

Teaching Team

 **Instructor:** Dr. Zeynep Orhan

 **Lectures:** Twice a week (seven meetings). We will complete topics earlier, but you will have more time to complete the assignments and projects (see the schedule)

Dates:

- October 12: Monday
- October 16: Friday
- October 19: Monday
- October 23: Friday
- October 26: Monday
- October 30: Friday
- November 2: Monday

Time: 5:00 PM - 7:00 PM (CT) via Zoom link on Canvas

 Office Hours:

- **In-person at GAB 110B and Virtual via Zoom link on Canvas**
Tuesday 10:00 AM – 11:00 AM (CT) **AND** Tuesday 2:30 PM – 3:30 PM (CT)
- **Virtual via Zoom link on Canvas**
Friday 8:00 PM – 9:00 PM (CT) or by appointment

 **Email:** Zeynep.Orhan@unt.edu

Welcome to ADTA 5860. I am so excited to have you in this class and I look forward to working with all of you throughout the course.



About the Professor: Dr. Orhan has her MS and PhD degrees from Graduate School of Bilkent University, Ankara, Turkey and Istanbul University, Istanbul, Turkey. Her main fields of research are machine learning (ML), natural language processing (NLP), and data analytics. So far, she taught at Computer Engineering Departments of Bilkent University, Fatih University, and Istanbul University, Turkey, Information Technologies Department of International Burch University, Bosnia and Herzegovina, Computer Science Department of Union College, New York, and ADTA of UNT, Texas. She has been developing applications mostly in Turkish/English that analyze the widely available and accessible huge amount of unstructured textual and non-traditional data produced in the digital environment and provide user friendly, practical, and time-saving solutions. Sentiment analysis and opinion mining systems, responsible and ethical AI, healthcare (diagnosis, follow-up, treatment) applications, e-education tools, e-government services, and related intelligent strategy systems are in her research agenda.



Your success is our success. We are here to help the students facilitate their learning process and to grow, gain knowledge and skills. Our goal is to support students throughout their academic journey.

Communication

- The preferred way to contact me is via your **UNT email (DO NOT use the Canvas email tool or Teams, there are many problems with them and they won't be responded!!!).**
- Emails will be answered as quickly as possible, usually in **one business day or less.**
- I understand that most graduate students work on assignments on the weekends; so, I will try to check my email **until 5:00 PM during the weekdays and until 12:00 PM on Saturdays and Sundays** as well, but a response is not guaranteed.
- **Urgent matters will be answered before Monday.**
- When sending an email, you are required to include
 - **your full name and ID**
 - the **course and section** you are in
 - the **main point of your email in the subject line**
 - **any screenshot or documentation attached** so that I can prioritize your message.
- If I have not responded within **one business day**, please **resend** your message to my **UNT** email address as student emails may occasionally be routed to the junk folder.
- I expect emails to **follow professional etiquette standards** as these are formal communications between the instructor and the student.
- If your email is related to a course activity/assignment, please **attach appropriate files, or include screenshots.**
- Please let me know **in advance (24 hrs.)** if you intend to have an online meeting.
- Here is a great website provided by CLEAR to give you some communication tips for communicating online: CLEAR has [a webpage for students that provides Online Communication Tips \(Links to an external site.\)](#)



Course Description



Required prerequisite courses: ADTA 5340

Explores the ethical aspects of data analytics and artificial intelligence. Establishes the ethical foundations of data practices and examines issues like transparency, privacy, and legal compliance. Guides the analysis of predictive models, emphasizing responsible data frameworks and ethical AI development by case studies and hands-on projects.

Course objectives

Upon successful completion of this course, students will be able to:

- **Understand** the historical evolution and ethical importance of data analytics.
- **Review** various data analytics models to grasp the need for transparency.
- **Investigate** privacy, legal, and ethical issues in AI, with an emphasis on international regulations.
- **Gain** knowledge of the responsible data framework and recognize its importance in promoting ethical AI practices.
- **Conduct** projects that emphasize fairness, equity, and clarity in data analysis.
- **Analyze** case studies to identify successful and problematic practices in data analytics.
- **Audit** AI models, focusing on equity and interpretability to ensure ethical compliance.
- **Assess** global regulations and guidelines to understand their impact on data analytics and AI.

