Course Overview
This course is designed to provide students with a solid foundation in network security including a treatment of security issues related to computers and computer networking. The primary emphasis is on developing security policies, security auditing, security models and laws related to security. Prerequisite: CS 2420, ENGL 3100 or NTM 3250 and CS 3705.

Class Structure
Class will consist of online discussions, lab exercises, a term project, and exams. Questions, comments and thought provoking inquiries are strongly encouraged. There is a lot of reading and lab work for this class and students are expected to read the related course material.

Lab Exercises (Assignments)
Lab exercises are worth a significant portion of a student’s grade. These labs are designed to reinforce the principles of secure computing by giving students hands-on experience into how computer security works. Lab exercises are performed in a protected virtual environment and most require a written report to be submitted. Details of the report format are provided in the lab exercise instructions.

I will allow up to two late assignments for half credit.

Term Project
Students are required to complete a term project. The term project consists of a more in-depth lab exercise that generally requires significant time to complete. A detailed report of the lab exercise including observations, lessons learned, applicable code, screenshots, etc. is required for the term project.

Exams
There will be two exams for this class, one midterm and one final. Both are comprehensive. Exams will be online, probably in chitester.

Exams can only be taken on the days listed unless arrangements are made prior to the date opened.

Ethical Conduct
Students are expected to maintain academic ethics and integrity in regards to performing their own work. Any form of academic dishonesty (cheating, plagiarism, etc.) will not be tolerated. Academic dishonesty is prohibited as detailed in the WSU University Catalog and Student Handbook. Proof of academic dishonesty will result in a failing grade for the course and notification of University Authorities.

Required Text:

Students needing special accommodations
Please notify the Disability Resource Center at the WSU Ogden campus at (801-626-6413) or at SLCC’s DRC at (801-957-4659) immediately of any special needs or disabilities you may have.

Grading
Standard grading will apply:
A: 94-100  
A-: 90-93  
B+: 87-89  
B: 84-86  
B-: 80-83  
C+: 77-79  
C: 74-76  
C-: 70-73  
D+: 67-69  
D: 64-66  
D-: 60-63  
E: 59 or below.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Exercises</td>
<td>40%</td>
</tr>
<tr>
<td>Term Project</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td>20%</td>
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The WSU Student Code explains:

a. Cheating, which includes but is not limited to:
   i) Copying from another student's test;
   ii) Using materials during a test not authorized by the person giving the test;
   iii) Collaborating with any other person during a test without authorization;
   iv) Knowingly obtaining, using, buying, selling, transporting, or soliciting in whole or in part the contents of any test without authorization of the appropriate University official;
   v) Bribing any other person to obtain any test;
   vi) Soliciting or receiving unauthorized information about any test;
   vii) Substituting for another student or permitting any other person to substitute for oneself to take a test.

b. Plagiarism, which is the unacknowledged (uncited) use of any other person’s or group’s ideas or work. This includes purchased or borrowed papers;

c. Collusion, which is the unauthorized collaboration with another person in preparing work offered for credit;

d. Falsification, which is the intentional and unauthorized altering or inventing of any information or citation in an academic exercise, activity, or record-keeping process;

e. Giving, selling, or receiving unauthorized course or test information;

f. Using any unauthorized resource or aid in the preparation or completion of any course work, exercise, or activity;

g. Infringing on the copyright law of the United States, which prohibits the making of reproductions of copyrighted material except under certain specified conditions.

Schedule

This is the tentative schedule complete with topic covered and required reading. This schedule is subject to change and any changes will be promptly notified.

<table>
<thead>
<tr>
<th>Week of</th>
<th>Topic</th>
<th>Chap Reading</th>
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<tbody>
<tr>
<td>Jan. 7</td>
<td>Privilege escalation and SetUID</td>
<td>Ch 1, 4, 11</td>
</tr>
<tr>
<td>Jan. 14</td>
<td>Metasploit with Armitage</td>
<td>Ch 1, 6</td>
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<tr>
<td>Jan. 21</td>
<td>Metasploit shells and Remote code exploits</td>
<td>Ch 1, 6</td>
</tr>
<tr>
<td>Jan. 28</td>
<td>Metasploit with OpenVAS</td>
<td>Ch 1, 6</td>
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<tr>
<td>Feb. 4</td>
<td>Buffer Overflows Vulnerabilities</td>
<td>Ch 10</td>
</tr>
<tr>
<td>Feb. 11</td>
<td>SQL Injection and Database Security</td>
<td>Ch 5</td>
</tr>
<tr>
<td>Feb. 18</td>
<td>Cryptography with Secret-Key Encryption</td>
<td>Ch 2, 20</td>
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<tr>
<td>Feb. 25</td>
<td>Review and Midterm Exam</td>
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<tr>
<td>Mar. 4</td>
<td>Spring break</td>
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<tr>
<td>Mar. 11</td>
<td>Cryptography with One-Way Hashes</td>
<td>Ch 2, 21</td>
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<tr>
<td>Mar. 18</td>
<td>Cryptography with Public-Key Encryption</td>
<td>Ch 2, 21, 23</td>
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<tr>
<td>Mar. 25</td>
<td>Cryptography with Public-Key Encryption</td>
<td>Ch 2, 21, 23</td>
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<tr>
<td>Apr. 1</td>
<td>TCP/IP Attacks, Local and Remote</td>
<td>Ch 7, 12</td>
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<tr>
<td>Apr. 8</td>
<td>Firewalls, IDS and other protections</td>
<td>Ch 8, 9, 12</td>
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<tr>
<td>Apr. 15</td>
<td>Review and Final Exam</td>
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Assignment Due Dates:

- Assignment 1: January 20
- Assignment 2: January 27
- Assignment 3: February 3
- Assignment 4: February 10
- Assignment 5: February 17
- Assignment 6: February 24
- Assignment 7: March 3
- Assignment 8: March 17
- Assignment 9: March 24
- Assignment 10: March 31
- Term Project: April 14

These dates are subject to change. Any changes will be promptly notified.

Academic Dishonesty

CS Department policy dictates that any verifiable evidence of student academic cheating, as defined and determined by the instructor, will result in: 1) an automatic failing grade for the class and 2) a report to the Dean of Students that will include the student’s name and a description of the student’s dishonest conduct.

Term Project Choices

- DNS Pharming Attack
- Packet Sniffing and Spoofing
- Cross-Site Scripting Attack
- Chroot Sandbox Vulnerability
- Virtual Private Networking
- SYN Cookies
- Other, with approval