

Syllabus

CSCE 4380 - Data Mining

Instructor Information

Instructor: Dr. Ryan Garlick, garlick@unt.edu Office Hours: Thursdays 12:00-1:30 via Zoom.

Office Hours: via Zoom. Please email at least 24 hours prior and I will send a Zoom link.

Teaching Assistant: Arup Datta: ArupDatta@my.unt.edu **Office Hours: Wednesdays 12-2pm. Zoom link:** <https://unt.zoom.us/my/arup.meetings> [Links to an external site.](#)

Office Hours: via Zoom link. Please email at least 24 hours prior.

*I reserve the right to modify course policies, the course calendar, assignment or project point values, and due dates.

Course Description, Structure, and Objectives

This course focuses on fundamental concepts, principles and techniques related to data mining. Data Mining

refers to the process of automatic discovery of interesting patterns and knowledge from large data collections,

including databases, data warehouses, document collections, and data streams. We will study important topics

of data mining, including data preprocessing, frequent pattern and association rule mining, correlation analysis,

classification and prediction, and clustering. Students will become acquainted with both the strengths and

limitations of various data mining techniques.

Prerequisite: CSCE 3110.

This course is online and will follow a weekly module format.

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

1. Gain familiarity with key data visualization and data pre-processing methods
2. Be able to confidently apply both supervised and unsupervised methods across a wide

range of real-
world scenarios

3. Gain a fundamental understanding of time series prediction and its applications
4. Understand the basic principles of spatial data mining and its applications
5. Gain in depth experience in applying a major language used in data mining

Required/Recommended Materials

All materials for the course are online and presented through Canvas. There is no textbook for the course.

ADA Notice

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

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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 (<http://www.unt.edu/oda>). You may also contact ODA by phone at (940) 565-4323.

Assessing Your Work

Homework 40%

Quizzes 40%

Midterm 10%

Final Exam 10%

A = 90-100%

B = 80-89%

C = 70-79%

D = 60-69%

F = 59% or below

Late work is not accepted and there is no extra credit or dropped assignments or quizzes.

Course Schedule (subject to change)

Week 1: Introduction and Tools

Week 2: Data Mining Fundamentals 1

Week 3: Data Mining Fundamentals 2

Week 4: Data Mining Fundamentals 3

Week 5: Python Review for Data Science

Week 6: Probability for Data Science

Week 7: Data Pre-Processing

Week 8: Midterm

Week 9: Time Series

Week 10: Spatial Data Mining

Week 11: Association Analysis

Week 12: Clustering / Classification

Week 13: Stylometry

Week 14: Project

Week 15: Thanksgiving

Week 16: Final Exam

Course Evaluation

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.

Course Policies

Assignment Policy

All assignments are posted to Canvas and should be submitted to Canvas. No late submissions will be accepted for any reason. Please start work on assignments and

quizzes well before the deadline and on a stable Internet connection to avoid any submission delays due to technical difficulties.

Examination Policy

You may use the Internet or any printed resources during exams, but please do not rely on this as the exams and quizzes have a time limit and the questions are not easily 'Google-able'. DO NOT POST quiz questions to any online venue or share quiz questions with other students. Violation of this policy will result in a zero for the assignment or exam. You may use online resources during the exam, but all quizzes and exams must be taken by yourself without human help.

Late Work

No late work is accepted. All submissions to Canvas must occur before the deadline. The instructor or TA cannot accept assignments via email.

Attendance Policy and Participation

Students are expected to regularly login to Canvas, keep up with assignments, and actively participate in online discussions and activities as posted.

Syllabus Change Policy

This syllabus, the grading scale, grades given on assignments, due dates, and any other course details are subject to change at any time without prior notice or consent.

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.

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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 websiteLinks to an external site.](https://disability.unt.edu/) (<https://disability.unt.edu/>).

