



ITSS 4360.502 - Network & Information Security

Class Information

Term	Spring 2024 [Jan 16– May 10]
Course Number	ITSS 4360.502
Class Meetings	Monday 7:00 PM – 10:45 PM
Classroom	JSOM 2.107

Instructor Information

Instructor	Satish More
Email	satish.more@utdallas.edu <i>Please include the course number and section number in all email correspondence. Please use your UTD e-mail system for any communication with the instructor/TA.</i>
Office Location	Virtual/Online
Office Hours	by appointment
TA Information	Abhay Dogra (abhay.dogra@utdallas.edu) Office hours: TBD

Course Information

Course Description	ITSS 4360 - Network and Information Security (3 semester credit hours) With the advances in information technology, the security of information assets has become a keenly debated issue for organizations. While much focus has been paid to technical aspects of the problem, managing information security requires more than technology. Effective information security management demands a clear understanding of technical as well as socio-organizational aspects of the problem. The purpose of this course is to prepare business decision makers who recognize the threats and vulnerabilities present in current information systems and who know how to design and develop secure systems.
Course Objectives / Outcomes	<ol style="list-style-type: none">1. Explain networking protocols and their relationship to hardware and software, specifically, students should know the names and roles of the seven layers of the OSI model for network transmission.2. Develop solutions for networking and security problems, balancing business concerns, technical issues and security.3. Explain the concepts of confidentiality, availability and integrity in Information Assurance, including physical, software, devices, policies and people. Analyze these factors in an existing system and design implementations.4. Explain and apply key cryptography, key management, digital signatures, and authentication protocols.
Pre-requisites	ITSS 3300 and (MATH 1326 or MATH 2414 or MATH 2419 or OPRE 3340) and (CS 2305 or MATH 2418 or MATH 2333 or OPRE 3333)

Course Materials

<p>Recommended Textbook(s) & Materials</p>	<p>Students will not be required to purchase a textbook. Instead, we will use a mix of presentations, videos, reading, exercises, and homework assessments to cover a broad variety of topics in a short amount of time. Each student’s commitment to participation, watching assigned videos, and reading assigned materials is critical to successful completion of the course.</p> <p>Recommended Text: Computer Security Principles and Practice, 5th edition by William Stallings and Lawrie Brown , Pearson, ISBN-13: 9780138091675</p> <p>All course materials (lecture slides, handouts, etc.) will be made available on eLearning. Students are responsible to check eLearning regularly to access course materials. Students are required to have a laptop for use in every class.</p> <p>These materials may be downloaded during the course, however, these materials are for registered students' use only.</p> <p>Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.</p>
<p>Laptop/ Software Requirements</p>	<p>This course is hands-on with many in-class examples and exercises. Students are required to install tools/software on their laptops and bring to each class.</p>

Grading Policy

<p>Grading Policy</p>	<p>This course will feature a mix of written and verbal assignments. The instructor will provide detailed instructions as well as the grading criteria for each assignment. Please consult the course schedule for deadlines. Your final grade will be based on the total score of the following:</p> <p>Attendance / In-class participation: 20% Quizzes: 10% Assignments: 20% Midterm Exam: 25% Final Exam: 25%</p> <p>Quizzes & Exams will be administered via eLearning must be taken individually. Students must not collaborate on quizzes and/or exams and must not copy, photograph, or distribute quiz and/or exam content. The scheduled period for the quiz or exam will be communicated in advance and once a quiz or exam is started, it will be constrained by limited time. Students are encouraged to prepare for quizzes and exams to allow all questions to be completed within the allotted time. The quizzes and exams will generally be in multiple-choice format, typical of IT certification exams students may pursue in the future.</p> <p>Students are informed that online tools such as eLearning capture identifying information, such as network IP address. The IP address associated with quizzes, exams, or other deliverables may</p>
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be reviewed in the interest of identifying unauthorized collaboration and/or to maintain academic integrity.

Any indications of dishonest or unethical collaboration on assignments designed to be taken individually will be considered a failure to comply with University requirements and a violation of the Student Code of Conduct. Any indications of copying information and representing it as the original work of the student, including copying from books or Internet content, or using artificial intelligence tools such as ChatGPT, will be considered a violation of the Student Code of Conduct. If and when tools such as ChatGPT are to be used in class, this will be explicitly explained with the assignment. Always cite sources and indicate with whom you collaborated. There is no room for dishonesty, plagiarism, and/or cheating.

Properly citing sources and collaborators will help students avoid these pitfalls.

