Course Syllabus

Course Information

Course Number/Section	**ITSS 4360.002 (Live Meetings: Mon 4pm – 6:45pm) JSOM 2.722**
Course Title	**Network & Information Security**
Term	**Spring 2024**

Professor Contact Information

Professor	**Nate Howe**
Office Phone	**972-883-6855**
Email Address	**nxh141030@utdallas.edu**
Office Location	**Virtual meetings with Teams / FaceTime / Phone; or at mutually convenient location, as needed**
Online Office Hours	**Available upon request**
Other Information	**No Teaching Assistant Assigned**

Note: ***Individual office hours will be available for any student seeking to discuss class material and/or general advice related to success in the academic program and/or career planning. Office hours will be coordinated to fit the schedule of both parties with a best effort made to accommodate student preferences. Please initiate a request for office hours by emailing Professor Howe.***

Instructional Mode / Classroom Etiquette	**It is expected that you always attend in-person if you feel healthy and able to do so.** Because Professor Howe is committed to every student being successful in the course, live classes will be recorded may be shared after class at the discretion of Professor Howe. Assessments such as quizzes and the midterm exam will be administered via eLearning and students will participate remotely. **When students have a scheduling conflict or illness, they should work directly with Professor Howe to understand whether alternate arrangements are available.** Students will need to give the class several hours of attention each week to keep up with the material. The classroom will be considered a safe and welcoming space for all those in attendance. Personal health choices such as face coverings and social distancing will be respected by Professor Howe, who asks the same respect in return. UT Dallas leaders encourage all members of the campus community to consider risk mitigation options for health concerns, including avoiding visits to campus when ill. **Attendance will be measured and factored into the overall semester grade. A doctor's note provided to Professor Howe will be considered as an excused absence. Please coordinate with Professor Howe to ensure that planned absences are explained in advance so class work can be accomplished if classroom time is missed. Absences may or may not be excused, at the discretion of Professor Howe, and alternative assignments will be considered on a case-by-case basis.** Discussions of specific personal medical status, including participation in vaccination, is not required. Such discussions are discouraged to respect privacy.
Course Platform	The preferred collaboration methods will be those provided by UT Dallas, including eLearning (Blackboard), Microsoft 365 including email and Teams, and Box.com. Additional collaboration tools may be considered for approval by Professor Howe. The tools selected for delivery of the class are those which should provide access to all students. Please let Professor Howe know if there you have difficulty accessing the tools so that reasonable accommodations can be considered to maximize student success.
Expectations	All materials provided in the class are intended only for the benefit of those registered to attend the course. **Copying and distributing the materials, including videos, slides, assignments, examinations, etc. without written permission from Professor Howe is a violation of intellectual property rights and may lead to disciplinary action.** To enhance the learning experience, in-class demonstrations of security assessment tools and techniques may be used to reinforce lecture topics. Students must limit their use of security tools to the specific instructions provided in class. Students may not cause disruptive conditions for users of the UT Dallas network environment by running security testing tools. Specific product names and vendors will likely be discussed while studying the information security profession. No specific endorsement of these

	products or vendors is intended, and inclusion of product names and vendors in discussion is for education purposes only.
Asynchronous Learning Guidelines	The course is designed to create the maximum learning opportunity for all students. All significant content will be available for review using recordings. Students ready and willing to learn will have equitable access to the material. In-person attendance should be achieved whenever possible, though health and personal concerns may reasonably cause some students to miss some class sessions. Professor Howe is committed to working directly with students to coordinate when health concerns disrupt attendance. **Students are expected to communicate with Professor Howe in advance of absence.**

COVID-19 Guidelines and Resources

The information contained in the following link lists the University's COVID-19 resources for students and instructors of record.

Please see https://utdallas.edu/covid/.

Class Participation

Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. Your final semester grade may be impacted by your participation, or lack thereof. Participation includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Online discussion boards may be used as a method of collaboration and demonstration of participation. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Recordings

The instructor may record meetings of this course. Recordings may be made available to students registered for this class at the discretion of Professor Howe, for the purpose of supplementing the classroom experience or providing access to lecture information when a student has been out with illness or personal time conflict. Class recordings may be assigned for students to view, in the event that Professor Howe has a schedule conflict or becomes ill. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Recordings may not be published, reproduced, or shared with those not enrolled in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. If the instructor or a UT Dallas school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Materials

The Instructor will provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may

be downloaded during the course, however, these materials are for registered students' use only. 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.

Course Pre-requisites, Co-requisites, and/or Other Restrictions
ITSS 3300 and (MATH 1326 or MATH 2414 or MATH 2419) and (MATH 2333 or OPRE 3333 or MATH 2418 or MATH 2415 or CS 2305)

Course Description
Network and Information Security (3 semester credit hours) With the advances in information technology, 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.