Course topics

- Introduction to Responsible Data Analytics
- Predictive Models and Data Challenges
- Ethical and Legal Considerations in AI
- Responsible Data Practices
- Model Interpretability and Transparency
- Auditing and Bias Detection
- Addressing AI Risks and Regulations.



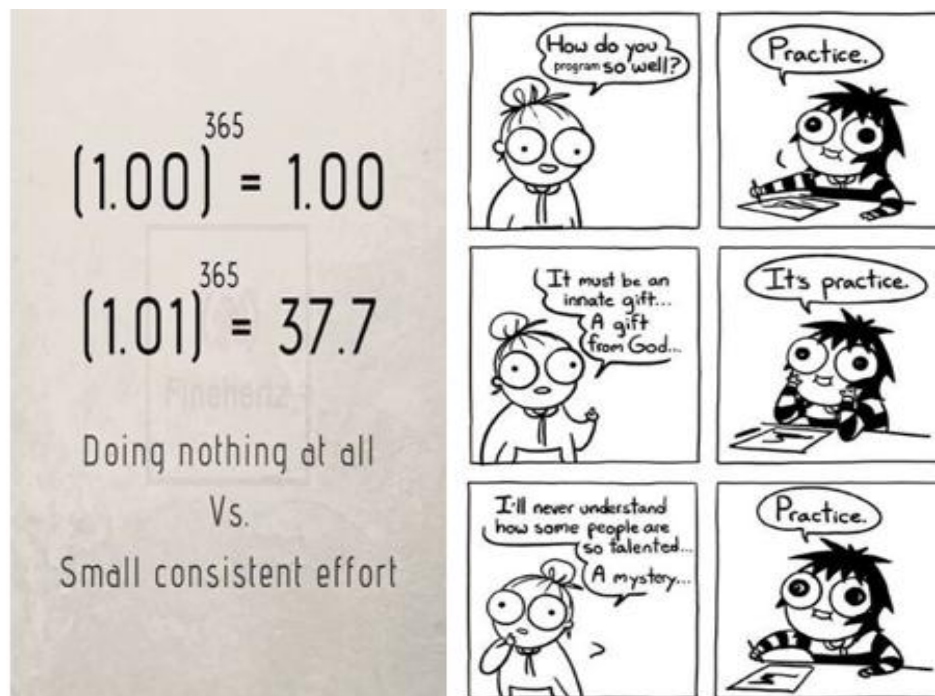
Course Structure

- The course is **online** in an 8-week format.
- We will meet **via Zoom every week** and **the lectures will be recorded**.
- Besides attending the classes, students are **expected to** participate in various online activities such as
 - reading textbook and articles,
 - watching videos,
 - participating in asynchronous discussions
 - completing assignments and exams.

Student Effort

To be successful in this course you will need to:

- Devote a considerable amount of time per week to completing the course requirements.
- Check the deadlines of activities and plan to complete/submit before the deadline.
- Be prepared to face last minute glitches.
- Use your time carefully for
 - reading the assigned chapters and supplementary resources,
 - watching videos
 - working on assignments and exams,
 - working on the group project,
 - reflecting on the material covered,
 - participating in other activities throughout the course.
- Don't hesitate to ask for help and always communicate.
- Utilize office hours
- Make sure to read your assigned readings, be punctual,
- Save all your assignments (and back them up!)
- Learn how to use Python and given packages/libraries.
- Cite sources, giving credit to where you obtain information.
- Do not commit academic integrity violations!



Academic Success Resources

UNT strives to offer you a high-quality education and a supportive environment, so you learn and grow. As a faculty member, I am committed to helping you be successful as a student. To learn more about campus resources and information on how you can be successful at UNT, go to unt.edu/success and explore unt.edu/wellness. To get all your enrollment and student financial-related questions answered, go to scrappysays.unt.edu.

