COLLEGE of INFORMATION	**Department of Information Science** **DTSC 4430 Cloud Security for Data Scientists (Spring 2026)**

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Course Information

Prerequisite: DTSC 3030 Cyber Ethics for Data Scientists

Course Description:
3 credit hours. This online course provides an overview of important cloud computing concepts, associated security challenges, and strategies for protecting data in the cloud. The primary focuses will be on understanding cloud threats and breaches, while applying security principles to mitigate cloud incidents. Through practical assignments, the students can gain hands-on experience in applying cloud security principles, with the goal of ensuring effective data protection within cloud-based systems.

Course Objectives:
By the end of this course, students will be able to:
1. Describe the concepts of cloud computing.
2. Explain the building blocks of cloud services and their security issues.
3. Identify the main cloud security standards or guidelines and explain their use for compliance and governance.
4. Discuss the similarities and differences addressing security challenges among the major cloud service providers.
5. Describe the role of cyber threat intelligence in cloud security.
6. Discuss the cloud incidents and cloud security best practices
7. Recognize future trends in cloud security.

Textbook:

Cloud Security Alliance (2024) *Certificate of Cloud Security Knowledge (CCSK) Official Study Guide (version 5)*.

*Recommended Text:
- Estrin E. (2022). *Cloud Security Handbook: Find out how to Effectively Secure Cloud Environments Using AWS, Azure and GCP*. Packt Publishing Limited.

Course Modules and Topics:

Modules	Topics
1	Cloud Computing Concepts
2	Cloud Governance, Risk, and Compliance
3	Cloud Identity and Access Management
4	Cloud Infrastructure and Networks
5	Cloud Workload Security
6	Data Security
7	Application Security and Cloud Resilience
8	Cloud Security and Emerging Technologies/Strategies

Assignments and Grading:

Assignments	Percentage
Discussions	24%
Quiz	16%
Midterm Exam	10%
AWS Educate Online Training	10%
Final Project: Cloud Security and Emerging Technologies (AI or Zero Trust)	25%
Final Exam	15%

Course Schedule (subject to change at instructor's discretion)

No.	Week	Activities	Assignment Due
1	1/12 ~ 1/18	Welcome and Course Introduction Self-Introduction (Canvas Discussion Board)	1/18
2	1/19 ~ 1/25	Module 1 Discussion post (Canvas Discussion Board) and Quiz	1/25

No.	Week	Activities	Assignment Due
3	1/26 ~ 2/1	Module 2 Discussion post (Canvas Discussion Board) and Quiz	2/1
4	2/2 ~ 2/8	Module 3 Discussion post (Canvas Discussion Board) and Quiz	2/8
5	2/9 ~ 2/15	Module 4 Discussion post (Canvas Discussion Board) and Quiz	2/15
6	2/16 ~ 2/22	Module 5 Discussion post (Canvas Discussion Board) and Quiz)	2/22
7	2/23 ~ 3/1	Module 6 Discussion post (Canvas Discussion Board) and Quiz	3/1
8	3/2 ~ 3/8	**Final Project Proposal**	3/8
9	3/9 ~ 3/15	**Spring Break (no classes)**	
10	3/16 ~ 3/22	**Midterm Exam**	3/22
11	3/23 ~ 3/29	Module 7 Discussion post (Canvas Discussion Board) and Quiz	3/29
12	3/30 ~ 4/5	Module 8 Discussion post (Canvas Discussion Board) and Quiz	4/5
13	4/6 ~ 4/12	**AWS Educate Training**	4/12
14	4/13 ~ 4/19	**Final Project Presentation**	4/19
15	4/20 ~ 4/26	**Final Exam**	4/26
16	4/27 ~ 5/3	**Guest Lecture (Ms. Wendy Wang from Amazon Web Services)** **Final Project Report**	TBD 5/3

Technical Requirements/Assistance

The following information has been provided to assist you in preparation for the technological aspects of the course.

