CS 391-950
Ethical Hacking
Spring 2015

Instructor: Shahriar “Nick” Rahimi

- **Office:** Faner 2136
- **Office Hours:** MW 9am-11am And 12pm-1pm
- **E-Mail:** nick@siu.edu
- **Course Web Site:** [https://online.siu.edu/](https://online.siu.edu/)
- **Final Exam:** Monday, May 11 through Thursday, May 14

Email is the best way to contact me. I usually respond to emails within 24 hours during the week and 48 hours on weekends.

**Required Textbook**


**Course Description**

This course will explore the various means that an intruder has available to gain access to computer resources. We will investigate weaknesses by discussing the theoretical background, and whenever possible, actually performing the attack. We will then discuss methods to prevent/reduce the vulnerabilities. This course is targeted specifically for Certified Ethical Hacking (CEH) exam candidates, matching the CEH exam objectives with the effective and popular Cert Guide method of study.

**Prerequisite:** CS 202 or equivalent

**Course Objectives**

Upon successful completion of the course, the student should be able to:

1. Analyze security vulnerabilities of a network and develop a set of solutions for specific networking scenarios.
2. Identify security tools including, but not limited to intrusion detection and firewall software.
3. Exhibit an understanding of the threats posed by viruses to networks through the development of appropriate protection plans.
4. Find and utilize available online resources as they pertain to developing a secure system.
5. Develop comprehensive plans for network security using a full range of available tools.
6. Prepare students for Ethical Hacking Certification (CEH) exam.

Specific topic coverage includes:

- Ethical hacking basics
- Technical foundations of hacking
- Footprinting and scanning
- Enumeration and system hacking
- Linux distros and automated assessment tool
- Trojans and backdoors
- Sniffers, session hijacking, and denial of service
- Web server hacking, web applications, and database attacks
- Wireless technologies, mobile security, and mobile attacks
- IDS, firewalls, and honeypots
- Buffer overflows, viruses, and worms
- Cryptographic attacks and defenses
- Physical security and social engineering

Assignment and Examination Overview

Readings Assignments: Each week, one or two chapters are assigned for reading. You must read the assigned chapters from the textbook first then read the slides to clarify and support concepts encountered.

Lab Assignments: For each chapter there is a lab assignment, hands-on activity that reinforces knowledge you learned from the associated chapter. For most of the labs, students utilize virtual networking lab environment that can be accessed over the internet. These lab assignments are always due on Sunday nights by midnight. All lab assignments must be completed at 100% accuracy to receive full credit. Late lab assignments will not be accepted.

Discussions: Each chapter requires a discussion posts and responses. The discussion format is as follows:
- Analyze, Synthesize, and Apply what you learned. Write a paragraph or two about what the topic was about (analyze), what you learned from the reading and your results (synthesize), and point out how some of this information might play out in the real
world (apply) such as a fact or two that surprised you and how others might not know the same information. Post three questions that concern you about the topic.

**Quizzes:** There are going to be six (6) quizzes. The quizzes will be timed, so you should study beforehand because it will be difficult to finish in time if you are frantically flipping through your book for the answers. Quizzes will come straight out of the reading assignments. There are no quiz make-ups without appropriate written proof.

**Exam:** There will be two exams.

**Online Participation**

You are expected to **regularly review the content of the course D2L website**, read the assigned texts and participate in the discussions and other course activities each week. Assignments should be posted by the due dates. If an emergency arises that prevents you from participating in class, please let your instructor know as soon as possible.

**Attendance Policy**

Attendance will be counted as visiting the course D2L page, participating in the discussions and having posted an assignment during that week of the session. A class week is defined as the period of time between Monday and Sunday. The course and system deadlines are all based on the Central Time Zone.