Required/Recommended Materials

- **Required textbook:**
 - Responsible Data Science: Transparency and Fairness in Algorithms 1st Edition by Grant Fleming, Peter C. Bruce, Publisher: Wiley; 1st edition (May 11, 2021), ISBN-10: 1119741750, ISBN-13: 978-1119741756
- **Recommended materials (Optional):** These materials are NOT required, but you might find them beneficial for extra reinforcement of the topics.
 - Agarwal, Sray - Mishra, Shashin. Responsible AI Implementing Ethical and Unbiased Algorithms. Switzerland: Springer, 2021, eBook ISBN 978-3-030-76860-7 [Access ebook via DOI](#)
 - O'Neil, C. (2017). Weapons of Math Destruction. Harlow, England: Penguin Books. [View book overview](#)
 - Noble, S. U. (2018). Algorithms of oppression: How search engines reinforce racism. New York University Press.
 - Eubanks, V. (2018). Automating inequality: how high-tech tools profile, police, and punish the poor. First edition. New York, NY, St. Martin's Press.
 - Documentary: Coded Bias [Visit official website](#)
 - Data Science Alliance. 2023. The Framework for Responsible Data Science Practices. [View document](#)
 - Google AI. Responsible AI Practices. [View resource](#)
 - Guiding Principles of Responsible Data Science: How to Build a World Where Data Helps Without Harm. [Open white paper](#)
 - PwC. PwC's Responsible AI. [View overview](#)
 - European Union's Proposed Framework, Regulatory framework proposal on artificial intelligence, [View policy page](#)

Online Access to Course Materials and Other Requirements

- This course uses the **CANVAS Learning Management System**.
- To get started with the course, please visit
 - [CANVAS](#)
 - You can access student guides on Canvas at this site. You will need your **EUID and password** to login to the course.
 - If you do not know your EUID or have forgotten your password, please go to: [UNT Account Management System](#)

- The Canvas Student app has a **mobile version of Canvas** that helps students stay current with their courses anywhere. Download the Canvas Student app on Android and iOS devices.
 - iOS devices, see: [How do I download the Canvas Student app on my iOS device?](#)
 - Android devices, see: [How do I download the Canvas Student app on my Android device?](#)
- The student will access and follow all course instructions found in the syllabus, announcements, assignments, and all other class-related documents.
- I will use the CANVAS learning management system to post **important announcements, supplementary materials, and grades**.
- You must check **CANVAS regularly**.
- You are responsible for being aware of information and content posted to the course website in CANVAS.
- It is highly recommended that you **set up notifications in CANVAS to stay informed of course news and other course updates and adjust your CANVAS account settings** to receive essential information directly to **your email account or cell phone**.
- You are expected to check your **UNT email every day**, as I will occasionally send emails for important announcements or potential changes in the schedule.
- **Missing an important email announcement because you do not check your email regularly is not a valid excuse!**
- The student **must complete all the class assignments in the time frame specified in the class documents, including the course calendar to participate effectively in-class activities**. Please note **NO extension will be granted unless prearranged with the professor**.

Technology Requirements

This course has digital components. **To fully participate in this class**, students will need

- a laptop/computer with
- a webcam,
- a mic and
- reliable internet access to reference content
- on the Canvas Learning Management System
- **Office 365** for access to UNT email and to Microsoft applications that we will use regularly (Outlook, Teams, Word, Excel, PowerPoint, etc.).
- **CANVAS** for accessing course materials and announcements.
- **Python and Jupyter Notebook**.

While students can complete some work on their smartphones, this will not be sufficient in all instances, given the limitations of mobile devices. Hence, access to a computer is essential. If circumstances change, you will be informed of other technical needs to access course content. Information on how to be successful in a digital learning environment can be found at [Learn Anywhere](#)

Assessing Your Work

This course uses a percentage-based grading system. Grades are based on discussions, workshop case studies, the course project, and the final paper prepared for the course proceedings.

