Buy and rent options at Amazon.com: follow this link.
Rental options at Vitalsource.com: follow this link.
In addition, handouts, pdfs, videos and online resources will be provided.

General Course Information

Instructor: Lopamudra Roychoudhuri  
E-mail: lroychoudhuri@angelo.edu
Office: MCS 205E  
Campus Phone: (325) 486-5448
Class Times: MWF 1:00-1:50 pm
Classroom: MCS 114
Course Web Site: Blackboard
Office Hours: MWF 3:00-5:00 pm, TR 4:00-6:00 pm

Prerequisite:
None.

Course Objectives:
This seminar-style course will introduce cybersecurity practices of penetration testing to the students. In virtual machine environments, the students will freely but safely exploit system vulnerabilities by deploying offensive security principles and determine how to avoid such problems. This course will provide students an effective active learning environment that will help students learn by doing and master security techniques. Experiments using Kali Linux, an established offensive security platform, Ubuntu, a popular Linux distribution, as well as Wireshark, a widely used packet analyzer tool, will be used to give students the essential hands-on experience.

Student Learning Goals:
Students who successfully complete this course will be able to:

1. Describe the importance of ethical hacking,  
2. Gather information about an organization using tools available in the World Wide Web,  
3. Scan target systems for open ports and operating system vulnerabilities,  
4. Identify vulnerabilities of web applications,  
5. Penetration-test a target system using Metasploit, an industry-standard tool,  
6. Create Denial-of-Service attacks,  
7. Explore the horizons of the ever-expanding technology by delivering a team project on a "real world" offensive security topic beyond what is covered in class.
Grading:

<table>
<thead>
<tr>
<th>Grading Criteria</th>
<th>Dates</th>
<th>Weights</th>
<th>Goals Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>Weekly/biweekly</td>
<td>30%</td>
<td>1 thru 4</td>
</tr>
<tr>
<td>Project</td>
<td>Final presentation &amp; reports: Wed 5/6/20 1:00-3:00</td>
<td>35%</td>
<td>4 thru 5</td>
</tr>
<tr>
<td>Exam 1</td>
<td>2/10/20</td>
<td>15%</td>
<td>1 thru 2</td>
</tr>
<tr>
<td>Exam 2</td>
<td>4/6/20</td>
<td>20%</td>
<td>1 thru 3</td>
</tr>
</tbody>
</table>

GRADE | PERCENT
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A | 90 - 100
B | 80 - 89
C | 70 - 79
D | 60 - 69
F | 0 - 59

Week by week tentative schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/13, 1/15, 1/17</td>
<td>Module 1: Introduction and Review – Security, Networking, Linux</td>
</tr>
<tr>
<td>2</td>
<td>1/22, 1/24</td>
<td>Module 1: Review cont., Intro to Python</td>
</tr>
<tr>
<td>3</td>
<td>1/27, 1/29, 1/31</td>
<td>Module 2: Social Engineering and Reconnaissance</td>
</tr>
<tr>
<td>4</td>
<td>2/3, 2/5, 2/7</td>
<td>Module 2 cont.</td>
</tr>
<tr>
<td>5</td>
<td>2/10, 2/12, 2/14</td>
<td>Exam 1 on 2/10; Module 3: Scanning</td>
</tr>
<tr>
<td>6</td>
<td>2/17, 2/19, 2/21</td>
<td>Module 3 cont.</td>
</tr>
<tr>
<td>7</td>
<td>2/24, 2/26, 2/28</td>
<td>Module 3 cont.; Project proposal due on 2/24</td>
</tr>
<tr>
<td>8</td>
<td>3/2, 3/4, 3/6</td>
<td>Module 4: Penetration Testing with Metasploit</td>
</tr>
<tr>
<td></td>
<td>3/9 - 3/13</td>
<td>Spring Break</td>
</tr>
<tr>
<td>11</td>
<td>3/30, 4/1, 4/3</td>
<td>Module 5 cont.; Interim project presentation and reports due on 3/30</td>
</tr>
<tr>
<td>12</td>
<td>4/6, 4/8, 4/10</td>
<td>Exam 2 on 4/6; Module 5 cont.</td>
</tr>
<tr>
<td>13</td>
<td>4/13, 4/15, 4/17</td>
<td>Module 6: Denial-of-Service</td>
</tr>
<tr>
<td>14</td>
<td>4/20, 4/22, 4/24</td>
<td>Module 7: Malware Analysis</td>
</tr>
<tr>
<td>15</td>
<td>4/27, 4/29, 5/1</td>
<td>Module 7 cont.</td>
</tr>
<tr>
<td>16</td>
<td>5/6/20 (Wednesday)</td>
<td>Final Project Presentation 1:00-3:00</td>
</tr>
</tbody>
</table>

Class Policies:

TEAMS
You will form teams of 2 or 3. The teams will be chosen on the first day of class and will be maintained till the end of semester.

