

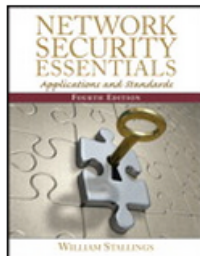
SYLLABUS

2012 Fall Day Semester
August 27, 2012 – December 13, 2012
CS470 Network Security

Class Schedule: 5:30 – 6:50 PM; T, Th in room H124
Office Hours: 4:15 – 5:15 PM; T in room Kieffer 26
(Other office hours by appointment)

Instructor Information: Salvatore (Sal) Aurigemma, B.S., M.S., Ph.D. (ABD)
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Contact: 808-352-0307

1. OVERVIEW



In this age of universal electronic connectivity, viruses, hackers, electronic eavesdropping, and electronic fraud, information security is paramount. Utilizing the respected text *Network Security: Applications and Standards (4/e)*, this class provides a practical survey of network security applications and standards, with an emphasis on applications that are widely used on the Internet and for corporate networks.

TEXTBOOK:

CS 470 Network Security (3 Credits)

Textbook: **William Stallings “Network Security Essentials: Applications and Standards”, Fourth Edition**, Pearson, Prentice Hall, Inc., **ISBN-10: 0-13-610805-9** or **ISBN-13: 978-0-13-610805-4**.

- **Textbook** (hard copy) can be purchased from any source (book store, Internet used books websites, other sources such as mypearsonstore (see link below), etc): <http://www.mypearsonstore.com/bookstore/product.asp?isbn=0136108059>

Keep in mind that ISBN, author, title and *Edition* is your verification that you purchasing a correct textbook.

or

- **eBook** (online book) can be purchased from [Network Security Essentials: Applications and Standards, CourseSmart eTextbook, 4th Edition](#) **\$36.99** | ISBN-13: 978-0-13-610810-8

and

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- **Digital Products. Online Practice Exams (NOT required, but recommended)**
[Premium Content and Web Chapters for Network Security Essentials: Applications and Standards, 4th Edition](#) **\$24.00** | ISBN-13: 978-0-13-610806-1

2. COURSE LEARNING OUTCOMES AND LINKAGES TO PROGRAM LEARNING OUTCOMES

At the conclusion of the CS470 course, students will demonstrate:

1. The ability to understand and discuss key computer systems security requirements within an organization.
2. An understanding of encryption principles and algorithms (symmetric, asymmetric, block ciphers, public key encryption, message authentication).
3. An understanding of possible network security vulnerabilities of information systems, how to identify them, and protective options.
4. An understanding of Internet security vulnerabilities aligned to the concept of “cyberspace” that now includes critical infrastructure protection (corporate and governmental IT infrastructure, power grids, and water supply, chemical and oil refineries, etc).
5. The student will demonstrate an understanding of the nature of network intrusion threats and attacks and strategies for intrusion prevention and detection.
6. The student will acquire an essential knowledge of evolving cyber security strategies in building security into critical systems as early in the system life cycle as possible, identify categories of cyber-attacks, and to take a more proactive approach to risk management.

3. CATALOG DESCRIPTION

The objective of this course is to provide an up-to-date overview of the principles and best practices in computer network security. It explores ever-changing security issues of protecting computer assets against unauthorized access and alterations. The key security concepts: confidentiality, integrity, availability, authenticity and accountability are discussed. Students learn about cryptographic algorithms. Prerequisite: CS 480.

4. COURSE DESCRIPTION

This course provides a practical survey of network security applications and standards, with an emphasis on applications that are widely used in corporate networks. Attention is given to standards, especially Internet standards, which are widely used in organizations today. The course topics are organized into three parts, as described in the course textbook:

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- **Part One:** Provides a brief overview of cryptography and associated elementary principles associated with network security.
- **Part Two:** Provides a detailed treatment of network security principles and application of these principles to transport layer protocols, wired and wireless networks, email security, and Internet Protocol (IP) security.
- **Part Three:** Discusses the application of security principles at the system level, including intrusion detection and prevention, malware fundamentals, and firewall technologies and configuration principles.

5. TENTATIVE SCHEDULE

Note: Lecture schedule subject to change at the discretion of the instructor based on students' progress. Schedule is defined in the separate document "CS470_2012_Fall Schedule & Assignments." This document will be posted on eCollege, doc sharing folder.

| Resources |
|---|
| http://williamstallings.com/ http://www.computersciencestudent.com/ ← great resource for students, including "humor to take your mind off your work once in while" |

6. GRADING

Grading will be based on the following table:

| GRADING YOUR ACCOMPLISHMENTS: | | GRADE SCALE: | |
|----------------------------------|-----------|----------------|--|
| Team Project | 20 points | A = 100% – 90% | |
| Quizzes & tests | 20 points | B = 89% – 80% | |
| Exams | 60 points | C = 79% – 70% | |
| Attendance & class participation | Priceless | D = 69% – 60% | |

7. POLICIES

Late assignments

Any assignment turned in after the due date deadline is considered late and will be graded accordingly. Class begins on time. **Chronic tardiness will be viewed as absence from class.** Regular attendance is expected and essential for your progress in this class. Although our

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textbook is excellent, the goal of the lecture and discussion is to provide the needed context to remove barriers to your understanding of the material.

Please refrain from eating in class

No makeup exams will be granted in the event of an absence. If a student cannot attend a class in which an exam has been scheduled, the student must notify the instructor no later than the class prior to the scheduled exam. In the event of illness, a Doctor's note will be expected.

You are encouraged to work together; however, all graded material must be your own. You are also expected to have read and to abide by the "Student Rules of Conduct" which is available in your copy of Chaminade University's Student Handbook.

Policy on cell phones and music devices

Music Devices and Cellular Phones: Unless specifically permitted by your instructor, the use of music devices and cell phones is prohibited during all Natural Science and Mathematics classes at Chaminade as it is discourteous and may lead to suspicion of academic misconduct. Students unable to comply will be asked to leave class.

ADA Accommodations: Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from the CUH Counseling Center (Dr. June Yasuhara, 735-4845) by the end of the third week of classes. Failure to provide written documentation will prevent your instructor from making necessary accommodations. Please refer any questions to the Dean of Students and review procedures at www.chaminade.edu/student_life/sss/counseling_services.php