Course Grading Breakdown		
Assessment Category	Description	% of Total
Discussions	Graded discussions will connect concepts from two modules. Students will respond to two or three discussion questions. Responses to classmates are optional.	20%
Case Studies	Each group will select one responsible AI or data analytics case study for the workshop. Groups will present the case, explain the ethical issues, and participate in workshop feedback and questions for other groups.	30%
Project	Students will complete a responsible data analytics project. The project may apply responsible data analytics principles to a selected problem, or it may analyze an existing project with ethical, fairness, privacy, transparency, or accountability concerns and propose solutions.	30%
Proceedings Paper	Students will prepare a short academic-style paper based on their project or case study. Selected papers may be included in a course proceedings document.	20%

Your letter grade will be determined by the following overall grading scheme **(NO ROUNDING FOR ANY REASON)**:

Letter Grade Scale		
Letter Grade	Percentage Range	General Description
A	90–100%	Excellent work that goes beyond minimum expectations.
B	80–89%	Good work that meets expectations with strong quality.
C	70–79%	Acceptable graduate-level work that meets basic assignment requirements.
D	60–69%	Below-average work that does not fully meet assignment requirements.
F	0-59%	Unacceptable or incomplete work.

Please **add an honor code to your assignments** as follows: *"I commit myself to honor, integrity, and responsibility as a student representing the University of North Texas community. I understand and pledge to uphold academic integrity as set forth by UNT Student Academic Integrity Policy, 06.003. I affirm that the work I submit will always be my own, and the support I provide and receive will always be honorable."*



If you do believe that any group member does not contribute to your group work or if you have a conflict with some of them, you have the option to report it by sending a message to all group members including me and leaving the group one week prior to the final submission. If this happens everyone will work on the same topic in separate teams or alone and submit their own versions.

All assignment components are **due no later than 11:59 pm (Central Time) on the designated deadline**. Any assignment submitted after the due date will receive a **ZERO**.



Course Schedule

M	Start	End	Topics	Assignments
1	Oct 12	Oct 18	- Module 1: Foundations of Responsible Data Analytics and AI - Module 2: Predictive Models and Black-Box Algorithms	- Introduction Discussion (non-graded) - Discussion 1
2	Oct 19	Oct 25	- Module 3: Model Performance and Fairness Issues - Module 4: Model Limitations and Data Quality	Discussion 2
3	Oct 26	Nov 1	- Module 5: AI Harms, Bias, and Unintended Consequences - Module 6: Legal, Ethical, and Regulatory Landscape	- Discussion 3 - Project and Case Study Team Selection (non-graded)
4	Nov 2	Nov 8	- Module 7: Responsible Data Science Framework - Module 8: Interpretability and Explainable AI	Discussion 4
5	Nov 9	Nov 15	- Module 9: Interpretability Applications and Project Preparation - Module 10: Beginning a Responsible Data Project	- Discussion 5 - Project Topic Selection and Proposal (non-graded)
6	Nov 16	Nov 22	- Module 11: Auditing Models and Fairness - Module 12: Advanced Auditing and Bias Mitigation	Discussion 6
7	Nov 23	Nov 29	Thanksgiving Break - No Classes	No assignments due
8	Nov 30	Dec 6	Module 13: Case Study and Project Workshop	- Case Study Presentation - Project Progress Submission - Peer Feedback Participation
9	Dec 7	Dec 11	Final Project Presentations and Final Paper Completion	- Project Presentation - Final Proceedings Paper Submission

Note: Assignment submissions are due Sundays before 11:59 PM CST unless stated otherwise.

Note: The students will be notified by Eagle Alert if there is a campus closing that will impact a class and the calendar is subject to change. You may refer to the [Campus Closures Policy](#).

