Date of last update: 6/6/2020
changes to schedule dates

Network Security

CIS 56 61Z (CRN: **12390**) – Online Course Summer 2020

Office hours: via Internet "chat room", and via e-mail (see below for details)

COURSE DESCRIPTION

This is an "asynchronous" online course in which you will be given 10 laboratory assignments and quizzes to complete over a very short span of time. **You may work more quickly than the schedule that is specified for this course, but will not be allowed to work more slowly.** You will have two Labs and two Quizzes to complete each week, and no credit will be given for late work. Completion of the curriculum will provide a broad-based introduction to, and hands-on experience with, network and computing security. Security topics include access control, cryptography, policies, physical, network, application, data defenses, auditing and security protocols. Also, course can help prepare students to pass the CompTIA Security+ Certification exam.

PREREQUISITE SKILLS

Advisory: Computer Information Systems 108.

INSTRUCTOR INFORMATION:

Instructor: Leonard (Len) Fisk

Office Hours:

via the CIS 56 "Big Blue Button" Conference tool on the class Canvas page: from 4:00 to 5:00 every Tuesday and Thursday from 6/30/2020 through 8/09/2020

via e-mail: I can be reached virtually any time via e-mail (see below for address).

E-mail address: **mailto:fisklen@fhda.edu**

Website: I will post up-to-date information regarding this course at the Canvas page for this course. Various other links may be added at this class site, and assignments and tests will be done at this location as well. It will be the center point for communications about the course.

ATTENDANCE POLICY

Drop Policy: By **midnight**, **Friday of THE SECOND WEEK OF THE COURSE (7/10/2020)** you must have purchased the text and the lab access and have registered on the Jones and Bartlett Virtual Lab site that supports the class. By that same date, you will have completed the "Student Contract" quiz, which indicate that you have read and understood the major points in the class syllabus. Failure to do so will indicate that you are not committed to taking the course. **By midnight on Friday of the second week (7/10/2020), you will also have completed and turned in (to Canvas) the Unit 01 Lab assignment posted on the website** (we will ignore the "challenge" assignments). **Failure to do so may result in a DROP.** You will have a 2 ½ day reprieve on handing in Labs and will receive a points penalty for handing it in during 2 ½ day period following the due date: that means the "deadline" time beyond which you cannot hand in Lab 1 will be at 11:59 AM (noon) on 7/13. The "due" time is midnight on July 10. No Lab will receive credit if handed in after the "deadline" date.

Students who wish to drop this class must follow the De Anza College drop procedures. The Drop calendar deadlines can be found at https://www.deanza.edu/calendar. Do not assume you will be automatically dropped from this course. If you intend to drop the course, you must drop yourself!

OBJECTIVES

Upon completion of this course, you will be able to use a personal computer and understand the following personal computer objectives. By the close of the course, the student will have/be able to

A. Explore network security issues
B. Investigate access control and identity management
C. Utilize cryptography
D. Investigate policies, procedures, and awareness
E. Identify physical security
F. Explore perimeter defenses
G. Explore network defenses
H. Explore host defenses
I. Identify application defenses
J. Identify data defenses
K. Explore security assessments and audits

STUDENT LEARNING OUTCOMES FOR THIS COURSE:

Determine methods to protect networks against security vulnerabilities.

REQUIRED COURSE MATERIALS

Textbook: Fundamentals of Information Systems Security, Third Edition, with special virtual lab access, by David Kim and Michael Solomon.

Purchasing text and lab materials: You can purchase access to the virtual labs required for the course either online or in person at the De Anza bookstore. If you would prefer a hard-copy version of the textbook, the bookstore will have a number of copies for purchase. Please note that access to the virtual lab is unique for each person and cannot be shared: i.e., the code you purchase will belong to you and to you alone.

To buy the textbook and/or Lab Access: The bookstore will sell you a packet with either:

e-book text plus lab access:
Fundamentals Of Information Systems Security 3rd Ed. with Lab Access
ISBN# **978-1-284-15404-7,** or

Hard copy text plus lab access:
Fundamentals Of Information Systems Security 3rd Ed. with Lab Access
ISBN# **978-1-284-15411-5**, or

Lab Access alone (No book)**:**
ISBN# **978-1-284-16314-8.**

If you order and receive one of the ISBNs shown here, the packages will provide you with the access code you need for individual access to the Jones & Bartlett virtual lab site via our Canvas class page. Other ISBNs will not permit access to the labs via the Canvas class website. Lab access will be essential to the course, as will a copy of the textbook.