Note: (1) Please review submission instructions carefully; two separate submissions may be needed: (i) Turnitin – to check duplication/plagiarism, and (ii) normal submission. Use Google Chrome for uploading assignments.

Final Grading Scale

Letter Grade	Final Point Total
A	>=97.00-100.00
A-	>= 93.00-96.99
B+	>= 89.00-92.99
B	>= 85.00-88.99
B-	>= 81.00-84.99
C+	>= 77.00-80.99
C	>= 73.00-76.99
C-	>= 69.00-72.99
D+	>= 65.00-68.99
D	>= 61.00-64.99
D-	>= 57.00-60.99
F	56.99 & below

Course and Instructor Policies

<p>Attendance</p>	<p><u>ATTENDANCE IS REQUIRED.</u> Attendance will be taken during each class. In-class participation in all classes is extremely important to achieve maximum success. Attending the class gives you an opportunity to interact with your professor and your fellow students. Students who fail to participate in class regularly will likely face scholastic difficulty. YOU MUST BE PRESENT IN THE CLASS TO TAKE THE EXAMS AND QUIZZES. NO MAKE-UP EXAMS WILL BE PROVIDED.</p>
<p>Absence due to COVID-19</p>	<p>Students need to self-report COVID-19 positive results or exposures via an online form. Students should not attend class until cleared by campus tracers.</p>
<p>Class Recordings</p>	<p>No in-class recordings for the traditional instruction mode</p>
<p>Exams and Proctoring</p>	<p>All exams are scheduled well in advance. If you miss an exam, you will be given a zero! There are no makeup exams. <i>If you have a legitimate, non-academic reason for missing an exam, you must provide verifiable documentation at least 24 hours BEFORE the day of the exam.</i> If you contact me AFTER the exam, it is considered missing the exam.</p> <p>Points will be deducted if you arrive late to the exam. You must take the exam within 15 minutes of the scheduled start time. To maintain required academic integrity of this course, examinations may require the use of a widely used proctoring service, for online assessment proctoring, using the UTD testing center, and/or in-class exam proctoring.</p>
<p>Lockdown Browser / Honorlock</p>	<p>The use of Lockdown browser / HONORLOCK may be required. More information will be provided before the Exam.</p>
<p>eLearning</p>	<p>eLearning will be used for class content (e.g., class slides and assignment descriptions) and the recording of grades. Slides will be posted before class is held. Class announcements (e.g., change in assignment dates) will be sent to the student email on record in eLearning.</p> <p>IT IS THE STUDENTS' RESPONSIBILITY TO REGULARLY CHECK ELEARNING AND THEIR UTD EMAIL ACCOUNTS.</p> <p>Please ensure that you have good internet connectivity.</p>
<p>Communications and Instructor Response Policy</p>	<p>For questions related to the course material, assignments, quizzes, exams, scores and grades, please use class sessions, office hours, and discussion forums. For other matters, <i>send an E-mail using UTD email system for incoming and outgoing messages. (Emails sent using your personal email address will be ignored).</i> The instructor will respond to student inquiries through email within 48 business hours (excluding holidays and weekends). Students should adhere to business professional style of communication and must use their UTD email for correspondence.</p>
<p>Assignments</p>	<p>Written assignments must adhere to the APA style guide of formatting, citing, and referencing. Descriptions of assignments will be posted as they are assigned. All assignments will be submitted via eLearning. <i>Assignments submitted by email will not be accepted.</i></p> <p>If you submit an incorrect assignment or need to resubmit your assignment in eLearning you will be allowed to resubmit as long as it is before the due date. Send an email to the instructor/TA at least 12 hours prior to the due date to clear your submission. Upon doing so, you will be able to resubmit. Inquiries related to late submissions will not be entertained.</p>

