Penetration Testing
CSCI 5362
Fall 2023

INSTRUCTOR: Dr. Jeffrey Zheng
Department: Computer Science
Office: STEM 312
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Phone: 936 468 2508

LEARNING MANAGEMENT SYSTEM:
Communication for the course will be conducted through Microsoft Teams. Teams is an application available to you for free as an SFA student. All other documentation, such as course materials, will be facilitated through Brightspace.

DROP-IN & PROBLEM SOLVING HOURS:
STEM 312: Monday/Tuesday/Thursday 9 am-10 am, Monday/Wednesday 1 pm-2 pm
Other times available by appointment: email me at least 24 hours in advance. Zoom meeting available upon request.

CLASS INFO:
Credit Hours: 3
Meeting Time: TTh 11:00 am - 12:15 pm
Location: STEM 316

PREREQUISITES:
Admittance into the graduate program Cyber Security.

CATALOG DESCRIPTION:
Examination of the techniques and technologies for the penetration of networks, detection of attacks, and prevention of attacks. Addresses the techniques, technologies, and methodologies used by cyber intruders (hackers) to select a target and launch an attack. Assesses the various countermeasures to keep the system out of the “sights” of the hacker and to keep the hacker out of the perimeter of the target network. Explores the laws and the legal considerations in prosecuting computer crime.

STUDENT LEARNING OUTCOMES:
Upon successful completion of the course, students should be able to:
1. Explain how attackers map organizations, and be able to describe common port scanning techniques
2. Identify some of the tools used to perform enumeration
3. Explain the significance of wireless security
4. List the issues facing Web servers
5. Describe the characteristics of malware, and be able to explain an understanding of the ways of
6. Describe the process of DoS attacks
7. Describe the benefits of automated assessment tools, and be able to list the components of incident response
8. List the detective methods of defense

OFFICIAL COURSE SYLLABUS:
For additional detail including course description, purpose of course, student learning objectives, credit hour statement, and content, see the official course syllabus here:
https://www.sfasu.edu/docs/computer-science/graduate-course-CSCI5362.pdf

REQUIRED TEXT:

REQUIRED SOFTWARE AND HARDWARE:
VirtualBox, Kali Linux, Metasploitable 2
Note: They are all open-source so you can Google and download them to use in class.

GRADING POLICY:
This course uses a point-based formula to calculate students’ end-of-course letter grades. There are 1000 points for assignments, exams, and the final exam. The end-of-course letter grades are determined based on the total number of points students earned using the following formula:
<table>
<thead>
<tr>
<th>Points Earned</th>
<th>Letter Grade</th>
</tr>
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<tbody>
<tr>
<td>900 - 1000</td>
<td>A</td>
</tr>
<tr>
<td>800 - 899</td>
<td>B</td>
</tr>
<tr>
<td>700 - 799</td>
<td>C</td>
</tr>
<tr>
<td>600 - 699</td>
<td>D</td>
</tr>
<tr>
<td>Below 600</td>
<td>F</td>
</tr>
<tr>
<td>No-show in the final exam without a valid excuse</td>
<td>F</td>
</tr>
</tbody>
</table>

**EXAMS:**

There is a midterm exam in addition to the final exam in this course. The tentative schedules of the exams are:
- Midterm (250 points): Thursday, October 19
- Final exam (250 points): Tuesday, December 12, 10:30 am - 12:30 pm. Final exam schedule: [https://www.sfasu.edu/registrar/registration-information/final-exam-schedule](https://www.sfasu.edu/registrar/registration-information/final-exam-schedule)

NOTE: There are no exemptions from the final examination and no changes in taking the final examination. Check the final exam time. If the final exam time is a problem, you need to drop this course.

**ASSIGNMENTS:**

Class assignments (labs, assignments, and/or quizzes) will total 500 of the 1000 course points. Some of the assignments may be required to be completed in class. Not all class assignments will be graded. You may not make up in-class assignments.

