

CSEC 700: Security Operations

Course Description

This course provides baseline knowledge of the computer, operating systems, file systems and the basic technological infrastructure that a cybersecurity professional needs to know. Further, an emphasis is given to the coding and command line interface to increase the ability of the student to use these technologies.

Learning Outcomes

- Demonstrate an understanding and ability with the basics of coding required in a cybersecurity environment. Specifically, this entails the use of the bash command line interface. Basics of the operating systems file structure and other basics of how a computer works are also an emphasis of the course.

Course Materials

- *Cybersecurity Ops with bash: Attack, Defend, and Analyze from the Command Line*, 1st Edition. Paul Troncone and Carl Albing, O'Reilly Media. ISBN: 978-1492041313
- *Linux Basics for Hackers: Getting Started with Networking, Scripting, and Security in Kali*, 1st Edition. No Starch Press. ISBN: 1593278551

Assignments

Deliverable	Percentage
Exercises (Nine)	25%
Exam 1	20%
Exam 2	20%
Final Project	25%
Participation and Professionalism*	10%

* To combat instances of freeloading a team assessment will be administered at the end of the class. The assessment must be submitted to receive a participation and professionalism grade.

Courses/Exercises: These will vary in structure and nature. They are focused on providing you with some introductory exposure to some common tools that are used in the cybersecurity field.

Multiple individual exercises will be completed to familiarize the student with the command line interface and the myriad functions that can be initiated from there.

Final Project: Each 3 to 4-person group is required to present one 10-minute presentation to the class regarding a given command that will be assigned to them, its uses and a demonstration of its implementation. Groups will sign up for presentation dates during the first class session, and topics via an online discussion board.

There are two deliverables for this group project:

1. In-class presentation, which consists of the following:
 - a. General overview of the relevant tool / application
 - i. Include examples or scenarios that are readily understandable to the class
 - b. Purpose of the tool / application and its related threats
 - c. Review of how these threats have been overcome
 - d. Weaknesses in the current tool / application
 - e. Next generation technologies/methods/etc. that are being developed to address these threats

2. Technology summary to be posted to the forum
 - a. Key points of the presentation should be summarized into a two-page document that can be posted to the forum
 - b. Post the text directly into a new post below the topic for these summaries
 - c. Additionally, a useful, yet short introductory video should be posted to the forum so as to aid your peers in beginning to use this tool
 - d. Basic walkthrough of basic tool functionality that would be used as a how-to guide for your peers. This will be graded by your peers.

A more detailed rubric for this assignment will be posted on WebCampus.

Class Professionalism & Participation: Students will be evaluated based on their level of professionalism in class and in class-related activities outside of class. Professionalism includes, but is not limited to, arriving to class on time, paying attention during course lectures and guest presentations, etc. Class participation involves participation during lectures, and guest presentations. Here are some additional pointers regarding participation:

If you almost never speak out in class or miss several classes, you will receive a participation grade of 5 or lower. If you rarely say anything inspired, your participation grade will be in the 8-10 range (depending on how "occasionally" and how well prepared you are). "Inspiration" - the path to a "15" participation grade – involves such actions as:

- applying conceptual material from the readings, lectures, or guest presentations
- doing a bit of outside reading and applying it in the discussion
- integrating comments from previous lectures or presentations
- reaching back to something said previously that is pertinent to the discussion at the moment
- taking substantive issue with a classmate's analysis
- pulling together material from several places
- drawing parallels from previous lectures and discussion
- tying in briefly an experience you have had that is relevant to the discussion
- generally demonstrating that you have carefully read and understood the assigned readings and lectures
- not dominating class discussion