**Email Communication**

You are responsible for monitoring emails from the instructor (nick@cs.siu.edu). I expect that you check your emails (the email account registered under your Salukinet account) multiple times daily for important messages from the department or your instructor.
Grading and Evaluation Criteria

Your grade will be determined by the percentage of the total points you get. The components of the course grade are:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Assignments</td>
<td>25%</td>
</tr>
<tr>
<td>Discussions</td>
<td>20%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Two Exams</td>
<td>40%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Timeliness of Assignments

It is expected that students submit all courses assignments in a timely manner. Specifically:

- Deliverables (assignments, quizzes, discussion posts, and exam) must be submitted on or before the due date. NO EXCEPTIONS! Late Assignment submissions will not be accepted.
- Discussions will lock on Sunday night and there is no opportunity to make up missed discussions.
- Exam and quizzes must be completed within the window provided.

**No makeup opportunities**

Letter Grading Policy

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90 % and above</td>
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<tr>
<td>B</td>
<td>80 - 89 %</td>
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<tr>
<td>C</td>
<td>70 - 79 %</td>
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<tr>
<td>D</td>
<td>60 - 69 %</td>
</tr>
<tr>
<td>F</td>
<td>Below 60 %</td>
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</tbody>
</table>
## Tentative Course Outline

<table>
<thead>
<tr>
<th>Week</th>
<th>Chapter Readings</th>
<th>Assignment/Discussion</th>
<th>Quiz</th>
<th>Exams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chapter 1</td>
<td>Student Agreement/Introduction/Discussion1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Chapter 2</td>
<td>Lab1/ Discussion2</td>
<td>Quiz1</td>
<td></td>
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<tr>
<td>3</td>
<td>Chapter 3</td>
<td>Lab2/ Discussion3</td>
<td></td>
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<td>4</td>
<td>Chapter 4</td>
<td>Lab3/ Discussion4</td>
<td>Quiz2</td>
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<td>5</td>
<td>Chapter 5</td>
<td>Lab4/ Discussion5</td>
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<tr>
<td>6</td>
<td>Chapter 6</td>
<td>Lab5/ Discussion6</td>
<td>Quiz3</td>
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<td>7</td>
<td>Chapter 7</td>
<td>Lab6/ Discussion7</td>
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<tr>
<td>8</td>
<td>Review &amp; Practice</td>
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<td>Midterm Exam</td>
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<tr>
<td>9</td>
<td></td>
<td>Spring Vacation</td>
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<tr>
<td>10</td>
<td>Chapter 8</td>
<td>Lab7/ Discussion8</td>
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<td>11</td>
<td>Chapter 9</td>
<td>Lab8/ Discussion9</td>
<td>Quiz4</td>
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<td>12</td>
<td>Chapter 10</td>
<td>Lab9/ Discussion10</td>
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<td>13</td>
<td>Chapter 11</td>
<td>Lab10/ Discussion11</td>
<td>Quiz5</td>
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<td>14</td>
<td>Chapter 12</td>
<td>Lab11/ Discussion12</td>
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<td>15</td>
<td>Chapter 13</td>
<td>Lab12/ Discussion13</td>
<td>Quiz6</td>
<td></td>
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<tr>
<td>16</td>
<td>Chapter 14</td>
<td>Discussion14</td>
<td></td>
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<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td>Final Exam</td>
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</table>
Student Agreement

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Ethical Hacking Spring 2015—Nick Rahimi

I have received and read the syllabus for the course, and I agree to enroll in the course under those terms. I understand that the skills I learn here can be dangerous if used improperly, and I agree to use them only in ethical ways. I understand that unauthorized hacking is a crime and could get me into serious legal trouble which neither my instructor nor the department will be able to save me from.

Name:

Dawg Tag:

Semester:

Date:

Contact phone:
SAFETY AWARENESS FACTS AND EDUCATION

Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the appropriate resources here: http://safe.siu.edu

SALUKI CARES

The purpose of Saluki Cares is to develop, facilitate and coordinate a university-wide program of care and support for students in any type of distress—physical, emotional, financial, or personal. By working closely with faculty, staff, students and their families, SIU will continue to display a culture of care and demonstrate to our students and their families that they are an important part of the community. For Information on Saluki Cares: (618) 453-5714, or situcares@siu.edu, http://salukicares.siu.edu/index.html

EMERGENCY PROCEDURES

Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. We ask that you become familiar with the SIU Emergency Response Plan and Building Emergency Response Team (BERT) programs. Please reference the Building Emergency Response Protocols for Syllabus attachments on the following pages. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency.