<p>Clarifications / Inquiries regarding Assignments</p>	<p>You must review each assignment (and download required files) as soon it is posted. Each assignment will be explained in detail in the class. It is your responsibility to make sure that you understand all the instructions. If you still have questions or need clarifications about the assignment, you MUST post queries on the discussion board by the date specified in the assignment. You can also seek clarifications from the instructor TA during their office hours. Please do not wait for the last moment to seek clarifications. A penalty of 20% will be imposed if you seek clarifications within 24 hours of the due date/time.</p>
<p>Assignment Grading</p>	<p>Please be advised that if you have a question or issue with your assignment grade, contact the instructor/TA within “one week” of grade posting. Your entire assignment is subject to re-review (re-grading) which may or may not result in additional points. <i>No inquiries regarding grades will be entertained after one week from the date of grade posting.</i> General grading criteria can be found in eLearning. Assignment-specific grading criteria will be included with the assignment instructions. You will lose points for not following instructions.</p>
<p>Late Work / Submissions</p>	<p>All assignments are due on the specified date. Please give yourself sufficient time to upload assignments on the eLearning Portal/Turnitin. You would not be able to submit/upload if the due date is passed. You will be graded only on what is submitted on the portal. No late assignments will be accepted unless prior arrangements have been made with the instructor in which case a penalty of 25% per day (including weekends) will be assessed. Only one such exemption is allowed in the entire semester.</p> <p>Deadlines in the professional world are not a moving target. Missed deadlines affect product delivery, professional reputation, and revenue. Please plan accordingly. For these reasons, late work or incomplete work is not acceptable in this course EXCEPT in the most extreme and unlikely circumstances (see below) – in which case, e-mail the evidence of extreme circumstances to me/TA at least 24 hours prior to the due date (Penalty will apply).</p> <p>Rule: You will be graded only on what is submitted on time. Ensure that you have enough time to deal with potential technical glitches that may arise at the last moment. Inquiries related to late submissions will not be answered / entertained.</p>
<p>Exceptions for Late Work due to Server Unavailability or other Technical Difficulties</p>	<p>Exceptions: The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide appropriate accommodation based on the situation.</p> <p>Students should immediately report any problems to the instructor and also contact the online eLearning Help Desk. The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.</p>
<p>Extra Credit</p>	<p>There is no extra credit.</p>
<p>Final Course Letter Grades</p>	<p>Final course letter grades are based solely on your performance on the graded assignments, exams, projects, and/or attendance. No bonus points, extra credit, or additional assignments are offered. <i>Do not</i> assume that final grades will be rounded up/down to the nearest whole number. No inquiries regarding “rounding up” will be entertained.</p>
<p>Classroom Conduct</p>	<p>Class discussions, questions, and enthusiasm about the course material are highly encouraged. Please engage in class discussions. I do ask that you are respectful during class, be respectful to your peers who are part of the learning environment. This means no talking during class presentations, <i>silence your cell phone and do not take calls inside the classroom while class is in session.</i></p>

Discussion Board	Students are encouraged to use discussion boards to post questions / comments related to topics in this course.
Student Code of Conduct	For information related to “Student Code of Conduct”, please go the website: https://conduct.utdallas.edu/
Academic Integrity	<p>DO NOT CHEAT and DO NOT PLAGIARIZE.</p> <p>All homework and exams are to be individual efforts. You are not to collaborate with other students, or to discuss homework or assignments with other students prior to submission. <i>Copying homework, assignments, or exams, in whole or in part, from other students or from assignments from previous semesters will be considered to be an act of academic dishonesty. Cases of cheating / plagiarism will be referred to the University Authorities for action.</i></p> <p>All work should demonstrate the same professional and ethical standards expected of you in the workplace, including proofreading and editing carefully all work you submit in class. Professionalism and personal responsibility mean that you use appropriate source citations so that you avoid violations of copyright and academic honesty, even if those violations are inadvertent. The University is committed to academic excellence and expects academic honesty from all members of the University community. Academic honesty includes adherence to guidelines established by the instructor for both individual and group work. It prohibits representing the work of others to be one’s own (plagiarism); receiving unauthorized aid on an assignment (cheating); and using similar papers or other work products to fulfill the obligations of different classes without the instructor’s permission. Any student engaged in academic dishonesty will be subject to disciplinary action. All cases of academic dishonesty will be reported directly to Judicial Affairs. My recommendation for acts of academic dishonesty will be an F in the course. The importance of academic honest and my recommended sanctions are emphasized during class, in emails, and on the exams and assignments.</p>
Comet Creed	<p>This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:</p> <p><i>“As a Comet, I pledge honesty, integrity, and service in all that I do.”</i></p>
University Policies & Procedures	<p>For information regarding general University policies and procedures, please go to http://go.utdallas.edu/syllabus-policies. These policies include the following:</p> <ul style="list-style-type: none"> • Technical Support • Field Trip Policies, Off-Campus Instruction and Course Activities • Student Conduct and Discipline • Academic Integrity • Copyright Notice • Email Use • Withdrawal from Class • Student Grievance Procedures • Incomplete Grade Policy • Disability Services • Religious Holy Days • Avoiding Plagiarism • Title IX • Campus Carry

