

# Computer Security

**Syllabus**

**CSC582**

**Fall 2009**

**Instructor:** Yi Hu  
**Phone:** (859) 572-7739  
**Office:** ST 370  
**Email:** huy1@nku.edu  
**Office Hours:** MWF 10:00am - 11:00am, TR 5:00pm-6:00pm, or by appointment

**Class Meeting Time:** TR 6:15pm – 7:30pm

**Class Meeting Place:** ST 254

**Textbook:** Security in Computing (Fourth Edition) (ISBN:0132390779)

**Prerequisites:** Regular admission to MSCS program.

**Course Content:** Applied cryptographic algorithms and protocols; secure programming; host, network, and data security, attacks and defenses, policies and procedures.

**Course Topics:** This course will introduce computer security concepts and practices to undergraduate and graduate students. It will cover the following topics:

- Basic Components of Computer Security
- Access Control Matrix
- Confidentiality Policies
- Integrity Policies
- Basic Cryptography
- Building Secure Software
- Malicious Logic
- Network and Web Security
- Intrusion Detection

**Student Outcomes:** By the end of the course, students will

- Understand the mechanisms to protect and detect computer systems
- Understand how to build secure software
- Understand cryptography and public-key systems
- Understand security policies
- Be able to apply security principles to hosts and networks

**Student Assessment Information:**

Students will be assessed through homework assignments, projects, and tests that are designed to demonstrate the student's understanding of computer security.

**Grading:** Homework: 15%  
Project and Paper: 25%  
Exam 1 (6:15pm-7:30pm, Thursday, Sep. 24, 2009): 20%  
Exam 2 (6:15pm-7:30pm, Thursday, Oct. 29, 2009): 20%  
Final (6:45pm-8:45pm, Tuesday, Dec. 15, 2009): 20%

| Grading Scale |                            |             |
|---------------|----------------------------|-------------|
| Letter Grade  | % Equal to or Greater than | Grade Point |
| A             | 93                         | 4.00        |
| A-            | 90                         | 3.67        |
| B+            | 87                         | 3.33        |
| B             | 83                         | 3.00        |
| B-            | 80                         | 2.67        |
| C+            | 77                         | 2.33        |
| C             | 70                         | 2.00        |
| F             | 0                          | 0           |

**Absentee Policy:** Students should make their best efforts to attend each class. If you missed any class, you are responsible for any content covered in that class.

**Make-up Test:** Only for reasonable reasons a student may make-up one of the missed tests. The student needs to notify the instructor immediately after the missed test with verifiable reasons. After getting the permission for the make-up test from the instructor by email, the student will be given a make-up test. A student can only have one make-up test for this class.

**Disability Disclosure:** Students with disabilities who require accommodations (academic adjustments, auxiliary aids or services) for this course must register with the Disability Services Office. Please contact the Disability Service Office immediately in the University Center, Suite 320 or call (859)572-6373 for more information. Verification of your disability is required in the Disability Services Office for you to receive reasonable academic accommodations.

*Schedule of Classes (Subject to Changes)*

| Week | Date  | Readings                 | Topics  |
|------|---|--------------------------|---|
| 1    | T, 8/25/09<br>R, 8/27/09                            | Chapter 1, 2             | Security problems in computing<br>Elementary Cryptography |
| 2    | T, 9/1/09<br>R, 9/3/09                              | Chapter 2 cont'd         | Elementary Cryptography                                   |
| 3    | T, 9/8/09<br>R, 9/10/09                             | Chapter 3                | Program Security  |
| 4    | T, 9/15/09<br>R, 9/17/09                            | Chapter 4                | Protection in OS  |
| 5    | T, 9/22/09 (review)<br><b>R, 9/24/09 (exam 1)</b>   |                          | review and exam   |
| 6    | T, 9/29/09<br>R, 10/1/09                            | Chapter 5                | Designing Trusted Operating Systems                       |
| 7    | T, 10/6/09<br>R, 10/8/09                            | Chapter 5 cont'd         | Designing Trusted Operating Systems                       |
| 8    | T, 10/13/09<br>R, 10/15/09                          | Chapter 6                | Database and Data Mining Security                         |
| 9    | <b>T, 10/20/09 (no class)</b><br>R, 10/22/09        | Chapter 6 cont'd         | Database and Data Mining Security                         |
| 10   | T, 10/27/09 (review)<br><b>R, 10/29/09 (exam 2)</b> |                          | review and exam   |
| 11   | M. 11/3/09<br>R, 11/5/09                            | Chapter 7                | Security in Networks                                      |
| 12   | T, 11/10/09<br>R, 11/12/09                          | Chapter 7 cont'd         | Security in Networks                                      |
| 13   | T, 11/17/09<br>R, 11/19/09                          | Additional: Web Security | Web Security  |
| 14   | T, 11/24/09<br><b>R, 11/26/09 (no class)</b>        | Additional: Web Security | Web Security  |
| 15   | T, 12/1/09<br>R, 12/3/09                            | Chapter 10               | Privacy in Computing                                      |
| 16   | R, 12/8/09<br>T, 12/10/09 (review)                  | Chapter 10 cont'd        | Privacy in Computing                                      |
|      | <b>T, 12/15/09 Final Exam</b>                       |                          |   |