

King Fahd University of Petroleum and Minerals
College of Computer Sciences and Engineering
Department of Computer Engineering

COE 451 Computer and Network Security (3-0-3)

Instructor: Dr. Marwan Abu-Amara (marwan@kfupm.edu.sa) **Phone:** 1632 **Office:** 22-145
Term: 141 (1st term 2014–2015)
Day & Time: MW 10:00 AM – 11:15 AM
Location: 24-180
Prerequisite: COE 344 (Computer Networks)
Textbook: *Information Security: Principles and Practice*, Mark Stamp, Wiley, 2nd Edition, 2011.
Office Hours: MW 11:15 AM – 12:00 PM or by appointment
Web Site: <http://faculty.kfupm.edu.sa/COE/marwan>

Description

Introduction to computer security (concepts, threats, attacks, assets, scope, trends). Cryptographic protocols and standards. Integrity verification mechanisms. Wireless network security and associated protocols. Software tools to apply security in user environments. Access Control models and mechanisms. Database security, Intrusion detection systems, Firewalls. Malicious software, DoS attacks, Trusted computing and multilevel security.

Tentative Grading Policy:

- Homeworks**30%**
- Midterm Exam**30%** (Week 07 – Wednesday October 29, 2014 during class period)
- Final Exam**40%** (*Comprehensive* – Thursday January 08, 2015, 7:00 PM)

IMPORTANT NOTES:

- All KFUPM regulations and standards will be enforced. Attendance will be checked each class. The KFUPM rule pertaining to a DN grade will be strictly enforced (i.e. > **6 absences** will result in a DN grade).
- If you are late to the class for more than 10 minutes (i.e. arrive after 10:10 AM), you will **NOT be allowed to enter** the classroom and you will be considered absent for that class.
- Only university approved/official/certified excuses will be accepted.
- Use of cell phones, smart phones, and tablets during class period and during exams is absolutely **prohibited**.
- Homeworks are to be submitted **in class** on the due date. Late homeworks will **NOT be accepted**.
- You have up to the next class period to object to the grade of a homework or an exam from the end of the class time in which the graded papers were distributed back. If for some reason you cannot contact me within this period, send me an email requesting an appointment. The email should be sent before the next class period.
- **NO make-up exams.**
- Final exam is **comprehensive**.

Tentative schedule (3 hours equal 1 week of class time)

- *Introduction*
 - Chapter 1 (1 hour)
- *Crypto*
 - Chapter 2: Crypto Basics (3 hours)
 - Chapter 3: Symmetric Key Crypto (4 hours)
 - Chapter 4: Public Key Crypto (4 hours)
 - Chapter 5: Hash Functions and Other Topics (4 hours)
- *Access Control*
 - Chapter 7: Authentication (4 hours)
 - Chapter 8: Authorization (2 hour)
- *Protocols*
 - Chapter 9: Simple Authentication Protocols (4 hours)
 - Chapter 10: Real-World Security Protocols (5 hours)
- *Software*
 - Chapter 11: Software Flaws and Malware (4 hours)
 - Chapter 12: Insecurity in Software (4 hours)
 - Chapter 13: Operating Systems and Security (4 hours)