ASSIGNMENTS
- There will be many kinds of assignments that you will complete in and out of class.
- In-class assignments: these fall in two categories:
• Class work Assignments: We will discuss topics in class and work on assignments. You will be able to collaborate with your fellow students in order to complete these. Assignments that could not be completed in class will be taken out-of-class and turned in. The grade from these assignments will constitute 20% of the total Assignment grade.

• In-class quizzes: We will also have in-class quizzes that may be team-based or individual. The grade from the quizzes will constitute 10% of the total Assignment grade.

• Out-of-class assignments: these fall in two categories:
  • Graded homework assignments - the purpose of the homework assignments is to give you individual out-of-class practice on the topics that you are learning, and to explore some ideas more deeply. The grade from the homework assignments will constitute 70% of the total Assignment grade.
  • Videos and/or readings – You will complete watching videos and/or some reading from the textbook or other sources prior to every class session. These will be announced beforehand. This is to ensure that you are familiar with the topics that will be discussed in the class and may be validated by the in-class quizzes.

• All assignments, unless otherwise specified, must be submitted to Blackboard containing your name, course name, the title of the assignment and the due date.

• No late assignment will be accepted. No e-mail or in-person submission is accepted. There are no exceptions to this rule.

• All homework assignments should be the work product of each individual. Cheating occurs when a student either submits work for a grade that is not entirely due to his/her own effort or allows others to use her/his work. Cheating occurs when a student submits work product that is copied from another student. Cheating on an assignment or exam will result in a failing grade for the course. No student shall look towards the work of any other student during exams as it shall be construed as cheating.

• Academic Honor Code: Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is available on the web at Academic Honor Code in Student Handbook. The College of Science and Engineering adheres to the university's Statement of Academic Integrity. You should familiarize yourself with it. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

TEAM PROJECT
Each team will select a topic that will allow the group to study some aspect of the “real world” networking in detail beyond what is covered in class. The outcome of the project will be a project report as well as a class presentation. You will submit your own report that clearly shows your contributions to the project. Each team will prepare a 15-20-minute presentation and answer related questions.
EXAMS
All students must take the exams at the scheduled times. There are no makeup exams. Only exception will be student absence for observance of religious holy day (see below).

ATTENDANCE
Attendance is mandatory (no excused absences) and roll will be taken.

GRADEBOOKS
During the course of the semester, you are expected to monitor your performance on assignments and exams by accessing your grades online. It is your responsibility to: (1) insure that correct entries have been made into the gradebook, and (2) be aware of your performance in the class. Grade percentages are shown on this syllabus, so you can compute your own grade standing as the semester progresses.

E-MAIL
You are required to obtain an e-mail account. If you have any question about the course or need assistance, please contact me in person or by telephone during office hours, or by e-mail at any time.

LAB POLICY
No food or drinks are allowed in the lab.

General Policy Statements
Academic Accommodations for Students with Disabilities:
ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student's responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the Student Disability Services website. The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu
Houston Harte University Center, Room 112
Incomplete Grade Policy
It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

Student Absence for Observance of Religious Holy Day
A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day for more information.

Title IX at Angelo State University
The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.

Students are encouraged to report any incidents of sexual misconduct directly to ASU’s Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Michelle Boone, J.D.
Director of Title IX Compliance/Title IX Coordinator
Mayer Administration Building, Room 210
325-942-2022
michelle.boone@angelo.edu
You may also file a report online 24/7 at www.angelo.edu/incident-form.

If you are wishing to speak to someone about an incident in confidence you may contact the University Health Clinic and Counseling Center at 325-942-2173 or the ASU Crisis Helpline at 325-486-6345. For more information about Title IX in general you may visit www.angelo.edu/title-ix.

Modifications to the syllabus
The instructor and the university reserve the right to modify or change the syllabus (schedule, course requirements, grading policy, etc.) as the curriculum and/or program require(s).

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iv https://www.angelo.edu/student-handbook/

v https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php

vi https://www.angelo.edu/services/disability-services/

vii https://www.angelo.edu/content/files/14197-op-1011-grading-procedures

viii https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of