Note: There may be changes due to unforeseen circumstances

Course Policies

Late Work Policy

Assignment due dates are posted in the syllabus and on Canvas. Any changes to due dates will be updated on Canvas and communicated in an announcement. All work for this course is due no later than 11:59 pm (Central Time) on the designated date.

NO late submission of assignments, exams, or project deliverables.

Late work will be assigned ZERO unless previously approved by the instructor.

NO EXCEPTIONS!

The University is committed to providing a reliable online course system to all users. However, in the event of **an unexpected server outage or any unusual technical difficulty**, which prevents students from completing a time sensitive assessment activity, the instructor will **extend the time windows and provide appropriate accommodation** based on the situation. Students should

- **immediately report any problems to the instructor and**
- **contact the UNT Student Help Desk:**
 - helpdesk@unt.edu or
 - **940.565.2324** and
 - **obtain a ticket number.**

The instructor and the UNT Student Help Desk will work with the students to resolve any issues at the earliest possible time.

Make-Up Policy

- **No make-up assignment or exams** will be offered except for being approved in advance.
- **Students will be required to provide the necessary documentation.**

Attendance

The students who attend class are more likely to be successful. You should attend every class unless you have a university excused absence such as active military service, a religious holy day, or an official university function as stated in the [Student Attendance and Authorized Absences Policy \(PDF\)](#). Because this course involves collaboration, participation is essential to learning. Our project-based activities require you to be actively engaged in discussions and group work. I understand tardiness and absences may occur. If you are late to class, please drop me an email to let me know the circumstances. If you must miss class, please let me know prior to your absence. Your safety and well-being are important to me.

Grade Disputes

- You are required to **wait 24 hours** before contacting me to dispute a grade.
- Within that time, I expect that you will review the assignment details and reflect on the quality of the work you turned in.

- If you would still like to meet, **email me** to set up a meeting briefly describing the issue.
- You **should come to the scheduled meeting with specific examples** that demonstrate that you should earn a higher grade than you received.
- **If you miss your scheduled meeting or you are late, you forfeit your right** to a grade dispute.
- **If you do not contact me to schedule a meeting within 4 days of receiving your grade, you also forfeit your right** to a grade dispute.

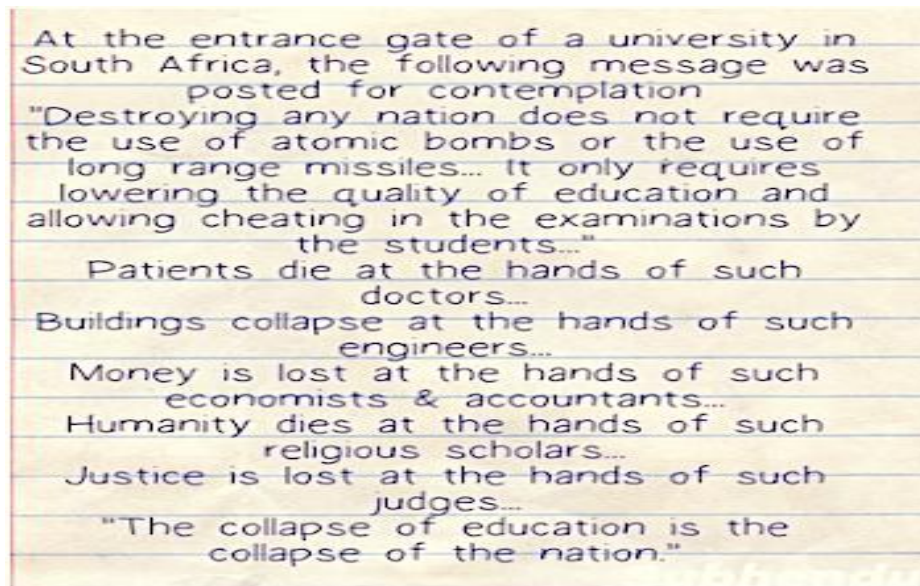
Extra Credit

There can be extra credit opportunities in this course. You will be notified via Canvas announcements

Syllabus Change Policy

While the plan is to follow this syllabus as written, it is reasonable to expect that adjustments will be made, if necessary, due to events that are outside of my control. Any changes will be posted in the announcement section of our Canvas course. If these changes affect assignments or due dates, they will be communicated via email as well.