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 Blackboard 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 Blackboard 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 ConductLinks to an external site.](https://deanofstudents.unt.edu/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: [my.unt.eduLinks to an external site.](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) [Links to an external site.](https://it.unt.edu/eagleconnect) (<https://it.unt.edu/eagleconnect>).

Student Evaluation Administration Dates

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. The survey will be made available during weeks 13, 14 and 15 of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem 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 [SPOT website](http://spot.unt.edu/) [Links to an external site.](http://spot.unt.edu/) (<http://spot.unt.edu/>) or email spot@unt.edu.

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](http://www.ecfr.gov/) [Links to an external site.](http://www.ecfr.gov/) (<http://www.ecfr.gov/>). The specific portion concerning distance education courses is located at Title 8 CFR 214.2 Paragraph (f)(6)(i)(G).

The paragraph reads:

(G) For F-1 students 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.

Student Verification

UNT takes measures to protect the integrity of educational credentials awarded to students enrolled in distance education courses by verifying student identity, protecting student privacy, and notifying students of any special meeting times/locations or

additional charges associated with student identity verification in distance education courses.

See [UNT Policy 07-002 Student Identity Verification, Privacy, and Notification and Distance Education Courses](#)[Links to an external site.](#).

Use of Student Work

A student owns the copyright for all work (e.g. software, photographs, reports, presentations, and email postings) he or she creates within a class and the University is not entitled to use any student work without the student's permission unless all of the following criteria are met:

- The work is used only once.
- The work is not used in its entirety.
- Use of the work does not affect any potential profits from the work.
- The student is not identified.
- The work is identified as student work.

If the use of the work does not meet all of the above criteria, then the University office or department using the work must obtain the student's written permission.

Download the UNT System Permission, Waiver and Release Form

Transmission and Recording of Student Images in Electronically-Delivered Courses

1. No permission is needed from a student for his or her image or voice to be transmitted live via videoconference or streaming media, but all students should be informed when courses are to be conducted using either method of delivery.
2. In the event an instructor records student presentations, he or she must obtain permission from the student using a signed release in order to use the recording for future classes in accordance with the Use of Student-Created Work guidelines above.
3. Instructors who video-record their class lectures with the intention of re-using some or all of recordings for future class offerings must notify students on the course syllabus if students' images may appear on video. Instructors are also advised to provide accommodation for students who do not wish to appear in class recordings.

Example: This course employs lecture capture technology to record class sessions. Students may occasionally appear on video. The lecture recordings will be available to you for study purposes and may also be reused in future course offerings.

No notification is needed if only audio and slide capture is used or if the video only records the instructor's image. However, the instructor is encouraged to let students know the recordings will be available to them for study purposes.

Use of AI Tools

Permitted Use: In this course, you are allowed to use Generative AI (GenAI) tools such as Claude, ChatGPT, Gemini to support your learning and develop skills for a GenAI-oriented workforce. This use will help us stay technically proficient and ethically grounded. However, GenAI should complement, not replace, our course materials. If something seems unclear, feel free to ask.

I use GenAI to assist in creating course materials.

All quizzes and exams should be completed by you, and simply uploading assignments to AI and asking it to complete the assignment is not permitted. AI tools should assist you, not replace you.

Policies

Grades are based on mastery of the content. As a rule, I do not grade on a “curve” because that is a comparison of your outcomes to others. I do, however, encourage you to find opportunities to learn with and through others. Explore [Navigate360's Study BuddyLinks to an external site.](https://navigate.unt.edu/Links to an external site.) (<https://navigate.unt.edu/Links to an external site.>) 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 with me the week before each exam. Forward together.

Honor Code: “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, 06.003Links to an external site.](https://policy.unt.edu/policy/06-003Links to an external site.) (<https://policy.unt.edu/policy/06-003Links to an external site.>). I affirm that the work I submit will always be my own, and the support I provide and receive will always be honorable.”

Participation

You are expected to keep up with each week's materials, assignments, and quizzes and submit your work before each week's deadline.