Student Learning Objectives/Outcomes
Students who complete this course will have a greater appreciation of security risks and controls, will learn common vocabulary to help them communicate in business, will increase their professional marketability, and will develop skills including business writing, presentations, and teamwork. **All registered students are welcome in the class, whether planning a career in information security, or not.**

Students will learn that business professionals who appreciate information security risks and controls can better protect themselves, the organizations they serve, and the communities in which they live.

We will strive to achieve the following learning outcomes for all students:

- 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.
- Develop solutions for networking and security problems, balancing business concerns, technical issues and security.
- 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.
- Explain and apply key cryptography, key management, digital signatures, and authentication protocols.

Required Textbooks and Materials
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. Guest presenters may join the class at various times, based on their availability. **Each student's commitment to participation, watching assigned videos, and reading assigned materials is critical to successful completion of the course.**

Technical Requirements
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.

Course Access and Navigation
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.

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.

Communication
This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool will also be used during the semester. For more details, please visit the Student eLearning Tutorials webpage for video demonstrations on eLearning tools.

Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

Distance Learning Student Resources
Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the eLearning Current Students webpage for more information.

Service Unavailability or Other Technical Difficulties
The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected service outage or any unexpected technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. 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.

Media / Films Referenced In Class

Media and films shared in the class are for educational purposes, in the interest of learning and the public good. The Copyright Act 17 U.S. §110(1) (face to face teaching exemption) allows for the performance or display of video or film in a classroom where instruction takes place with enrolled students and related to the curricular goals of the course.

Content may contain language or topics that viewers will find offensive – intended for adults only who are enrolled in the course. All content and claims are the responsibility of the filmmakers. No copy or distribution allowed unless discussed and approved by Professor Howe.

Students may be asked to listen to the Daily Cyber Threat Brief webcast presented by Dr. Gerald Auger at various times throughout the semester. Additional details will be shared in class. All material displayed and comments made by Dr. Auger are his own intellectual property and may not reflect the analysis or opinion of Professor Howe. https://www.youtube.com/@SimplyCyber

Academic Calendar

CLASS # / DATES	TOPIC/LECTURE	VIDEO / READING	ASSESSMENT / ACTIVITY	DUE DATE
1 1/21-1/27	Class 1/22 -Introduction to course -History and trends -Fundamentals of information security / risk briefing -Pace of change -Role of the security professional -Ethical / Legal / Economic lenses -Career paths -Syllabus review	-Read Verizon DBIR -Read Splunk link		1/29
2 1/28-2/3	Class 1/29 -Securing the organization -Physical security -Configurations -Patching -Standards	-Study Classes 1&2, and DBIR document, for Quiz 1	Quiz 1	2/2-2/4
3 2/4-2/10	Class 2/5 -Introduction to networking and computing -Historical context -Network components, ports, DNS	-Study Class 3 for Quiz 2	Quiz 2	2/9-2/11
4 2/11-2/17	Class 2/12 -Binary calculation -3-way handshake -SYN flood -Firewall	-Study Class 4 for Quiz 3	Quiz 3	2/16-2/18
5 2/18-2/24	Class 2/19 -Hardening -OSI model -Identity & Access Management -Federation -2FA / MFA	-Study Class 5 for Quiz 4	Quiz 4	2/23-2/25

CLASS # / DATES	TOPIC/LECTURE	VIDEO / READING	ASSESSMENT / ACTIVITY	DUE DATE
6 2/25-3/2	Class 2/26 -User awareness -Social engineering -Phishing -Account takeover -Password repositories -Malware -Cyber warfare -Zero-day malware -Nation state conflict	-Watch film: Zero Days -Study Class 6 and film for Quiz 5	Quiz 5	3/1-3/3
7 3/3-3/9	Class 3/4 -Encryption -VPN -Blockchain -Software development life cycle -Databases	-Study all class material through Class 7 for Midterm Exam	Midterm Exam	3/6-3/8 (Midterm average grades turned in by 3/9)
3/10-3/16 (Spring Break)	3/11 (no class this week)			
8 3/17-3/23	Class 3/18 -Vulnerability assessment & penetration testing -Web application vulnerabilities (OWASP) -Bug bounty programs	-Study Class 8 for Quiz 6	Quiz 6	3/22-3/24
9 3/24-3/30	Class 3/25 -Event log monitoring -Incident response -Forensics, evidence, chain of custody -Law enforcement interaction -Jurisdiction -Obligation to report -Ransom / extortion scenarios -Cyber insurance -Security operations center (SOC) -Honeypot, IDS	-Read Equifax incident report -Study Class 9 and incident report for Quiz 7	Quiz 7	3/29-3/31