Course Modality

Instructional Modes	Traditional Classroom /Laboratory; (In-person, Face-to-Face). Not recorded
eLearning and Course Platforms	<p>This course can be accessed using your UT Dallas NetID account on the eLearning website. Please see the course access and navigation section of the Getting Started with eLearning webpage for more information. To become familiar with the eLearning tool, please see the Student eLearning Tutorials webpage.</p> <p><i>Announcements, written lecture materials, assignments and grades will be posted in the course's eLearning site. It is the students' responsibility to regularly check their UTD email accounts and the eLearning page for this course.</i></p> <p>Microsoft TEAMS may be utilized for lectures and other live communications. If any, recorded (and annotated) lectures and other communications will be available on Microsoft TEAMS, as well Active links to TEAMS will be available in the eLearning web site. In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the Getting Started with eLearning webpage.</p> <p>UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance: (1- 866-588-3192), email request service, and an online chat service.</p>
Technical Requirements	Please review the important technical requirements on the Getting Started with eLearning webpage.
COVID – 19 Guidelines and Resources	<p>The information contained in the following link lists the University's COVID-19 resources for students and instructors of record. Please see http://go.utdallas.edu/syllabus-policies. For hybrid/blended courses, UT Dallas strongly suggests that all students wear a face covering that covers the nose and mouth in all university buildings and classrooms. IF YOU ARE EXPERIENCING SYMPTOMS, PLEASE DO NOT COME TO CAMPUS. Anyone attending class in person exhibiting active symptoms may be asked to leave. Students who are unable to comply with the university should consult the Comets United webpage for further instructions. Students who have tested positive for COVID-19 or may have been exposed should not attend class in person and should instead follow required disclosure notifications as posted on the university's website (see "What should I do if I become sick?" webpage). In-person participation records may be used to assist the University or local public health authorities in performing COVID-19 occurrence monitoring. Please note – in-person attendance requires consistently adhering to University requirements. Failure to comply with these University requirements is a violation of the Student Code of Conduct. To help preserve the University's in-person learning environment, UT Dallas recommends the following: Adhere to the University's CDC Updated Guidelines on July 30, 2021. All Comets are strongly encouraged to wear face coverings indoors regardless of vaccination status.</p>
Accommodations for Students Who Must Isolate Due to COVID – 19	University requires students who test positive for COVID-19 or who are close contacts as determined by the campus contact tracing program to isolate or quarantine as applicable.
Student Resources for COVID-19	Students who have tested positive for COVID-19 or may have been exposed should not attend class in person and should instead follow required disclosure notifications as posted on the university's website (see " What should I do if I become sick? ")

Course Schedule, Assignments, and Due Dates

This is a **TENTATIVE** class schedule. *Instructor reserves the right to make changes to the content and schedule.* Changes, if any, will be announced in the class as well as posted on eLearning portal. It is the student's responsibility to keep track of them.

Week No. (Date)	Description	Notes	Quiz	Assignment (Due Date)
1 (1/22)	Course Introduction, Syllabus and Roadmap; Network Security contextualized; Career impact	Lecture Slides, Handouts and Case Study		
2 (1/29)	Network and Security Fundamentals; OSI layers	Lecture Slides, Handouts and Case Study	Syllabus Quiz	Assignment 1 Due: 2/19
3 (2/5)	Endpoints and Attacks	Lecture Slides, Handouts and Case Study	Quiz 1 (on Class 1 and 2)	
4 (2/12)	Endpoint Security	Lecture Slides, Handouts and Case Study		Assignment 2 Due 3/4
5 (2/19)	Network Infrastructure and Attacks	Lecture Slides, Handouts and Case Study	Quiz 2 (on Class 3 and 4)	
6 (2/26)	Network Infrastructure Security; Midterm Exam Review	Lecture Slides, Handouts and Case Study		
7 (3/4)	MIDTERM EXAM			
8 (3/11)	No Class – Spring Break			
9 (3/18)	Software / Applications and Attacks	Lecture Slides, Handouts and Case Study		
10 (3/25)	Software / Application Security	Lecture Slides, Handouts and Case Study		Assignment 3 Due: 4/8
11 (4/1)	Key Cryptography	Lecture Slides, Handouts and Case Study	Quiz 3 (on Class 9 and 10)	
12 (4/8)	Incident Response; Digital Forensics	Lecture Slides, Handouts and Case Study		Assignment 4 Due: 4/29
13 (4/15)	Security Assessment	Lecture Slides, Handouts and Case Study	Quiz 4 (on Class 11 and 12)	
14 (4/22)	Final Exam Review	Lecture Slides, Handouts and Case Study		
15 (4/29)	FINAL EXAM			