Understanding and use of the following are required:
- Canvas online course software
- Slide presentation software (.ppt files)
- Word processing software (.docx files)
- Internet search, navigation, and application of new programs
- University of North Texas online library and databases - https://library.unt.edu/

The University Information Technology (UIT) Helpdesk offers helpful resources and addresses any issues that might arise with Canvas (http://www.unt.edu/helpdesk/).
1. Be sure you are using a supported web browser. Canvas supports the current and first previous major releases of the following browsers:
  - Chrome 70 and 71
  - Firefox 63 and 64 (Extended Releases are not supported)
  - Flash 31 and 32 (used for recording or viewing audio/video and uploading files)
  - Internet Explorer 11 (Windows only—functionally supported; may exhibit slight visual differences from other browsers, but these differences do not restrict product functionality)
  - Edge 42 and 44 (Windows only)
  - Respondus Lockdown Browser (supporting the latest system requirements)
  - Safari 11 and 12 (Macintosh only)

Commonly used 3rd party plug-ins you may need to install for this course:
  - Acrobat Reader
  - Real Player
  - Flash
  - Shockwave
  - Windows Media Player

2. Additional help for using Canvas
You will need word processing software such as Word 2010. Acceptable file formats include .txt, .rtf, .doc, and .docx. https://community.canvaslms.com/docs/DOC-10554-4212710328

3. Student Support
The University of North Texas provides student technical support in the use of Canvas and supported resources. The student help desk may be reached at:
Website: http://www.unt.edu/helpdesk/
Phone: 940.565-2324
In Person: Sage Hall, Room 330

Regular hours are maintained to provide support to students. Please refer to the website for updated hours.

Getting Started with Canvas

Access and Log in Information
This course was developed and will be facilitated utilizing the University of North Texas' Learning Management System, Canvas. To get started with the course, please go to: https://unt.instructure.com/. You will need your EUID and password to log in to the course. If you do not know your EUID or have forgotten your password, please go to: https://ams.unt.edu/.

Canvas Student Guide
As a student, you will have access to the "Canvas Student Guide" tutorial via Canvas. You are strongly encouraged to become familiar with the tools and tutorials within the student orientation to better equip you to navigate the course.

Accessing Grades
As assignments are graded, grades will be posted in the class grade book. Effort will be made to complete grading and post grades expeditiously, so please be patient. If a student has a question about a grade, please consult the rubric first before contacting the instructor.

Assignment Submission Instructions
Please do not wait until the last minute to post assignments as technical problems may occur.

IT Resources

- UNT Portal: http://my.unt.edu
- UNT Canvas Student Support:
  https://community.canvaslms.com/docs/DOC-10554-4212710328
- General access computer lab information (including locations and hours of operation) can be located at: https://computerlabs.unt.edu/
- UNT Library Information for Off-Campus Users:
  http://www.library.unt.edu/services/facilities-and-systems/campus-access
- UNT Computing and Information Technology Center
- Computer Lab at Discovery Park:
  https://itservices.engineering.unt.edu/computer-lab

Policies

Canvas (Instructure) Privacy Policy - Last Updated: November 17, 2017
Instructure, Inc. ("INSTRUCTURE") is committed to protecting your privacy. We have prepared this Privacy Policy to describe our practices regarding the personal information that may be collected from users of our websites, including https://www.instructure.com and

http://www.canvas.net and any other sites that link to this Privacy Policy ("SITE"), Instructure's Canvas iOS and Android Applications ("APPS"), and other related educational services ("SERVICES"). By submitting personal information through our Site, Apps, or Services, you expressly consent to the processing of your personal information in the U.S. in accordance with this Privacy Policy. The use of personal information collected through our service shall be limited to the purposes described in this Privacy Policy.
https://www.instructure.com/policies/privacy

Google Privacy Policy
Access here: https://policies.google.com/privacy

YouTube Privacy Policies
Access here: https://www.youtube.com/yt/about/policies/#community-guidelines

Canvas Accessibility Statement
https://community.canvaslms.com/docs/DOC-2061-accessibility-within-canvas

Google Accessibility Statement
https://www.google.com/accessibility/#!#google

YouTube Accessibility - Using YouTube with a Screen Reader
https://support.google.com/youtube/answer/189278?hl=en

UNT Policies

Academic Integrity Policy
Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

ADA Policy
UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time; however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website (https://disability.unt.edu/)

Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004)

The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

Emergency Notification & Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

Retention of Student Records

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student's records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University's policy. See UNT Policy 10.10, Records Management and Retention for additional information.

