BUSA 535: Ethical Hacking
SPRING 2024

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Office Location: Dallas Office
Office Hours: Thursday 8.30AM – 12PM, 2PM – 3PM in Dallas (or by appointment)
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Please use emails to ask me questions, and use BUSA-535 in the subject line of the email.
This is the fastest way to reach me.

COURSE INFORMATION

Required Textbook

ISBN: 9781284147803
Title: HACKER TECHNIQUES, TOOLS, INCIDENT HANDLING 3E

You also need Cloud Labs Access. The whole package is around $125-$130. Check D2L for
details BEFORE buying the book (discounts may be provided).

COURSE DESCRIPTION
This course is an introduction to hacking tools, techniques, and incident handling. Areas of
instruction include an evolution of hacking and penetration testing; the basics of cryptology
for information security; foot-printing; vulnerability scanning and exploit; wireless, web, and
database attacks; malware and system exploit; traffic analysis; incident response; and
defensive technologies and controls. In this course, students will learn how to discover
vulnerabilities, how to attack and defend systems, how to respond to attacks, and how to
identify and design controls to prevent future attacks.

Student Learning Outcomes

Students will:
1. Develop a security mindset
2. Get familiar with various attack techniques
3. Learn hands-on methods of attack formulation, prevention and detection
4. Demonstrate knowledge and proficiency in:
    a. Ethics of Hacking and Cracking
    b. Cryptography
    c. Reconnaissance
    d. Sniffers
    e. Malware
    f. Linux
    g. General hacking skills and knowledge
    h. Vulnerability scanning

GRADING

Quizzes: 14 Quizzes covering the chapter texts covered in that week (one or two each week) will be given during the semester. You can get a maximum of 50 points for these.

Assignments: 4 Assignments will be given during the semester. You can get a maximum of 50 points for these.

Labs: A total of 10 labs will provide hands-on experience for the materials covered in the text. You can get a maximum of 35 points for these.

Labs' Quizzes: A total of 15 lab quizzes, that related to each lab will be given during the semester. You can get a maximum of 10 points for these.

Final Grade
At the end of this semester, if your total is between 90 and 100, you will get an A; if it's between 80 and 89, you will get a B, and so on. **Please note that the actual points will be used to calculate your final grade.** No curving will be used in this class.

Points	Grade
90-100	A
80-89	B
70-79	C
60-69	D
below 60	F

Student Responsibilities/Tips for Success in the Course

1. Students are expected to:
   a. Read the text related to the topic listed for each week on D2L.
   b. Complete all required assignments as scheduled
   c. Watch any tutorial/recorded videos as posted
   d. Read the slides for each week/topic

2. This syllabus is tentative for the semester. Certain topics may be stressed more, or less than indicated in the schedule. Depending on the class progress, certain topics may be omitted or added.

3. Behavior: "All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment." (See Student's Guide Book). During your collaboration with me and your fellow students online or in class, professionalism and respect will be expected.

4. Any form of cheating – copying, sharing files, submitting the work of another as your

TECHNOLOGY REQUIREMENTS

The following information is provided to assist you in successfully using technology to complete the assignments and class activities:

- To fully participate in online courses you will need to use a D2L-compatible internet browser. Please check with techsupport if in doubt.
- You will need regular access to a computer with a broadband Internet connection.
- The minimum computer requirements are:
  - **4+ GB of RAM (8+GB preferred), 20 GB or more (EMPTY Hard-disk space).** You will need to install Linux and Windows VMs, so make sure your system has the capability. If you do not have a system with empty hard-disk space, you WILL need to buy an External hard-drive. If you cannot, please DROP this class. All assignments/labs are run on the Linux VM, and if you cannot have a VM, you will lose 50% of the grade.
  - Broadband connection required courses are heavily video intensive
  - Video display capable of high-color 16-bit display 1024 x 768 or higher resolution
- You must have a:
  - Sound card, which is usually integrated into your desktop or laptop computer
  - Speakers or headphones.
  - For courses utilizing video-conferencing tools and/or an online proctoring solution, a webcam and microphone are required.
- At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.
- This is and advanced course. You are expected to know how to take screenshots and put them in Word/Pdf documents.
- For additional information about system requirements, please see: https://secure.D2L.com/tamuc/index.learn?action=technical

LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:
https://community.brightspace.com/s/article/Brightspace-Platform-Requirements

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:
https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

https://community.brightspace.com/support/s/contactsupport

COMMUNICATION AND SUPPORT

- If you ask me questions by emails, I will reply within 48 hours. However, I usually answer them much faster than this.
- If you have questions about software operations, please be sure to include the screenshots of the questions in the emails.
- All assignment due dates, project deadlines, and exam time are central time in the United States.