INCLUSIVE EXCELLENCE

SIU contains people from all walks of life, from many different cultures and sub-cultures, and representing all strata of society, nationalities, ethnicities, lifestyles, and affiliations. Learning from and working with people who differ is an important part of education as well an essential preparation for any career. For more information please visit: http://www.inclusiveexcellence.siu.edu/

LEARNING AND SUPPORT SERVICES

Help is within reach. Learning support services offers free tutoring on campus and math labs. To find more information please visit the Center for Learning and Support Services website:
Tutoring: http://tutoring.siu.edu/
Math Labs: http://tutoring.siu.edu/math_tutoring/index.html

WRITING CENTER

The Writing Center offers free tutoring services to all SIU students and faculty. To find a Center or Schedule an appointment please visit http://write.siu.edu/

AFFIRMATIVE ACTION & EQUAL OPPORTUNITY

Our office's main focus is to ensure that the university complies with federal and state equity policies and handles reporting and investigating of discrimination cases. For more information visit: http://diversity.siu.edu/

Additional Resources Available:

SALUKINET: https://salukinet.siu.edu/cp/home/displaylogin
ADVISEMENT: http://advisement.siu.edu/
SIU ONLINE: http://online.siu.edu/

Spring 2015 R.O’Rourke

IMPORTANT DATES *

Semester Class Begins.....................................................01/20/2015
Last day to add a class (without instructor permission): ………01/25/2015
Last day to withdraw completely and receive a 100% refund: ………02/01/2015
Last day to drop a course using SalukiNet:................................04/05/2015
Last day to file diploma application (for name to appear in Commencement program): ………………………………………….03/13/2015

Final examinations: ..........................................................5/11–5/15/2015

Note: For outreach, internet, and short course drop/add dates, visit Registrar’s Academic webpage http://registrar.siu.edu/

SPRING SEMESTER HOLIDAYS

Martin Luther King, Jr.’s Birthday 01/19/2015
Spring Vacation 03/07—03/15/2015

WITHDRAWAL POLICY ~ Undergraduate only

Students who officially register for a session may not withdraw merely by the stopping of attendance. An official withdrawal form needs to be initiated by the student and processed by the University. For the proper procedures to follow when dropping courses and when withdrawing from the University, please visit http://registrar.siu.edu/pdf/ugradcatalog1314.pdf

INCOMPLETE POLICY– Undergraduate only

An INC is assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments. An INC must be changed to a completed grade within one semester following the term in which the course was taken, or graduation, whichever occurs first. Should the student fail to complete the course within the time period designated, that is, by no later than the end of the semester following the term in which the course was taken, or graduation, whichever occurs first, the incomplete will be converted to a grade of F and the grade will be computed in the student's grade point average. For more information please visit: http://registrar.siu.edu/grades/incomplete.html

REPEAT POLICY

An undergraduate student may, for the purpose of raising a grade, enroll in a course for credit no more than two times (two total enrollments) unless otherwise noted in the course description. For students receiving a letter grade of A,B,C,D, or F, the course repetition must occur at Southern Illinois University Carbondale. Only the most recent (last) grade will be calculated in the overall GPA and count toward hours earned. See full policy at http://registrar.siu.edu/pdf/ugradcatalog1314.pdf

GRADUATE POLICIES

Graduate policies often vary from Undergraduate policies. To view the applicable policies for graduate students, please visit http://gradschool.siu.edu/about-us/grad-catalog/index.html

DISABILITY POLICY

Disability Support Services provides the required academic and programmatic support services to students with permanent and temporary disabilities. DSS provides centralized coordination and referral services. To utilize DSS services, students must come to the DSS to open cases. The process involves interviews, reviews of student-supplied documentation, and completion of Disability Accommodation Agreements. http://disabilityservices.siu.edu/

PLAGIARISM CODE


MORRIS LIBRARY HOURS

http://www.lib.siu.edu/about