

1. Course Number and Course Title:

COE 555 – Computer and Network Security

2. Credits Hours:

3 – 0 – 3

3. Prerequisites and/or Co-Requisites:

Prerequisite: Admission to MSE-COE Program.

Co-requisites: None

4. Name and Contact Information of Instructor:

Dr. Fadi A. Aloul

Office: EB1-252

Email: faloul@aus.edu

Phone: (06)515-2784

Office Hours: Posted on office door

5. Course Description (Catalog Description):

Covers advanced topics in computer and network security, including: Information security and risk management, disaster recovery planning, operations security, access control, applied cryptography and public key infrastructure, network security, and laws and regulations in computer security.

6. Textbook and other Supplemental Material:

Textbook:

- Wm. Conklin et al, *Principles of Computer Security, Comp TIA Security+ and Beyond*, 3rd edition, McGraw-Hill, 2011.

Other supplemental material:

- R. Panko, *Corporate Computer and Network Security*, 2nd edition, Prentice Hall, 2009.
- S. Harris, *CISSP All-in-One Exam Guide*, 5th edition, McGraw-Hill, 2010.

7. Learning Outcomes:

Upon completion of the course, students will be able to:

1. Implement risk, change, and privilege management measures
2. Enable disaster recovery and business continuity
3. Ensure operations security
4. Employ secure access control measures
5. Use cryptography and public key infrastructure to protect data
6. Describe the threats and countermeasures of network attacks
7. Understand the laws and regulations in computer security

8. Teaching and Learning Methodologies:

Methods include lectures; problem and project based learning methods (homework, quizzes, case studies, and team project) and class discussions. Guests will be invited for short seminars and workshops to illustrate the practical relevance of the course.

9. Course Topics and Schedule:

Topic	Weeks
Principles of Computer Security	1
Access Control & Physical Security	2
Applied Cryptography and PKI	2
Telecommunications and Network Security	2
Disaster Recovery Planning	2
Risk Management	2
Operations Security	2
Laws and Regulations in Computer Security	2
Review	1
Total:	16

10. Schedule of Laboratory and other Non-Lecture Sessions:

Project implementation and demonstration

11. Out-of-Class Assignments with Due Dates:

Assignment	Due Date (tentative)
Project 1	End of Week 3
Project 2	End of Week 5
Project 3	End of Week 7
Project 4	End of Week 9
Project 5	End of Week 11
Project 6	End of Week 13
Research Project	End of Week 15

12. Student Evaluation:

Assessment	Weight	Due Date (tentative)
Attendance & Class Participation	5%	
Midterm Exam	30%	Week 9
Quizzes & Projects	35%	Every other week
Final Exam	30%	As scheduled by Registrar

13. Contribution of Course to Program Outcomes

This course contributes to the accomplishment of the following program outcomes:

Program Outcome	Extent of Contribution
1. Perform research emphasizing creativity, independent learning and scientific methods in a chosen area of electrical engineering.	●
2. Apply advanced mathematics and engineering knowledge in identifying, formulating and solving engineering problems.	
3. Select and use techniques, skills and modern tools necessary for research or professional practice.	○
4. Communicate effectively.	●
5. Recognize the need for, and engage in, lifelong learning.	
6. Attend to professional and ethical responsibilities.	○

Extent of contribution: ● high; ◐ medium; ○ low