

# CNIT 123: Ethical Hacking and Network Defense

Fall 2017 Sam Bowne

72250 501 Lec W 06:10-09:00PM SCIE 200

## Catalog Description

ADVISE: CNIT 106 or 120 or 201C

Learn how hackers attack computers and networks, and how to protect Windows and Linux systems. Legal restrictions and ethical guidelines will be taught and enforced. Students will perform many hands-on labs, both attacking and defending, using port scans, footprinting, buffer overflow exploits, SQL injection, privilege escalation, Trojans, and backdoors.



3rd Ed or 2012 Ed OK

Learn about attacks and how to defend Windows and Linux systems. After successful completion of this course, students will be able to:

**Outcome 1:** Determine what an ethical hacker can and cannot do legally, and evaluate credentials and roles of penetration testers.

**Outcome 2:** Perform reconnaissance on a target network using a variety of scanning and probing techniques.

**Outcome 3:** Enumerate and classify Microsoft and Linux Operating Systems vulnerabilities.

**Outcome 4:** Take control of Web Servers and wireless networks, and protect them.

**Outcome 5:** Evaluate and select cryptography and hashing methods, and perform attacks against them.

**Outcome 6:** Select and implement security devices, including routers, firewalls, Intrusion Detection Systems, and honeypots.

## Textbook

Hands-On Ethical Hacking and Network Defense, Third Edition by Michael T. Simpson, Kent Backman, and James Corley -- ISBN: 9781285454610

## Quizzes

The quizzes are multiple-choice, online, and open-book. However, you may not ask other people to help you during the quizzes. You will need to study the textbook chapter before the lecture covering it, and take the quiz before that class. Each quiz is available for one week, up till 8:30 am Saturday. Each quiz has 5 questions, you have ten minutes to take it, and you can make two attempts. If you take the quiz twice, the higher score counts.

To take quizzes, first claim your RAM ID and then log in to Canvas at <https://ccsf.instructure.com>

# Live Streaming

You can attend class remotely using Zoom. A conference will start each Wednesday at 6 pm.

Join from PC, Mac, Linux, iOS or Android: <https://zoom.us/j/166242284>

Or iPhone one-tap (US Toll): +14157629988,,166242284# or +16465687788,,166242284#

Or Telephone: Dial: +1 415 762 9988 (US Toll) or +1 646 568 7788 (US Toll) Meeting ID: 166 242 284 International numbers available: The free version of Zoom is limited to 40 minutes per meeting. So to see the second part of the lecture live, you may have to join with this meeting ID: 387-892-4534 or this link: <https://zoom.us/j/3878924534>

Classes will also be recorded and published on YouTube for later viewing.

## Schedule

<u>Date</u>	<u>Quiz</u>	<u>Topic</u>
Wed 8-23		Motivation: Passwords on a Phone & Lockpicking
Wed 8-30		Ch 1: Ethical Hacking Overview
Wed 9-6		Ch 2: TCP/IP Concepts Review
<i>Fri 9-8</i>	<i>Last Day to Add Classes</i>	
	Ch 2 Quiz due before class	
Wed 9-13	Ch 3 Quiz due before class Proj 1 & 2 due	Ch 3: Network and Computer Attacks
Wed 9-20	Ch 4 Quiz due before class Proj 3 & 4 due	Ch 4: Footprinting and Social Engineering
Wed 9-27	Ch 5 Quiz due before class Proj 5 & 6 due	Ch 5: Port Scanning
Wed 10-4	Ch 6 Quiz due before class Proj 7 & 8 due	Ch 6: Enumeration
Wed 10-11	Ch 7 Quiz due before class Proj 9 & 10 due	Ch 7: Programming for Security Professionals
Wed 10-18	Ch 8 Quiz due before class Proj 11 & 12 due	Ch 8: Desktop and Server OS Vulnerabilities
Wed 10-25	Ch 9 Quiz due before class Proj 13 & 14 due	Ch 9: Embedded Operating Systems: The Hidden Threat
Wed 11-1	Ch 10 Quiz due before class Proj 15 & 16 due	Ch 10: Hacking Web Servers

<b>Wed 11-8</b>	<b>Ch 11 Quiz due before class Proj 17 &amp; 18 due</b>	<b>Ch 11: Hacking Wireless Networks</b>
<b>Wed 11-15</b>	<b>Ch 12 Quiz due before class No Proj due</b>	<b>Ch 12: Cryptography</b>
<b>Wed 11-23</b>	<b>Ch 13 Quiz due before class Proj 20 due</b>	<b>Ch 13: Network Protection Systems</b>
<b>Wed 11-29</b>	<b>No Quiz due Proj 19 &amp; 21 &amp; 22 due</b>	<b>TBA</b>
<b>Wed 12-6</b>	<b>No Quiz due</b>	<b>TBA</b>
<b>Wed 12-13</b>	<b>No Quiz</b>	<b>Last Class: all extra credit projects due -- TBA</b>
<b>Wed 12-20</b>	<b><i>Final Exam</i></b>	