



Department of Computer Science

CPTG 335 Cyber Security (4 units) Winter Quarter, 2026

Time and Location

Lecture: 1/5/2026 – 3/19/2026, TR 1:00 P.M. – 2:50 P.M., PSC 147.

Textbook (Required): Georgia Weidman, *Penetration Testing – A Hands-On Introduction to Hacking*, No Starch Press.

Instructor

Dr. Hwang. Office PSC 255. E-mail: ehwang@lasierra.edu. Office hours: Email me anytime to make an appointment or if you have any questions. Appointments can be either in person in my office or virtual on Zoom.

Course Description

Bulletin Course Description: Topics include user security, system security, software security, cryptography, network security, hardware security.

In this course, we will simulate real attacks on a system to assess the risk associated with potential security breaches. We will first find vulnerabilities in a system that could be used by attackers, and then exploit these vulnerabilities to try to gain access to the system and data.

Prerequisite: CPTG 244, 245 & Math 276.

Student Learning Outcomes

The computer science curriculum at La Sierra University provides opportunities to reach various goals under the broad mission statement: “To Seek, To Know, To Serve.” This computer science course introduces students with skills necessary to prevent computer systems being hacked.

Achievement at this introductory level will be specifically demonstrated through the following:

- Students will communicate effectively by completing projects and through class discussions. (SLO 2)

- Students will learn tools for analyzing system vulnerabilities and preventing unauthorized system access. (SLO 3 and 4)

Topics

1. Part I: The Basics
 1. Setting up the client system lab
 2. Using Kali Linux
 3. Scripting
 4. Using Metasploit
2. Part II: Assessments
 5. Information Gathering
 6. Finding Vulnerabilities
 7. Capturing Traffic
3. Part III: Attacks
 8. Exploitation
 9. Password Attacks
 10. Client-Side Exploitation
 11. Social Engineering (if time allows)
 12. Bypassing Antivirus Applications (if time allows)
 13. Post Exploitation (if time allows)

Requirements and Evaluation

This class involves hands-on work on analyzing system vulnerabilities and exploiting the vulnerabilities. Projects will be assigned for each topic covered. Your grade will be based on the successful implementation of all of the assigned projects.

Attendance and Class Participation

Students are expected to be on-time for class and ready to actively engage the material. Proper class preparation, active participation in class, and thoughtful conversation on the topic being discussed are expected. Since so much of what we learn takes place in dialogue with each other, the presence of each student is valued and necessary at every class period. To be excused from a class, you must provide an official note documenting the reason(s) for your absence. It is still your responsibility to catch up on any material that you have missed.

Grading

Topic assignment projects 75%, Class participation 25%.

Grading Scale

After the grades for the above requirements and their percentages have been calculated for each student, the final grades will be based on the following scale:

95 – 100%	A
90 – 94.9%	A-
87 – 89.9%	B+
83 – 86.9%	B
80 – 82.9%	B-
77 – 79.9%	C+
73 – 76.9%	C
70 – 72.9%	C-
67 – 69.9%	D+
60 – 66.9%	D
0 – 59.9%	F

“Incomplete” grades are given only in extremely unusual circumstances. See *La Sierra University Undergraduate Bulletin* for the University’s policy concerning required procedures and course completion.

Additional Information

A. Discrimination and Harassment Policy

Faculty members are committed to supporting students and upholding the University’s Title IX policy. Under Title IX discrimination based upon sex and/or gender is prohibited. This includes any act of sexual misconduct or sexual assault. In addition, our Title IX policy prohibits dating violence, domestic violence, stalking and sexual exploitation.

If you experience an incident of sex or gender based discrimination, sexual assault or sexual misconduct, we encourage you to report it to our Title IX Office.

You may talk to a faculty member, but understand that faculty members MUST report to the Title IX Coordinator what you share.

If you would like to speak with someone who may be able to afford you confidentiality, you may contact our Counseling Services located in the Student Wellness Services facility.

You may also want to visit our Wellness Center. Please know that all services at our Wellness Center are subject to confidentiality.

B. Academic Honesty

Because scholars communicate, consider ideas, and contrast understandings in writing, it is important to be able to rely on each other in an atmosphere of openness, trust, and clarity. The proper use of citations allows colleagues to double-check one’s interpretation of someone else’s work, or to follow-up in greater depth if interested in a particular idea. For this reason, academic honesty is of critical importance. It is important to use quotation marks where needed and to cite the source of all significant ideas, concepts, paraphrases, and quotations.

Because we need to be able to rely on each other's work with confidence, please make sure that you provide proper attribution of all ideas, paraphrases, and quotations inserted into your papers **and programs**. A purposeful or careless breach of academic integrity will result in penalties.

To be sure that you have no misunderstandings about the definitions of academic honesty or academic dishonesty, refer to your La Sierra University Student Handbook. The University has significant penalties for academic dishonesty, so please take this suggestion seriously. La Sierra University's policy and other important information regarding academic honesty can be found at <https://lasierra.edu/academic-integrity/> .

C. Special Assistance:

It is the policy of La Sierra University to accommodate students with disabilities. Any student with a documented disability who requires reasonable accommodations should contact Office of Accessibility Services in Sierra Vista Hall at (951) 785-2452 or <https://lasierra.edu/accessibility-services/>

Important Dates

1/16 (Last day to withdraw with no record on transcript), 2/27 (Last day to withdraw with a "W"), 1/19 (MLK holiday), 2/16 (Presidents' Day).

Resources