Acceptable Student Behavior

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. Visit UNT's [Code of Student Conduct](https://deanofstudents.unt.edu/conduct) to learn more.

Access to Information - Eagle Connect

Students' access point for business and academic services at UNT is located at: https://my.unt.edu/. All official communication from the University will be delivered to a student's Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail [Eagle Connect](https://it.unt.edu/eagleconnect) (https://it.unt.edu/eagleconnect).

Sexual Assault Prevention

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT's Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim's compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565- 2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

Important Notice for F-1 Students taking Distance Education Courses:

Federal Regulation

To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the Electronic Code of Federal Regulations website. The specific portion concerning distance education courses is located at "Title 8 CFR 214.2 Paragraph (f)(6)(i)(G)" and can be found buried within this document: http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITLE=8&PART=214&SECTION=2&TYPE=TEXT

The paragraph reads:

(G) For F–1 student enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken on-line or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to completion of the class. An on-line or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F–1 student's course of study is in a language study program, no on-line or distance education classes may be considered to count toward a student's full course of study requirement.

University of North Texas Compliance

To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experience integral to the completion of this course.

If such an on-campus activity is required, it is the student's responsibility to do the following:
1. Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course.
2. Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISSS has a form available that you may use for this purpose.

Because the decision may have serious immigration consequences, if an F-1 student is unsure about his or her need to participate in an on-campus experiential component for this course, s/he should contact the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email internationaladvising@unt.edu) to get clarification before the one-week deadline.

Academic Support & Student Services

Student Support Services
Mental Health
UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:
- Student Health and Wellness Center (https://studentaffairs.unt.edu/student-health-and-wellness-center)
- Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
- UNT Care Team (https://studentaffairs.unt.edu/care)
- UNT Psychiatric Services (https://studentaffairs.unt.edu/student-health-and-wellnesscenter/services/psychiatry)
- Individual Counseling (https://studentaffairs.unt.edu/counseling-and-testing-services/services/individualcounseling)

Chosen Names
A chosen name is a name that a person goes by that may or may not match their legal name. If you have a chosen name that is different from your legal name and would like that to be used in class, please let the instructor know. Below is a list of resources for updating your chosen name at UNT.
- UNT Records
- UNT ID Card
- UNT Email Address
- Legal Name

*UNT euIDs cannot be changed at this time. The collaborating offices are working on a process to make this option accessible to UNT community members.

Pronouns
Pronouns (she/her, they/them, he/him, etc.) are a public way for people to address you, much like your name, and can be shared with a name when making an introduction, both virtually and in-person. Just as we ask and don't assume someone's name, we should also ask and not assume someone's pronouns.
You can add your pronouns to your Canvas account so that they follow your name when posting to discussion boards, submitting assignments, etc.

Below is a list of additional resources regarding pronouns and their usage:

- [What are pronouns and why are they important?](#)
- [How do I use pronouns?](#)
- [How do I share my pronouns?](#)
- [How do I ask for another person's pronouns?](#)
- [How do I correct myself or others when the wrong pronoun is used?](#)

Additional Student Support Services

- Registrar (https://registrar.unt.edu/registration)
- Financial Aid (https://financialaid.unt.edu/)
- Student Legal Services (https://studentaffairs.unt.edu/student-legal-services)
- Career Center (https://studentaffairs.unt.edu/career-center)
- Multicultural Center (https://edo.unt.edu/multicultural-center)
- Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
- Pride Alliance (https://edo.unt.edu/pridealliance)
- UNT Food Pantry (https://deanofstudents.unt.edu/resources/food-pantry)

Academic Support Services

- Academic Resource Center (https://clear.unt.edu/canvas/student-resources)
- Academic Success Center (https://success.unt.edu/asc)
- UNT Libraries (https://library.unt.edu/)
- Writing Lab (http://writingcenter.unt.edu/)