To redeem your access code to the JBL Virtual Security Cloud Lab, do the following:

1. Go to the **Canvas** page for this course.
2. Click on the "Access to Lab 0*n*" link at bottom of any of the "Unit 0*n* Lab" links found in each of the 10 course "units" except Lab 01, which you will probably be able to access without authentication.
3. When prompted, enter the lab access code you purchased with the textbook.

4. Once your access code has been validated, you will have access to the virtual laboratory via any of the "Access to Lab 0*n*" links found on the Canvas page for CIS 56 for the length of your subscription (about 6 months).

RELATED ACCESS ISSUES

If your code doesn't work or you are unable to register please contact the J&B tech support specific for the virtual labs at 1-866-601-4525 or www.jblcourses.com/techsupport.

Canvas and the Virtual Lab Site: As noted above, Canvas will be used for completing all class assignments. This site also allows you to create discussion forums and to reach other students to form study groups, etc., as well as a chat-room to use in addition to regular e-mail. I am available at most times during the week via regular e-mail (I have my iPhone nearby at almost all times).

Hardware Requirements: A PC computer is recommended to run the Jones and Bartlett software to access the labs for this course. The critical feature is the full PC keyboard, but if you have a Mac, there is a virtual PC keyboard in the online lab that you can easily load if it is needed. It is more awkward, but it works.

You will also be required to have both a **webcam** and a **microphone** in order to use Proctorio, an extension to Chrome that you will required to install in order to take tests and quizzes. More about this below.

Software: The software required for this class is: (1**) Chrome web browser** (download from https://www.google.com/intl/en/chrome/browser/#eula. Officially, Firefox is recommended for Canvas, but I have found that Chrome will work just fine, and Chrome is required for Quizzes and tests, and life is less complicated if you use just one browser. The Jones and Bartlett access codes you purchase via the ISBN numbers provided will allow access to the Jones & Bartlett virtual environment that accompanies the textbook, and all of the software used will be located on their servers. (2) You must also install **Proctorio** as an extension to Google Chrome in order to take any of the Quizzes or Tests required for this course (please note the discussion of this in the following paragraph). (3) You will need **MS Word** or a tool that produces output compatible with Word (.DOC or .DOCX files), like Apache Open Office. (4) **Microsoft PowerPoint** on a computer with a microphone to record audio will be required if you wish to earn extra credit for doing presentations.

More on using Proctorio software to monitor Quizzes

As you may have noted above, I am switching the course over to use Proctorio this quarter (you must use Chrome to download it from https://ccconlineed.instructure.com/courses/700/pages/getting-started-with-proctorio-student-guide) for all Quizzes and the Final. This will also require that the computer you use for quizzes be supplied with a web camera and microphone (some tablets and laptops have both of these things installed already). In addition to the added camera and microphone, you will need to install Google Chrome web browser (download from https://www.google.com/intl/en/chrome/browser/#eula) with add-on Proctorio (this is required for Quizzes and the Final and can be downloaded - using Chrome to do so – from https://chrome.google.com/webstore/detail/proctorio/fpmapakogndmenjcfoajifaaonnkpkei).

Proctorio is designed to provide on-line proctoring for quizzes and tests by using AI and blocking your use of Google or other materials to help you answer questions.

WAYS TO EARN POINTS TOWARD YOUR GRADE

This course will require weekly, hands-on lab assignments in which you will be using security software. You will take 10 quizzes and a final exam. Finally, in addition to these graded activities, you have the opportunity to earn additional "extra credit" points by researching and presenting additional information about tools and various forensic and recovery issues currently being discussed in the press and on the web to the class. The maximum possible points are summarized in the table shown below.

Source	number	points	total
Laboratory assignments	10	10	100
Laboratory Extra Credit	*10*	*2.5*	*25*
Quizzes	10	10	100
Final	1	100	100
Extra Credit/Security News Presentations	*5*	*10*	*50*
Total points possible:			375

SUBMITTING WEEKLY LABORATORY ASSIGNMENTS

This course uses a virtual laboratory environment provided by Jones and Bartlett to accompany the textbook, and all of the labs will require access to this environment. All course information, including assignments, course deadlines, etc. will be made available to you online via the Canvas course web site. When you enter the Canvas online course site, you will find the assignments that you will be asked to complete, listed within each Unit of the quarter. The actual course schedule and due dates for exams and assignments are subject to change and will be posted in the schedule in this course syllabus on the Canvas site for this class. Each week's lab assignment will entail using the virtual environment and doing a number of screen captures, which you will use to document your actions there. You will then paste the captured screen images into your narrative, answering the questions and describing what you did, and post the resulting document to satisfy the assignment at the class Canvas site.