Academic Integrity Policies



Every student in my class can improve by doing their own work and trying their hardest with access to appropriate resources. Students who use other people's work without citations will be violating UNT's Academic Integrity Policy. Please read and follow this important set of [guidelines for your academic success](#). If you have questions about this, or any UNT policy, please email me or come discuss this with me during my office hours. Turnitin is used as a tool to assist students in their scholarly writing to address plagiarism and usage of AI tools issues. All works submitted for credit must be original works created by the scholar uniquely for the class. It is considered inappropriate and

unethical, particularly at an advanced undergraduate/graduate level, to make duplicate submissions of a single work for credit in multiple classes, unless specifically requested by the instructor. It is also considered inappropriate and unethical to work together on individual assignments or share work that is to be created on an individual level. Work submitted at the senior/graduate level is expected to demonstrate higher order thinking skills and be of significantly higher quality than work produced at the lower undergraduate levels. It is recommended that students use the Turnitin resource to ensure their work is free of copyright issues prior to the final submission of their projects.

ADTA students must read and adhere to the university, department, and course Academic Integrity expectations. The consequences of violating Academic Integrity expectations are outlined below for ADTA students:

The consequences of violating Academic Integrity		
	Penalty	Other
1 st Academic Integrity Offense	The minimum penalty is 0 for the assignment AND a deduction of one letter grade from the final grade for the course. Other penalties may be assessed by the course instructor up to course failure , depending on the severity of the offense.	All Academic Integrity offenses will be reported to the UNT Academic Integrity Office.
2 nd Academic Integrity Offense	Suspension from the ADTA program.	A second offense is defined as a separately reported offense either in the same class as the 1 st offense or in a different course. Students suspended for a second Academic Integrity violation will not be allowed to enroll in ADTA courses for 1 calendar year. For students who had a single Academic Integrity violation prior to Fall 2023, a second violation will result in suspension from the ADTA program.
3 rd Academic Integrity Offense	Dismissal from the ADTA program.	Students committing a 3rd Academic Integrity offense will be dismissed from the program. For students who had multiple Academic Integrity violations prior to Fall 2023, any additional violation will result in dismissal from the ADTA program.

Policy on the Use of AI Tools in Coursework

- **General Use:** Students are encouraged to use AI tools to improve their learning and practice throughout this course. These tools can help students grasp complex concepts, engage in creative problem-solving, and get additional practice with course-related skills.
- **Graded Homework and Final Project:** The use of AI tools is permitted in completing graded homework assignments and the final project. However, students must follow these guidelines:
 - **Attribution:** Clearly state the use of AI tools in your submissions.
 - **Documentation:** Include a copy of the prompts used in interactions with AI tools as part of your assignment submission. This transparency is essential to maintain academic integrity and to allow for proper evaluation of your understanding and original contributions. **Citing only AI or ChatGPT is insufficient in any academic writing assignment (e.g., a project report, discussions, case studies, paper, etc.). Students must provide the references used - articles, textbook chapter, etc.**
- **Spell Checking and Grammar Corrections:** Students may use AI tools for spell checking and grammar corrections in any written work. Students are **allowed to improve writing originally produced by themselves** by using **AI tools to edit, paraphrase, and proofread**. However, **if the percentage attributed to AI by the AI writing detector for a graded assignment is scored high** (on the answers) then the work should be reviewed further for a possible plagiarism violation. It is required that students clearly state:
 - **Tools Used:** Identify the AI tools utilized for spell checking and grammar corrections.
 - **Application:** Specify the sections or parts of the assignment where these tools were used. This information should be explicitly stated in the assignment submission.
- **Responsibility:** Regardless of whether AI tools are used, students are completely responsible for ensuring the authenticity and **originality** of their work submitted for academic evaluation. This includes a full understanding of the material and the ability to discuss and defend all submitted work, irrespective of the tools used in its creation.