COURSE AND UNIVERSITY POLICIES

Course Specific Procedures/Policies

The class schedule will be provided and updated in D2L. A tentative topics list with each week is listed at the end of this document. Each assignment will be listed with its due date. Since assignments make up the majority of your grade, you should make every effort to complete them on time. Late assignments are **highly** discouraged. For each day

an assignment is late it will be deducted 15%. Under **NO** circumstances will I accept an assignment more than FOUR DAYS late.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.
http://www.tamuc.edu/admissions/registrar/documents/studentGuidebook.pdf

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: Netiquette http://www.albion.com/netiquette/corerules.html

TAMUC Attendance

For more information about the attendance policy please visit the Attendance webpage and Procedure 13.99.99.R0.01.
http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf

Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

Undergraduate Academic Dishonesty 13.99.99.R0.03

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

Graduate Student Academic Dishonesty 13.99.99.R0.10

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf

ADA Statement

Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce
Gee Library- Room 132
Phone (903) 886-5150 or (903) 886-5835   Fax (903) 468-8148
Email: Rebecca.Tuerk@tamuc.edu

http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the Carrying Concealed Handguns On Campus document and/or consult your event organizer.

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

AI use policy [May 2023]
Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text,

or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty
13.99.99.R0.10 Graduate Student Academic Dishonesty

COURSE CALENDAR (Tentative)

This is only a tentative class schedule. Updates will be communicated and maintained in D2L

Grading Category	Activity Title	
Week 1: Hacking: The Next Generation		
Required Readings	Chapter 1: Hacking: The Next Generation	
Lab 1	Assessing and Securing Systems on a Wide Area Network (WAN)	
Week 2: TCP/IP Review		
Required Readings	Chapter 2: TCP/IP Review	
Assignment 1	Current Security Threats	
Week 3: Cryptographic Concepts & Physical Security		
Required Readings	Chapter 3: Cryptographic Concepts Chapter 4: Physical Security	
Lab 2	Applying Encryption and Hashing Algorithms for Secure Communications	
Week 4: Footprinting Tools and Techniques		
Required Readings	Chapter 5: Footprinting Tools and Techniques	
Lab 3	Data Gathering and Footprinting on a Targeted Web Site	
Week 5: Port Scanning		
Required Readings	Chapter 6: Port Scanning	
Lab 4	Using Ethical Hacking Techniques to Exploit a Vulnerable Workstation	
Week 6: Enumeration and Computer System Hacking		
Required Readings	Chapter 7: Enumeration and Computer System Hacking	
Assignment 2	Vulnerabilities in IT Security	

Grading Category	Activity Title
Week 7: Wireless Vulnerabilities	
Required Readings	Chapter 8: Wireless Vulnerabilities
Lab 5	Auditing a Wireless Network and Planning for a Secure WLAN Implementation
Week 8: Web and Database Attacks	
Required Readings	Chapter 9: Web and Database Attacks
Lab 6	Attacking a Vulnerable Web Application and Database
Week 9: Malware	
Required Readings	Chapter 10: Malware
Lab 7	Identifying and Removing Malware on a Windows System
Week 10: Sniffers, Session Hijacking, and Denial of Service Attacks	
Required Readings	Chapter 11: Sniffers, Session Hijacking, and Denial of Service Attacks
Assignment 3	Network Sniffing: Ethics and Other Issues
Week 11: Linux and Penetration Testing	
Required Readings	Chapter 12: Linux and Penetration Testing
Lab 8	Analyzing Network Traffic to Create a Baseline Definition
Week 12: Social Engineering	
Required Readings	Chapter 13: Social Engineering
Assignment 4	SQL Injection Response
Week 13: Incident Response	
Required Readings	Chapter 14: Incident Response
Lab 9	Investigating and Responding to Security Incidents
Week 14: Defensive Technologies	
Required Readings	Chapter 15: Defensive Technologies
Lab 10	Securing the Network with an Intrusion Detection System (IDS)