CAP 6135: Malware and Software Vulnerability Analysis

Spring 2012

Instructor: Dr. Cliff Zou (HEC 243),   407-823-5015,   czou@cs.ucf.edu
Course Time: MoWe 12:00pm-1:15pm,   **PSY 0111** (Psychology Building)
Office Hour: MoWe 9:00am-11:00am
Course Webpage: http://www.cs.ucf.edu/~czou/CAP6135/
Prerequisite: Senior standing or graduate student. Knowledge on programming language (preferring C or C++), computer architecture, algorithm, and networking. Know basic usage of Unix machine.

Description:

This course will provide an introduction to several important aspects about malicious codes and software security, including Internet virus/worm/spam, typical software vulnerabilities (e.g., buffer overflow), software fuzz testing, secure programming, vulnerability prevention techniques, etc. In addition, we will provide representative research papers on software security and malware research for students to read, present and discuss in order to learn the frontier of software security research. Students will have a research-format term project to work on one of software security related research topics. During the semester, we will have about three programming projects on topics such as buffer-overflow exploit, fuzz testing, intrusion detection or malware propagation simulation.

Textbook: No require textbook. We will use research papers, online resources, and some contents from the following reference books.

1. Building Secure Software: How to Avoid Security Problems the Right Way.   by John Viega, Gary McGraw

2. Software Security: Building Security In.   by Gary McGraw

3. 19 Deadly Sins of Software Security (Security One-off)   by Michael Howard, David LeBlanc, John Viega

4. Hacking: The Art of Exploitation, 2nd Edition by Jon Erickson

Video Streaming:

We will use UCF Tegrity system. Tegrity videos can be accessed via a link in WebCourse, or directly via this link: https://tegrity.ucf.edu/TegrityUtils/Login.aspx

Grading: +/- grading system will be used (A, A-, B+, B, etc). The tentative weights are:

	Face-to-face students	Online session students
In-class presentation	20%	N/A
In-class participation	10%	N/A
Paper review reports	N/A	30%
Homework	10%	10%
Program projects	30%	30%
Term project	30%	30%

Assignment and Exam Format:
Homework assignments and programming projects are released and must be submitted via UCF WebCourse. You must submit them according to the described deadline, even with partial solutions. Don't wait until the last minute to submit in case you have trouble to access WebCourse.

Academic Honesty
Plagiarism and Cheating of any kind on an examination, quiz, or assignment will result at least in an "F" for that assignment (and may, depending on the severity of the case, lead to an "F" for the entire course) and may be subject to appropriate referral to the Office of Student Conduct for further action. See the UCF Golden Rule for further information. I will assume for this course that you will adhere to the academic creed of this University and will maintain the highest standards of academic integrity