Tentative schedule

Week	Topic	Reading	Assignment / Due
1	Course intro overview		
2	Basics of the Operating System	Bash: Chapters 1-2 Linux Chapter 1-2	
3	Basic of Network Management	Bash: Chapters 3-4 Linux Chapter 3 & 14	Exercise 1
4	File Directory	Bash: Chapters 5-6 Linux Chapter 4-5	Exercise 2
5	Process Management	Bash: Chapters 7-8 Linux Chapter 6	Exercise 3
6	OS Variables	Bash: Chapters 9-10 Linux Chapter 7	Exercise 4
7	Scripting	Bash: Chapters 11-12 Linux Chapter 8 & 17	Exercise 5
8	Midterm		Midterm
9	File Structures	Bash: Chapters 13-14 Linux Chapter 9-10	
10	Logs	Bash: Chapters 15-16 Linux Chapter 11	Exercise 6
11	System Services	Bash: Chapters 17-18 Linux Chapter 12	Exercise 7
12	Kernels	Bash: Chapters 19-20 Linux Chapter 13 & 15	Exercise 8
13	Automation	Bash: Chapters 21-22 Linux Chapter 16	Exercise 9
14	Group presentations and Review	Bash: Chapters 23-24 Linux Chapter 12	Group project
Final	Final 8:10-10:10pm		Final
Bash = Cybersecurity Ops with Bash Linux = Linux Basics for Hackers			

Class Conduct and Related Policies:

Grading of Individual versus Group Work: Team members will receive a collective grade for their team deliverables (i.e., if the team earns an A on one of the components of the business plan then each of the team members receives that grade on this deliverable in the grading spread sheet). If a team member is found to be shirking their responsibilities then steps will be taken to change their behavior and, if that fails, then they will be graded separately for the team deliverables. A team assessment will be administered at semesters end and grades will be adjusted accordingly.

Late Assignments: Late assignments will be allowed only in cases of unavoidable personal or family emergencies and the student must notify me as soon as possible. In all other cases there will be a significant reduction in points for late assignments.

Late or Absent from Class: Though I will not literally take a “roll” each day, I will generally monitor attendance and timeliness for class and this will be factored into the participation score.

Grade Appeals: If you believe there was a mistake made in the grading of one of your assignments please notify me promptly and I will determine whether a review of the assignment is warranted.

University Policies

Academic Misconduct

Academic integrity is a legitimate concern for every member of the University community. We all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility, and professionalism. By choosing to join the UNLV community, students accept the expectations of the Student Academic Misconduct Policy, and are encouraged to always take the ethical path whenever faced with choices. Students enrolling at UNLV assume the obligation to conduct themselves in a manner compatible with UNLV’s educational mission. An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another person, from the Internet or any other source without proper citation of the source(s). See the [Student Conduct Code](https://www.unlv.edu/studentconduct/student-conduct), <https://www.unlv.edu/studentconduct/student-conduct>.

Auditing a Course

Auditing a course allows a student to continue attending the lectures and/or laboratories and discussion sessions associated with the course, but the student will not earn a grade for any component of the course. Students who audit a course receive the same educational experience as students taking the course for a grade, but will be excused from exams, assessments, and other evaluative measures that serve the primary purpose of assigning a grade.

Classroom Conduct

Students have a responsibility to conduct themselves in class and in the libraries in ways that do not interfere with the rights of other students to learn, or of instructors to teach. Use of devices such as cellular phones and pagers, or other potentially disruptive activities are only permitted with the prior explicit consent of the instructor. Students are specifically prohibited to record classes without instructor authorization, including online/remote classes (either audio only, or video and audio). The instructor may rescind permission at any time during the class. If a student does not comply with established requirements or obstructs the functioning of the class, the instructor may initiate an administrative withdrawal of the student from the course. Since the COVID-19 pandemic forced some instruction to be delivered remotely starting in Spring 2020, numerous students have asked instructors to record their synchronous classes, so that they can access them at their convenience. Instructors who agree to record their classes (audio only, or video and audio) should inform students in advance. Recorded lectures may not be broadly released to anyone, but made available exclusively to those students enrolled in the class during the particular academic term. Recorded lectures must be stored securely, and are subject to the Nevada System of Higher Education’s Records Retention Policy, meaning that the recordings can only be deleted 120 days after the end of class (i.e., after grades are posted). Once this requirement is met, the recordings should be deleted. Class recordings are protected from disclosure, as they are deemed part of an educational record under the Family Educational Rights and Privacy Act (FERPA).