Rules of Engagement

Rules of engagement refer to the way students are expected to interact with each other and with their instructors. Here are some general guidelines:

- While the freedom to express yourself is a fundamental human right, any communication that utilizes cruel and derogatory language protected under applicable federal or state law will not be tolerated.
- Treat your instructor and classmates with respect in any communication online or face-to-face, even when their opinion differs from your own.
- Speak from personal experiences. Use “I” statements to share thoughts and feelings.

Try not to speak on behalf of groups or other individuals' experiences.

- Use your critical thinking skills to challenge other people's ideas, instead of attacking individuals.
- Avoid using all caps while communicating digitally. This may be interpreted as "YELLING!"
- Be cautious when using humor or sarcasm in emails or discussion posts as tone can be difficult to interpret digitally.
- Avoid using "text-talk" unless explicitly permitted by your instructor.
- Proofread and fact-check your sources.
- Keep in mind that online posts can be permanent, so think first before you type.
- See these [Engagement Guidelines](#) for more information.

Supporting Your Success and Creating an Inclusive Learning Environment

I value the many perspectives students bring to our campus. Please collaborate with me to create a classroom culture of open communication, mutual respect, and inclusion. All discussions should be respectful and civil. Although disagreements and debates are encouraged, personal attacks are unacceptable. Together, we can ensure a safe and welcoming classroom for all. If you ever feel like this is not the case, please let me know. We are all learning together. I also encourage you to review UNT's student [Code of Student Conduct](#) so that we can all start with the same baseline civility understanding

University Policies

You can access additional UNT policies on the [Student Support Services & Policies](#). I do encourage you to find opportunities to learn with and through others. Explore [Navigate's Study Buddy](#) tool to join study groups. Maximize your learning with our coaching staff at the Learning Center. Focus on areas where you are struggling in this course by attending scheduled study group sessions.

Unauthorized Aids During Examinations and Assessments

Students may use only those materials and resources that are expressly authorized by the instructor for a particular examination or assessment. Touching, holding, or accessing any unauthorized aid during the examination period constitutes a violation of the Student Code of Conduct, regardless of whether the aid is used.

Any item that may be considered an unauthorized aid must be kept out of view and in a closed container (e.g. zipped backpack, buttoned purse, etc.) during the entirety of the examination or assessment. Unless specifically authorized in writing by the instructor, prohibited aids include, but are not limited to:

- Mobile phones and smartphones
- Smartwatches and fitness trackers with communication, recording, or internet capabilities
- Tablets, laptops, and other computing devices
- Earbuds, headphones, and other audio devices

- Smart glasses, cameras, recording devices, and wearable technology
- Artificial intelligence (AI) tools, chatbots, and other generative AI technologies
- Notes, textbooks, study guides, formula sheets, or reference materials
- Any other device, material, or resource not expressly permitted by the instructor

Students are responsible for clarifying any questions about permitted materials before the examination begins.

Course Evaluation

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. **Student Perceptions of Teaching (SPOT)** is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course. Students will receive an email from "UNT SPOT Course Evaluations via System Notification" no-reply@iasystem.org with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey, they will receive a confirmation email that the survey has been submitted. For additional information, please visit the website [SPOT](#) or email spot@unt.edu. SPOT responses are anonymous to instructors/administrators, and they will be able to access results only after they have submitted final grades. Before final grade submission, instructors will not be able to see any responses.

F-1 Visa regulations

Federal regulations state that students may apply only 3 fully online semester credit hours (SCH) to the hours required for full-time status for [F-1 Visa \(DOC\)](#) holders. Full-time status for F-1 Visa students is 12 hours for undergraduates and 9 hours for graduate students.

ADA accommodation statement

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time; however, ODA notices of reasonable 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 reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information, refer to the [Office of Disability Access](#) website. You may also contact ODA by phone at (940) 565-4323.