

Course Syllabus

School of Engineering and Computer Science
Washington State University Vancouver

CS 427

Computer Security

Monday, Wednesday (2:50 – 4:05)

Course Coordinator

Dr. Orest Pilskalns
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Catalog Description

Computer security concepts, models and mechanisms; encryption technology, formal models, policy and ethical implications.

Prerequisite Courses

CS 360 – Operating Systems
MATH 216 – Discrete Structures

Prerequisite Topics

- Abstract Algebra, Probability Theory
- Proficient in at least one high level programming language.
- Implementation of common data structures for lists, trees, and graphs
- Use of UNIX or Windows environment for coding, compilation, debugging and testing

ABET Measured Course Outcomes

Students taking this course will:

1. analyze computational problems using mathematical techniques. *(Contributes to performance criteria A-4).*
2. be aware of the global issues that influence decisions affecting computing technology. *(Contributes to performance criteria H-1).*
3. describe one or more open problems in computer science. *(Contributes to performance criteria J-1).*

Required Textbooks

Cryptography and Network Security (Principles and Practices), Fourth Edition, William Stallings, Prentice Hall 2006.

Reference Material

Applied Cryptography (Second Edition), Bruce Schneier, Wiley Inc. 1996

Major Topics Covered in the Course

1. An examination of conventional encryption algorithms and related mathematical theory, as well as design principles, including a discussion of the use of conventional encryption for confidentiality.
2. An examination of public-key encryption algorithms, message authentication, integrity, non-repudiation, hash functions, digital signatures, risk analysis, policy issues, auditing, and public-key certificates.
3. An overview of network security tools and applications including Kerberos, PGP, S/MIME, IP Security and SSL.
4. Examine system-level security issues, including the threat of and countermeasures for intruders and viruses and use of firewalls and trusted systems.

Homework

Homework is due at the beginning of class on the date specified in the assignment. Late homework and projects will lose 20% for each day they are late. Once solutions to the homework are handed out or discussed in class, late homework will no longer be accepted. Points will be deducted for incorrect grammar, punctuation, and spelling.

Exams Quizzes

Examination times and dates will be announced in class. Quizzes may be administered without prior announcement. Makeup exams will not be given without prior authorization or written documentation that the student was unable to participate. Unexcused missed exams result in a grade of zero for that exam. Excused absences from exams include personal emergencies and work-related obligations, however confirmation is necessary.

Oral and Written Communications

Students are required to write a term paper.

Social and Ethical Issues

We discuss ethical issues surrounding computer enabled crime, intellectual property rights, and privacy.

Grading Policy (Tentative)

Midterm Exam and Final Presentation 45 %
Homework, Projects 50 %
Discretionary 5 % (Attendance is required).

If you fail to attend on more than 1 occasion, you will loose your discretionary points.

A	94 - 100%	A-	91 - 93 %	B+	87 - 90%	B	83 - 86%
B-	80 - 82%	C+	77 - 79%	C	73 - 76%	C-	71 - 72%
D+	68 - 70%	D	62 - 67%	D-	60 - 61%	F	≤ 59%

Course Policies:

Plagiarism or cheating will not be tolerated. University policy will be adhered to in all such cases. There is a difference between collaboration and plagiarism. Plagiarism is the act of using another's work without giving them credit for it. Collaboration is the exchange of ideas, the debate of issues and the examination of readings among each other that enables you to arrive at your own independent thoughts. Collaboration is encouraged, however plagiarism or cheating will result in a failing grade for the exam or assignment in question.

Reasonable accommodations for disabilities are available for students who have a documented disability. Students must notify the course instructor during the first two weeks of class of any accommodations needed for the course. Late notification may cause the requested accommodations to be unavailable. All accommodations must be approved through the Associate Director of Student Services, in SS203A, 546-9567.

Late drops are governed by departmental and college policies. The student must show documented evidence supporting reasons for a request to drop a class after the deadline. Requests will be considered on an individual basis.

Course Coordinator: Orest Pilskalns
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