

BUSA 533: Information & Network Security

SUMMER I 2023

Instructor: DR. ZAKI MALIK

Office Hours: Online by appointment

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Please use emails to ask me questions, and use BUSA-533 in the subject line of the email. This is the fastest way to reach me.

COURSE INFORMATION

Required Textbook

- **Fundamentals of Information Systems Security**, Kim, David, and Michael G. Solomon. Jones & Bartlett, 2023, Fourth Edition. ISBN: 9781284244571

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 provides an overview of security challenges and strategies of countermeasure in the information systems environment. Topics include definition of terms, concepts, elements, and goals incorporating industry standards and practices with a focus on confidentiality, availability, and integrity aspects of information systems. The labs are designed to provide a rich learning experience to students through the use of hands-on exercises on the course material.

Learning Objectives

1. Explain information systems security and its effect on people and businesses.
2. Describe the principles of risk management, risk assessments, and issues related to threats and vulnerabilities in an IT infrastructure.
3. Describe networking principles and security mechanisms.
4. Explain the role of access controls in an IT infrastructure.
5. Explain how businesses apply cryptography in maintaining information security.
6. Describe the impact of malware on an organization's systems and how to prevent and detect attacks.
7. Explain the role of security operations, security policies, security audits, testing, and monitoring in an IT infrastructure.

GRADING

- **Project/Assignments:** The project is divided in 3 parts, for a total of 15 points.
- **Quizzes:** 10 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 20 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 50 points for these.
- **Labs' Quizzes:** A total of 10 lab quizzes, that related to each lab will be given during the semester. You can get a maximum of 15 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 maybe 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 own – is not permitted. Students who participate (as givers/receivers) in any form of cheating will fail the course.

TECHNOLOGY REQUIREMENTS

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

- The course may require you to download and install open-source software. Specifically, you may be asked to install Virtual Machines (VMs). It is the student's responsibility to follow the given instructions and get the system ready in due time. You cannot come to the instructor only a few days before the assignment is due and say that you have NOT installed the required software. You WILL HAVE ample time for all tasks !
- To fully participate in online courses you will need to use a current Flash enabled internet browser.
- 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 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. Most assignments/labs are run on the Linux VM, and if you cannot have a VM, you will lose a large percentage 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.
- 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. 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.

<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.

COURSE CALENDAR (Tentative)

Week	Grading Category	Activity Title
<i>Week 1: Information Systems Security and Emerging Technologies</i>		
	Required Readings	Chapter 1: Information Systems Security Chapter 2: Emerging Technologies Are Changing How We Live
	Quiz	Chapter 1, 2
	Lab	Exploring the Seven Domains of a Typical IT Infrastructure
<i>Week 1: Risks, Threats, And Vulnerabilities</i>		
	Required Readings	Chapter 3: Risks, Threats, And Vulnerabilities
	Quiz	Chapter 3
	Lab	Performing a Vulnerability Assessment
	Assignment	Quantitative and Qualitative Risk Assessment Analysis
<i>Week 2: Business Drivers, Networks, and Telecommunications</i>		
	Required Readings	Chapter 4: Business Drivers of Information Security Chapter 5: Networks and Telecommunications
	Quiz	Chapter 4, 5
	Lab	Performing Packet Capture and Traffic Analysis
	Assignment	Create a Remote Access Control Policy
<i>Week 2: Access Controls and Cryptography</i>		
	Required Readings	Chapter 6: Access Controls Chapter 7: Cryptography
	Quiz	Chapter 6, 7
	Lab	Applying User Authentication and Access Controls
	Lab	Using Encryption to Enhance Confidentiality and Integrity
	Assignment	Design an Encryption Strategy
<i>Week 3: Malicious Software and Attack Vectors</i>		
	Required Readings	Chapter 8: Malicious Software and Attack Vectors
	Quiz	Chapter 8
	Lab	Assessing Common Attack Vectors
<i>Week 3: Security Operations, Auditing, Testing, and Monitoring</i>		

	Required Readings	Chapter 9: Security Operations and Administration Chapter 10: Auditing, Testing, and Monitoring
	Quiz	Chapter 9, 10
	Lab	Implementing an IT Security Policy
	Lab	Implementing Security Monitoring and Logging
<i>Week 4: Contingency Planning and Digital Forensics</i>		
	Required Readings	Chapter 11: Contingency Planning Chapter 12: Digital Forensics
	Quiz	Chapter 11, 12
	Lab	Configuring Backup and Recovery Functions
	Lab	Performing Incident Response and Forensic Analysis
	Assignment	Methods and Techniques When Uncertain How to Respond to Cybersecurity Incidents
<i>Week 4: Information Security Standards, Certifications, and Laws</i>		
	Required Readings	Chapter 13: Information Security Standards Chapter 14: Information Security Certifications Chapter 15: Compliance Laws
	Quiz	Chapter 13, 15
	Assignment	Apply the Payment Card Industry Data Security Standard (PCI DSS)

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