

Securing Computer System

Syllabus

CIT 380

PACE

Fall 2009

Instructor: Yi Hu
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Office: ST 370
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Office Hours: M 5:00pm-6:00pm, MWF 10:00am-11:00am, TR 5:00pm-6:00pm,
or by appointment

Class Meeting Time: M 6:00pm – 9:30pm

Class Meeting Place: CA 152

Textbook: Practical Unix & Internet Security, 3rd Edition (ISBN: 978-0596003234)

Counter Hack Reloaded: A Step-by-Step Guide to Computer Attacks and Effective Defenses (2nd Edition) (ISBN: 978-0131481046)

Prerequisites: C or better in CIT 370.

Course Content: An introduction to the concepts and technologies of computer security, with a focus on the practical aspects of securing computers, including common security threats and computer crime, authentication, cryptography, malware, operating systems security, and network security.

Course Topics: This course will introduce programming concepts to undergraduate students. It will cover the following topics:

- Security Policy
- Authentication
- File System Security
- Cryptography Basics
- Network Security
- Anatomy of an computer attack
- Secure Programming
- Security Incident Handling
- Penetration Testing
- Malware
- Web Security

Structure of Class: There is a reading list for each week of this class. Students are encouraged to read the materials before each class. For each class, I will give a lecture first. Then there is a hands-on lab for enhancing the learning process.

- Student Outcomes:** By the end of the course, students will
- Understand cryptography basics, security policy, and access control mechanisms
 - Understand the mechanisms of various attacks targeted at computer systems
 - Be able to pursue vulnerability assessment for applications and information infrastructures
 - Be able to development kills for secure programming
 - Be able to use tools to secure networked computer system and learn various skills to tackle computer incidents

Student Assessment Information: Students will be assessed through homework/lab assignments and tests that are designed to demonstrate students’ understanding of each concept.

Grading: Assignments: 20%
 Lab report: 20%
 Project: 20%
 Midterm exam (Monday, Sep. 14, 2009): 20%
 Final exam (Monday, Oct. 12, 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	73	2.00
C-	70	1.67
D+	67	1.33
D	60	1.00
F	0	0

Grading Procedure for Assignments: Students should turn in their assignments on the due date for each assignment. For an assignment turned in after the due date, 10% of your score will be deducted for every calendar day that the assignment is late. Also, once the solution to an assignment has been discussed in the class or posted on NKU’s Blackboard System, no late assignment will be accepted.

Information and Policies:

- Course related materials will be posted on Blackboard system.
- Students should submit homework, lab assignment, and project report to Blackboard system.
- We only have 6 class meeting time plus the night for the final exam (we will not meet on Sep. 7 which is labor day). So attendance is essential for this class.
- Last day to drop a course with a grade of *W* is Friday, Sep. 25, 2009.

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 a reasonable reason a student can be allowed to have a make-up test for one of the missed tests. The student needs to notify the instructor immediately after the missed test with a verifiable reason. 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 Class: See the next page.

Week	Date	Topics
1	M, 8/24/09	Users and Groups Authentication Filesystems and Security
2	M, 8/31/09	Filesystems and Security Cryptography Basics
3	M, 9/7/09 (no class)	Self study
4	M, 9/14/09 (exam)	Cryptography Basics Mid-term Exam
5	M, 9/21/09	TCP/IP Web Security
6	M, 9/28/09	Reconnaissance, Scanning
7	M, 10/5/09	App. and OS attacks Network Attack and IDS
8	M, 10/12/09	Final Exam