

IT 430

Ethical Hacking for Administrators

Syllabus

Instructor: Stan J. Senesy (senesy@njit.edu)

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Office hours: Online only during this semester

Text: Weidman, Penetration Testing: A Hands-On Introduction to Hacking, No Starch Press, 2014 ISBN: 978-1593275648

Schedule: Section 002 Tuesday, Thursday 2:30 – 3:50pm GITC 3600

Course Description

This course basically goes through everything that is involved in performing a basic penetration test. In fact, the course project will be to write a test report. We will cover the background for testing, the legal justification, test plan, as well as the exploits used during the test. Penetration testing is sometimes referred to as 'Ethical Hacking'.

What is ethical hacking? The threat to systems is one that is continuously changing and evolving. It is not sufficient that a System Administrator harden a system based upon the threats that are currently known. Typically, one must think out of the box with the mentality that in order to catch a thief, you need to think like a thief. The goal of the ethical hacker is to help the organization take preemptive measures against malicious attacks by attacking the system himself; all the while staying within legal limits.

The quote the certification guide, an Ethical Hacker is an individual who is usually employed with the organization and who can be trusted to undertake an attempt to penetrate networks and/or computer systems using the same methods as a Hacker. Hacking is a felony in the United States and most other countries. Only when it is done by request and under a contract between an Ethical Hacker and an organization, it is considered legal. The most important point is that an Ethical Hacker has authorization to probe or attack the target. Illegal or unethical use of the techniques discussed in class will result in immediate dismissal from the course and potentially other consequences.

Course Outcomes

Upon completion of this course, students will have developed skills that will allow them to:

- develop a comprehensive test plan utilizing penetration testing
- conduct passive and active reconnaissance
- integrate social engineering into the testing scenario

Prerequisites

IT 340 – Core administration skills learned in this course are required for IT 430 and will not be covered during this class. **Do not take IT 430 unless you have successfully completed IT 340. Concurrent registration is not acceptable.**

Course Computing Requirements

You must have access to and administrative rights on, a computer that meets the NJIT minimum baseline computer system standards to complete this course. You can find a listing of the minimum computing requirements at <https://ist.njit.edu/fall-2019-recommended-specs/> The computer must have a webcam and microphone for exams.

We will be using vCloud to create and administer virtual instances of various operating systems. We will cover the configuration of your computer during the first week of class.

Please note that students are responsible for the administration/maintenance of their own computer. This includes any software loaded onto it for this course. While I will provide help with problems when I have time available, responsibility for resolving problems remains with the student.

Grading:

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|-----------------------|-----|
| Homework/Labs/Quizzes | 25% |
| Project | 20% |
| Midterm | 20% |
| Final Exam | 35% |

Important change for this year – You must achieve a minimum passing (55%) score in each section of the course (homework/project/midterm/final) to pass. Omitting a portion of the course will not be sufficient to pass. Grades will be computed on a straight scale out of 100 possible points

| | |
|--------|----|
| 90-100 | A |
| 87-89 | B+ |
| 80-86 | B |
| 77-79 | C+ |
| 70-76 | C |
| 56- 69 | D |
| > 55 | F |

Lectures

I tend to use PowerPoint slides for the main points in my presentations. You can find a copy of the slides that I will use on the course Canvas board at:

<https://canvas.njit.edu/>

You will need your UCID and password to login. There are tutorials available for you to view if this is your first experience with Canvas.

The actual lecture will be given through WebEx synchronously at the day and time indicated on the Registrar's web site. Attendance and participation are expected and mandatory.

Homework

You will be generally be assigned an activity every other week. Each homework assignment will cover 2 weeks' worth of topic areas. We will usually go over information about any potential problem areas that might be encountered during the lecture presentation for that week.

Project

There will be a semester-long individual project that will involve writing a test report based on the course lab/homework experiences. Details of the project will be discussed once the course begins.

Assessment

The midterm and final will constitute a significant portion of your overall grade and be given online. Exam dates and times are listed in the syllabus schedule. The exams will contain information from the text, as well as lectures. The final will be cumulative. Both exams may potentially be given using the Respondus monitoring system. A webcam with microphone is required.

If you miss an exam, the Dean of Students will validate your emergency and will contact me regarding rescheduling. If you have a schedule conflict that will cause you to miss an exam, please inform me immediately so that we can arrange an alternate date for you to complete the test.

Collaboration

You are encouraged to work together with your classmates to help your high-level understanding of the material presented in the course. Any solutions to assignments/exams/projects presented for credit must be

work created **on your own**. Plagiarism, cheating, or any other anti-intellectual behavior will be dealt with as per the NJIT Code of Academic Integrity. You can find a copy of the Code here:

Academic Policies (Please Read This Carefully)

Late work is not accepted.

If you have an emergency (hospitalization, military service, or anything defined as an emergency by the University) please contact the office of the Dean of Students. I will not accept your doctor's note, etc. They will validate it and get back to me at which point I will remove the late penalty from your work. Grades will not be posted until after the 96-hour period has expired.

I do not offer 'extra credit' assignments. Every student has an equal opportunity to earn the grade they would like in the course. The overall point spread is broad enough that doing poorly on a single assignment or quiz should not significantly affect your grade.

I do not curve individual assignments. If, at the end of the course I determine that a curve is justified, then I will curve ALL final grades (either positively or negatively) equally. Grading scales are applied consistently across the entire class - no exceptions.

Academic Integrity

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:

<http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>

*Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. **Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university.** If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu*