 PM

Instructor: Dr. Ayman Abdel-Hamid

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Course home page:

Office hours: by appointment.

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Text

William Stallings, [*Cryptography and Network Security: Principle and Practice*](#), 6th Ed, Prentice Hall, 2014.

Course Objective

The course is an introduction to computer and network security. The course encompasses the study of security policies, models, and mechanisms for secrecy, integrity, and availability. Topics include basic cryptography and its applications, security in computer networks and distributed systems and control and prevention of viruses and other rogue programs, operating system models and mechanisms for mandatory and discretionary controls, data models, concepts and mechanisms for database security. In addition, hands-on experience will be provided where appropriate using Java security extensions.

Course Workload

One lecture is scheduled per week.

Course material will be introduced in lectures. Course material will be supplemented through reading material (conference/journal papers). A midterm and comprehensive final exams are scheduled. Furthermore, exercises/questions will be assigned as homework. Moreover, a group research project (and/or group research seminar) will be assigned during the course of the semester.

Topics

Tentatively, the topics that will be covered include:

- Security services, mechanisms, and attacks
- Basic cryptography principles
 - Symmetric Encryption
 - Public-key Encryption
 - Hash Algorithms
 - Digital Signatures
- Network Security
 - Authentication protocols and services
 - Email security
 - Web security
- System Security
 - Intrusion detection
 - Malicious Software
 - Firewalls
- Database Security

Grading

Homework	20%
Mid-Term	20%
Comprehensive final exam	30%
Project(s)	30%

The instructor reserves the right to change the grading scheme or add assignments/projects/exams.

Policies

- Homework/Assignments are due at the beginning of the class on the due date.
- Late submission will be penalized by 20% off for each late day.
- Attendance is crucial to your success in this course. You have the responsibility to cover any missed material.

Academic Honesty

The honor code applies to all homework/assignments and examinations. The instructor's academic honesty policy is very strict; instances of academic dishonesty will be penalized, ordinarily by failure of the course (in addition to any University penalties). *All work submitted must be the student's own work!*

It is unprofessional and dishonest to submit someone else's work as your own.