LATE WORK

Lab reports will be accepted after the due date according to the following rules: Ten percent (10%) of the maximum possible points will be subtracted for each ½ day (12 hours) the assignment is late. This will continue until 2 ½ days have passed, when the points total will drop to zero, and no credit will be earned. If you have clear and compelling reasons for not getting an assignment in on time, **please let me know on or before the day it is due**, and I will arrange an extension for compelling cases. **Quizzes must be completed before the date/time specified and cannot be taken beyond the deadline.** If you miss any deadline, it may effectively lock you out from viewing unit /'Final Practice" materials. Therefore, you are better served by getting an imperfect Lab or Quiz in before the deadline than attempting to submit a perfect one after the deadline.

EXTRA CREDIT WORK

Lab Extra Credit: On the template for each Lab you will find the segments. The first is a set of short essay questions that you will answer in text. The second is a collection of "capture" headings that you will use to organize your required pasted screen captures from Section 2 of the Lab. The third is a collection of "capture" headings that you will use to organize extra credit captures from Section 1 of the Lab.

Audio-augmented PowerPoint presentations for Extra Credit: Unlike the lab extra credits, this form of Extra Credit will be prepared as a PowerPoint, with an audio recording of your voice doing the presentation, which I will post for the full class to access. (Even older versions of PowerPoint permit the recording of your voice for presentations: all you need is a laptop with a built-in microphone, or an external microphone with either USB or audio jack.) You will upload a PowerPoint presentation that has been augmented with your own voice recording, explaining each slide, with no more than 10-minutes time being taken for the full presentation. **Extra Credit work will be posted on topics that are truly substantive and that target specific security issues pertinent to this course.** These Extra Credits will involve:

(1) The demonstration of, and/or installation of, and/or use of, and/or analysis of, major tools used in hacking (like Wireshark, Metasploit, Kali Linux, etc.), or

(2) The analysis and demonstration of the accomplishment of significant tasks on sites such as hackthissite.org or enigmagroup.org/ (e.g., accomplishment of two "realistic" hacks on HackThisSite), or

(3) The reporting and technical analysis of major events and issues in the digital security realm (e.g., analysis of a major new exploit),

Any Extra Credit presentations **will require the prior approval of Professor Fisk** and will be posted to the Canvas site to earn extra credit points. (If it is accepted for credit, Dr. Fisk will make your report available to the full class.)

I will accept a maximum of only 5 Extra Credit presentation submissions per week (first come-first served), and you cannot submit any more than one per week. I will accept a maximum of 5 Presentation Extra Credits from any one person.

THE SEQUENCE OF EVENTS FOR COMPLETING EACH UNIT

Initially, you may find that the Canvas page looks rather empty. The reason is that You must complete the Student Contract, which simply summarizes the rules we will operate under for the course. Once you are able to answer "Yes" to each of the Student Contract questions, you can proceed and the rest of the course becomes visible. There will be 10 units associated with specific chapters in the text and specific Laboratory exercises, as shown in the table below:

Unit Sequence Table:

Unit/Week	Lab "Due" and "Deadline" Dates, plus Quiz "Deadline"	Lecture / LabTopic	Reading
Unit 1/ Wk. 2	**Unit 01 Lab Due by 11:59 PM 7/10; Lab Deadline 11:59 AM (noon) 7/13. Quiz Deadline by 11:59 PM (midnight) 7/13.**	Intro, syllabus, Information Systems Security / Performing Reconnaissance and Probing using Common Tools	Chpt 1
Unit 2/ Wk2	**Unit 02 Lab Due by 11:59 PM 7/13; Lab Deadline 11:59 AM (noon) 7/16. Quiz Deadline by 11:59 PM (midnight) 7/16.**	The Internet of Things and Other Issues / Performing a Vulnerability Assessment	Chpt 2
Unit 3/ Wk. 3	**Unit 03 Lab Due by 11:59 PM 7/16; Lab Deadline 11:59 AM (noon) 719. Quiz Deadline by 11:59 PM (midnight) 7/19.**	Malicious Attacks, Threats & Vulnerabilities / Enabling Windows Active Directory and User Access Controls	Chpt 3
Unit 4/ Wk. 3	**Unit 04 Lab Due by 11:59 PM 7/19; Lab Deadline 11:59 AM (noon) 7/22. Quiz Deadline by 11:59 PM (midnight) 7/22.**	Drivers of Info. Security Business & Access Controls / Group Policy Objects & Microsoft Baseline Security Analyzer for Change Control	Chpt 4&5
Unit 5/ Wk. 4	**Unit 05 Lab Due by 11:59 PM 7/22; Lab Deadline 11:59 AM (noon) 7/25. Quiz Deadline by 11:59 PM (midnight) 7/25.**	Security Operations & Administration / Performing Packet Capture and Traffic Analysis	Chpt 6
Unit 6/ Wk. 4	**Unit 06 Lab Due by 11:59 PM 7/25; Lab Deadline 11:59 AM (noon) 7/28. Quiz Deadline by 11:59 PM (midnight) 7/28.**	Auditing, Testing and Monitoring / Implementing a Business Continuity Plan	Chpt 7
Unit 7/ Wk. 5	**Unit 07 Lab Due by 11:59 PM 7/28; Lab Deadline 11:59 AM (noon) 7/31. Quiz Deadline by 11:59 PM (midnight) 7/31.**	Risk, Response & Recovery / Using Encryption to Enhance Confidentiality and Integrity	Chpt 8
Unit 8/ Wk. 5	**Unit 08 Lab Due by 11:59 PM 7/31; Lab Deadline 11:59 AM (noon) 8/3. Quiz Deadline by 11:59 PM (midnight) 8/3.**	Cryptography / Performing a Web Site and Database Attack by Exploiting Identified	Chpt 9
Unit 9/ Wk. 6	**Unit 09 Lab Due by 11:59 PM 8/3; Lab Deadline 11:59 AM (noon) 8/6. Quiz Deadline by 11:59 PM (midnight) 8/6.**	Telecommunications / Eliminating Threats with a Layered Security Approach	Chpt 10
Unit 10/ Wk. 6	**Unit 10 Lab Due by 11:59 PM 8/6; Lab Deadline 11:59 AM (noon) 8/9. Quiz Deadline by 11:59 PM (midnight) 8/9.**	Malicious Code & Activity / Implementing an Information Systems Security Policy	Chpt. 11
Week 06	**August 9, 2019 –from 4 to midnight – take Final!**	**FINAL - (110 min)**	Chap 1-11

For each unit, the materials must be accessed and completed in the required order and must be completed before the listed "deadline" date in order to earn credit.

Practice quizzes have been provided (these are T/F questions) with each unit to help you determine if you are ready to take the unit quiz. You can take practice quizzes as often as you wish, and your scores on these will not be used in your grading.

You will be permitted to take each Unit quiz only once and must use Proctorio and Chrome to do so. Again, please note that you will get only one try at the unit quiz.

The Lab report of the first unit *should* be completed and uploaded to the class Canvas site before midnight of Friday, July 10, and *must* be completed (and uploaded) before noon, Monday, July 13 for you to remain in the class and receive full credit.

In general, the sequence you should follow for each unit is as follows:

1. Read the chapter(s) for the unit and watch the lecture, with audio narrative for the unit;
2. **Do the virtual lab for the unit and post the lab report to Canvas as a single DOC (MS Word format) document**;
3. Take the "self-test" practice quiz for the unit (it is scored, but will not count toward your grade);
4. **Take the unit quiz for the unit after the lab report is uploaded**.

The **bold-faced** items on the numbered list above are the only items that you are required to do to receive a grade.

TESTING/GRADING POLICIES/FINAL GRADES

To pass this course, you must complete ALL assignments plus ALL Exams with the minimum scores shown below**.** Weekly deadlines for all assignment will be posted via Canvas.

Grading Scale:

A+	96%-100%
A	93% -95%
A-	90%-92%
B+	87%-89%
B	83%-86%
B-	80%-82%
C+	77%-79%
C	70%-76%
D+	67%-69%
D	63%-66%
F	0%-62%

Final Grade Mix:

The following percentages reflect how the final grade will be determined:

Lab Assignments	33.3%
Quizzes	33.3%
Final Exam	33.3%
Extra Credit	25.0%
	=====
Total =	125.0%

ACADEMIC INTEGRITY:

Students who submit work of others as their own or cheat on exams or other assignments will receive a failing grade in the course and will be reported to college authorities.

Note to students with disabilities

If you have a disability-related need for reasonable academic accommodations or services in this course, provide your instructor with a Test Accommodation Verification Form (also known as a TAV form) from Disability Support Services (DSS) or the Educational Diagnostic Center (EDC). Students are expected to give a five day notice of the need for accommodations. Students with disabilities can obtain a TAV form from their DSS counselor (864-8753 DSS main number) or EDC advisor (864-8839 EDC main number).

TECHNICAL DIFFICULTIES

If you have technical problems with the Jones and Bartlett virtual laboratory, please contact Jones and Bartlett Technical Support directly at msupport@jblearning.com.