Assignments must be submitted before the due date to D2L unless instructed by the instructor otherwise. You will be given at least one week for each assignment and no late submission of assignments will be accepted. Do NOT send your assignment to me via email because it will be ignored.

**ATTENDANCE:**

Attendance and constructive class participation are expected. You are allowed to have 5 absences without penalty; after that, each absence will result in a 5-point deduction from your earned points. In the event that you miss a class, please work with your classmates to get any necessary material and review the available notes on Brightspace.

The Dean of Students Office will help to notify faculty of an absence for certain parameters. You can go [HERE](https://www.sfasu.edu/registrar/registration-information/final-exam-schedule) to learn more about this new process and also submit the form.

**ASYNCHRONOUS MINUTES:**

As a full-term course at SFA, this course will require 150 minutes of asynchronous activity that will be disclosed by the instructor. This will include, but not limited to, networking events related to internships.

**PROGRAM LEARNING OUTCOMES:**

Program learning outcomes define the knowledge, skills, and abilities students are expected to demonstrate upon completion of an academic program. These learning outcomes are regularly assessed to determine student learning and to evaluate overall program effectiveness.

- Students majoring in the Department of Computer Science may access program learning outcomes at [http://www.sfasu.edu/academics/colleges/sciences-math/computer-science/about/accreditations](http://www.sfasu.edu/academics/colleges/sciences-math/computer-science/about/accreditations)
Artificial Intelligence Fair-Use Policy: This course assumes that work submitted by students – all process work, drafts, brainstorming artifacts, final works – will be generated by the students themselves, working individually or in groups as directed by class assignment instructions. This policy indicates the following constitute violations of academic honesty: a student has another person/entity do the work of any substantive portion of a graded assignment for them, which includes purchasing work from a company, hiring a person or company to complete an assignment or exam, and/or using generative AI tools (such as ChatGPT).

Software Policy: Disciplinary action will be taken against individuals who perform unauthorized duplication of software or who are involved in the unauthorized use of duplicated software. Such action may make it impossible for you to successfully complete this course.

Computer Laboratory Usage: Students utilizing equipment in university computing laboratories are expected to read and abide by all posted policies for the laboratories. Please note that no children and no pets are permitted in university computing laboratories.

Drop Policy (Univ.): The official university add/drop policy is located at http://www.sfasu.edu/policies/course-add-drop_6.10.pdf. If you have questions concerning registration, add/drop, or the withdrawal process, please refer to the Registrar’s website.

Computer Account Policy: All assignments that require the use of the University Computer must be done under the computer account that is assigned to you in this class. You should NOT do other class assignments in this account, and you should NOT do assignments from this class in other accounts. Failure to abide by the above statements will mean that you will receive a grade of F in this course.

Academic Integrity (4.1)

The Code of Student Conduct and Academic Integrity outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

Withheld Grades Semester Grades Policy (5.5)

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the coursework because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course to compute the grade point average. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

Students with Disabilities
To obtain disability-related accommodations, alternate formats, and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services promptly may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

Student Wellness and Well-Being

SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.

If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

On-campus Resources:
The Dean of Students Office (Rusk Building, 3rd floor lobby)
www.sfasu.edu/deanofstudents
936.468.7249
dos@sfasu.edu

SFA Human Services Counseling Clinic Human Services, Room 202
www.sfasu.edu/humanservices/139.asp
936.468.1041

The Health and Wellness Hub “The Hub”
Location: corner of E. College and Raguet St.
To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:
• Health Services
• Counseling Services
• Student Outreach and Support
• Food Pantry
• Wellness Coaching
• Alcohol and Other Drug Education

www.sfasu.edu/thehub
936.468.4008
thehub@sfasu.edu

Crisis Resources:
• Burke 24-hour crisis line: 1.800.392.8343
• National Suicide Crisis Prevention: 9-8-8
• Suicide Prevention Lifeline: 1.800.273.TALK (8255)
• johCrisis Text Line: Text HELLO to 741-741