COMPSCI 469   Computer Security

University of Wisconsin-Milwaukee
Spring 2019

Class meetings:
Lectures: Monday, Wednesday: 11:00am - 12:15pm, BOL B60.

Instructor: Dr. Guangwu Xu;
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Office hours: 1:30pm-3:00pm, Monday, Wednesday (or by appoint-
ment).

Textbook:
Introduction to Computer Security
by M. T. Goodrich and R. Tamassia
Addison-Wesley (ISBN-10 0-321-51294-9)

Attendance Policy: Students are expected to attend every lecture.

Assignments: There will be a total of six assignments (five homework assign-
ments and one programming assignment) in the course.

• Homework assignments will involve problem solving and algorithm anal-
ysis. These assignments cover material presented in lecture and the read-
ings. They are to be completed individually.

• Programming assignment will involve implementation of some crypto-
graphic routines in C/C++, or Java. Programs should be well designed,
and use good coding practice.

• Late assignments are not accepted.

Exams: There will be a midterm test and a final exam. They are all close-
book. The format of questions will be multiple choice and some longer prob-
lems. Exam questions will be based on material covered in the book and/or
in lecture.
Midterm Test Date: Monday, March 11.
Final Exam Date Time: Friday, May 17, 10:00–12:00.
Grading:
For Undergraduate Students:
Assignments (40%), midterm test (28%), final exam (30%), attendance and participation (2%)

For Graduate Students:
Assignments (30%), project (10%), midterm test (28%), final exam (30%) (midterm and final will be different from that for undergraduate students), attendance and participation (2%)

Desired Outcomes:
Students will be

1. able to understand basic components of computer security
2. able to understand how security threats are classified and dealt with.
3. able to understand fundamentals of symmetric key, public key cryptography and hash functions; and able to implement simple primitives using C/C++ or Java.
4. able to understand protocols of security services.
5. familiar with network security design using available security solutions.
6. able to understand design issues and working principles of various system authentication methods.
7. able to understand principles for the design and implementation of security mechanisms.
8. able to explain and compare security mechanisms for conventional operating systems
9. able to understand how to classify and defend against computer viruses.
10. able to explain common vulnerabilities in computer programs.

Topics: Overview; Operating system security; Malware; Symmetric-key cryptography; Public-key cryptography; Network security; Other applications.

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