CLASS # / DATES	TOPIC/LECTURE	VIDEO / READING	ASSESSMENT / ACTIVITY	DUE DATE
10 3/31-4/6	Class 4/1 -Business continuity planning & disaster recovery -Backups -Redundancy -Data centers -Cloud services -Virtualization -Vendor management, contract negotiation	-Watch film: Office Space -Study Class 10 and film for Quiz 8	Quiz 8	4/5-4/7
11 4/7-4/13	Class 4/8 -Governance, risk & compliance -Laws, application of existing precedent -Frameworks, mapping controls -Risk-based vs. compliance-based security -Consumer protection -Clickthrough agreements -Policy writing	-Watch film: Snowden -Study Class 11 and film for Quiz 9	Quiz 9	4/12-4/14
12 4/14-4/20	Class 4/15 -Decision making -Return On Investment -Qualitative vs. Quantitative Risk -Ethical / Legal / Economic lenses -Roles & responsibilities / organization structure -Low-cost security program	-Watch department structure video -Study Class 12 and video for Quiz 10	Quiz 10	4/19-4/21
13 4/21-4/27	Class 4/22 (no class this week – recorded content to be provided) -Internal audit -Audit readiness -Project Management	-Study Class 13 for Quiz 11	Quiz 11	4/26-4/28
14 4/28-5/4 (Last day of classes is 5/3)	Class 4/29 -Course summary -Future tech, AI, tech good or evil, impact on society -Career planning	-Study all class material for Final Exam	Final Exam	(Specific dates and times to be announced)
5/5-5/11 (Final exams 5/6-5/10)	Final Exam (specific dates and times to be announced)		Provide Course Evaluation Feedback	(Semester grades turned in by 5/16)

Grading Policy
Grading will be performed in a manner consistent with rules and policies in effect at UT Dallas. Letter grades will be determined according to the following percentages. In the event of fractions, grades ending between .1 and .4 will be rounded down, whereas between .5 and .9 will be rounded up.

A+	97% to 100% and above
A	93% to 96%
A-	90% to 92%
B+	87% to 89%
B	83% to 86%
B-	80% to 82%
C+	77% to 79%
C	73% to 76%
C-	70% to 72%
D+	67% to 69%
D	65% to 66%
F	64% and below

A grading system will be used to promote commitment to learning the material, create accountability, and assist students with time management. Grades will be calculated according to the following weights.

20%	Class Attendance (Individual)
40%	Quizzes (Individual)
20%	Midterm Exam (Individual)
20%	Final Exam (Individual)

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.

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 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.**

During some semesters, collaborative teams will be assigned to work on homework and/or projects. This semester, we have no plans to assign teams.

Course Policies

Make-up exams

Students who do not complete assignments within the scheduled timeframe will receive a zero unless an alternative schedule is coordinated with, and approved by, Professor Howe. The privilege of scheduling an alternative time is at the discretion of Professor Howe.

Extra Credit

Opportunities for extra credit will be considered and approved only at the discretion of Professor Howe and might not be offered this semester. Adjustments to final calculated grades are only at the discretion of Professor Howe.

Late Work

Homework assignments, if assigned, must be submitted on time to receive full credit. Specific details of each homework assignment will be provided in separate documents. Homework is to be submitted electronically using approved UT Dallas systems and must be received by 11:59pm on the assigned date. Late homework will lose one letter grade per day and will be counted as a zero after four days.

Special Assignments

Special assignments may be provided during the semester, at the discretion of Professor Howe.

Class Participation

Though participation during class is not explicitly listed as a portion of the grade, **all students are expected to engage in collaborative discussions and activities if reasonably feasible**, including email threads, online discussion boards, team meetings, and live presentations. Each student's final semester grade may be impacted by their participation, or lack thereof.

Classroom Citizenship

The instructor, guests, and students come together to learn from each other. No one knows everything about a topic and there is always more to learn. Successful students will learn to be resourceful decision makers. Students should leverage available resources and collaborate with other professionals to solve problems. **Debate, questions, and the consideration of all viewpoints is accepted and expected.**

Auditing

Opportunities exist for auditing the class and these will be coordinated with the Office of the Registrar. Auditing requests must be reviewed and approved by Professor Howe. Individuals auditing the course must demonstrate professionalism and not be disruptive to the successful delivery of the class.

Accommodations

In some cases, students have been approved for additional support or accommodations in the interest of their successful participation in the course. Please contact Professor Howe to discuss such support or accommodations. In some cases, accommodations will be coordinated with the Office of Student AccessAbility. Every effort will be made to comply with the approved accommodations – students of all background, capabilities, personal identities, and interests should feel welcome in the class.

Comet Creed
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:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

Academic Support Resources
The information contained in the following link lists the University's academic support resources for all students.

Please go to Academic Support Resources webpage for these policies.

UT Dallas Syllabus Policies and Procedures
The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to UT Dallas Syllabus Policies webpage for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.