Copyright

The University requires all members of the University Community to familiarize themselves with, and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The University will neither protect nor defend you, nor assume any responsibility for student or employee violations of fair use laws. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional [copyright policy information](https://www.unlv.edu/provost/copyright) is available at <https://www.unlv.edu/provost/copyright>.

Disability Resource Center (DRC)

The [UNLV Disability Resource Center](https://www.unlv.edu/drc) (Student Services Complex, SSC-A, Room 143, <https://www.unlv.edu/drc>, telephone 702-895-0866) provides resources for students with disabilities. Students who believe that they may need academic accommodations due to a permanent disability, temporary or permanent medical need, or academic support due to pregnancy are encouraged to contact the DRC as early as possible in the academic term. A Disabilities Specialist will discuss what options may be available to you. Students who are already registered with the DRC should request their accommodations online each semester, and make an appointment to discuss their accommodations with their instructors.

Final Examinations

The University requires that final exams given at the end of a course occur on the date and at the time specified in the Final Exam schedule. The Final Exam schedule is typically available at the start of the semester, and the classroom locations are available approximately one month before the end of the semester. See the [Final Exam Schedule](https://www.unlv.edu/registrar/calendars), <https://www.unlv.edu/registrar/calendars>.

Identity Verification in Online Courses

All UNLV students must use their Campus-issued ACE ID and password to log in to WebCampus-Canvas. UNLV students enrolled in online or hybrid courses are expected to read and adhere to the [Student Academic Misconduct Policy](https://www.unlv.edu/studentconduct/misconduct/policy), <https://www.unlv.edu/studentconduct/misconduct/policy>, which states that “acting or attempting to act as a substitute for another, or using or attempting to use a substitute, in any academic evaluation or assignment” is a form of academic misconduct. Intentionally sharing ACE login credentials with another person may be considered an attempt to use a substitute, and could result in investigation and sanctions, as outlined in the Student Academic Misconduct Policy.

UNLV students enrolled in online courses are also expected to read and adhere to the [Acceptable Use of Computing and Information Technology Resources Policy](https://www.it.unlv.edu/policies/acceptable-use-computing-and-information-technology-resources-policy), <https://www.it.unlv.edu/policies/acceptable-use-computing-and-information-technology-resources-policy>, which prohibits sharing university accounts with other persons without authorization.

To the greatest extent possible, all graded assignments and assessments in UNLV online courses should be hosted in WebCampus-Canvas or another UNLV-managed platform that requires ACE login credentials for access.

Incomplete Grades

The grade of “I” (Incomplete) may be granted when a student has satisfactorily completed three-fourths of course work for that semester/session, but cannot complete the last part of the course for reason(s) beyond the student’s control and acceptable to the instructor, and the instructor believes that the student can finish the course without repeating it. For undergraduate courses, the incomplete work must be made up before the end of the following regular semester. Graduate students receiving “I” grades in 500-, 600-, or 700-level courses have up to one calendar year to complete the work, at the discretion of the instructor. If course requirements are not completed within the period indicated, a grade of “F” will be recorded, and the

student's GPA will be adjusted accordingly. Students who are fulfilling an Incomplete grade do not register for the course, but make individual arrangements with the instructor who assigned the "I" grade.

Library Resources

Librarians are available to consult with students on research needs, including developing research topics, finding information, and evaluating sources. To make an appointment with a subject expert for this class, please visit the [Libraries' Research Consultation](https://guides.library.unlv.edu/appointments/librarian) website, <https://guides.library.unlv.edu/appointments/librarian>. You can also [ask the library staff](https://ask.library.unlv.edu/) questions via chat and text message at <https://ask.library.unlv.edu/>.

Missed Classwork

Any student missing class, quizzes, examinations, or any other class or laboratory work because of observance of religious holidays will be given an opportunity during that semester to make up the missed work. The make-up opportunity will apply to the religious holiday absence only. It is the responsibility of the student to notify the instructor within the first 14 calendar days of the course for Fall and Spring courses (except for modular courses), or within the first 7 calendar days of the course for Summer and modular courses, of their intention to participate in religious holidays which do not fall on state holidays or periods of class recess. For additional information, please visit the Missed Classwork policy, under Registration Policies, on the [Academic Policies](https://catalog.unlv.edu/content.php?catoid=32&navoid=8271&hl=) webpage, <https://catalog.unlv.edu/content.php?catoid=32&navoid=8271&hl=>.

In accordance with the policy approved by the Faculty Senate regarding missed class time and assignments, students who represent UNLV in any official extracurricular activity will also have the opportunity to make up assignments, provided that the student submits official written notification to the instructor no less than one week prior to the missed class(es).

The spirit and intent of the policy for missed classwork is to offer fair and equitable assessment opportunities to all students, including those representing the University in extracurricular activities. Instructors should consider, for example, that in courses which offer a "Drop one" option for the lowest assignment, quiz, or exam, assigning the student a grade of zero for an excused absence for extracurricular activity is both contrary to the intent of the Faculty Senate's policy, and an infringement on the student's right to complete all work for the course.

This policy will not apply in the event that completing the assignment or administering the examination at an alternate time would impose an undue hardship on the instructor or the University that could be reasonably avoided. There should be a good faith effort by both the instructor and the student to agree to a reasonable resolution. When disagreements regarding this policy arise, decisions can be appealed to the Department Chair/School Director, College/School Dean, and/or the Faculty Senate Academic Standards Committee.

For purposes of definition, extracurricular activities may include, but are not limited to academic recruitment activities, competitive intercollegiate athletics, fine arts activities, liberal arts competitions, science and engineering competitions, and any other event or activity sanctioned by a College/School Dean, and/or by the Executive Vice President and Provost.

Rebelmail

Rebelmail is UNLV's official email system for students and by University policy, instructors and staff should only send emails to students' Rebelmail accounts. Rebelmail is one of the primary ways in which students receive official University communications, information about deadlines, major Campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the University. Sending emails within WebCampus-Canvas is also acceptable.

Tutoring and Coaching

The Academic Success Center (ASC), at the Claude I. Howard Building, provides tutoring, academic success coaching, and other academic assistance for all UNLV undergraduate students. For information regarding tutoring subjects, tutoring times, and other ASC programs and services, please visit the [ASC website](https://www.unlv.edu/asc), <https://www.unlv.edu/asc>, or call 702-895-3177. The ASC is located across from the Student Services Complex (SSC). Academic success coaching is located on the second floor of SSC A, Room 254. Drop-in tutoring is located on the second floor of the Lied Library, and on the second floor of the College of Engineering building (TBE A 207).

UNLV Writing Center

One-on-one or small group assistance with writing is available free of charge to UNLV students at the [Writing Center](https://writingcenter.unlv.edu/), <https://writingcenter.unlv.edu/>, located in the Central Desert Complex, Building 3, Room 301 (CDC 3-301). Walk-in consultations are sometimes available, but students with appointments receive priority assistance. Students may make appointments in person or by calling the Center, telephone 702-895-3908. Students are requested to bring to their appointments their Rebel ID Card, a copy of the instructions for their assignment, and two copies of any writing they have completed on their assignment. *Optional statement for inclusion in syllabi.*

Diversity Statement

As an institution of higher learning, UNLV represents a rich diversity of human beings among its faculty, staff, and students, and is committed to aspiring to maintain a Campus environment that values that diversity. Accordingly, the University supports understanding and appreciation of all members of its community, regardless of race, sex, age, color, national origin, ethnicity, creed, religion, disability, sexual orientation, gender, gender identity, marital status, pregnancy, genetic information, veteran status, or political affiliation. Please see [University Statements and Compliance](https://www.unlv.edu/about/statements-compliance), <https://www.unlv.edu/about/statements-compliance>.

A successful learning experience requires mutual respect and trust between the students and the instructor. Accordingly, the instructor asks that students be willing to listen to one another's points of view, acknowledging that there may be disagreements, keep discussion and comments on topic, and use first person, positive language when expressing their perspectives.