

Syllabus



Course	DSCI5340.001/ DSCI5340.002/ DSCI 5340.003
Course Title	Predictive Analytics and Business Forecasting
Professor	Sourav Chatterjee, PhD
Term	Fall 2022
Meetings	Online (asynchronous)

Professor's Contact Information

Office Phone	(940) 369-8859
Office Location	BLB 312H
Email Address	Sourav.Chatterjee@unt.edu
Office Hours	Wednesday 10 am – 12 pm <i>(students are encouraged to set up an appointment)</i>

TA	TBA
Email Address	TBA
Office Hours	TBA

Course Description

What would be the demand for electricity in the event of another extreme cold spell in North Texas? What would be the demand for the new Xbox console? How can a phone automatically tag a picture as a cat picture? Can a computer identify the predominant sentiment in various chapters of a book?

This course covers advanced topics in statistical forecasting and predictive modeling that can help answer those questions. The forecasting topics covered in this course include calibration of models, the estimation of seasonal indices and the selection of variables to generate operational business forecasts. The predictive modeling topics include support vector machines, text analytics, and neural networks.

Course Prerequisites or Other Restrictions

This course has no prerequisite. However, introductory-level graduate courses in Statistics, such as DSCI 5010 or DSCI 5180, is highly recommended. Also, prior exposure to programming language, such as R and Python would be helpful.

Learning Objective

By the end of this course, students will be able to:

1. Explain and apply machine learning concepts such as feature extraction, feature engineering, and performance evaluation.
2. Analyze non-traditional data that requires specialized analytical techniques and interpret the results.
3. Use advanced analytics tools to solve data-driven business problems using R.

Required Texts and Materials

The following textbooks will be used during different parts of this course:

1. Rob J Hyndman and George Athanasopoulos. [Forecasting: Principles and Practice](#). 3rd Edition. 2020. OTexts.
2. Galit Shmueli, Peter Bruce, Inbal Yahav, Nitin Patel, and Kenneth C. Lichtendahl Jr. Data Mining for Business Analytics: Concepts, Techniques, and Applications in R. Wiley. ISBN: 978-1-118-87936-8 (Hardcover), ISBN-13: 978-1-118-87933-7 (eBook).
3. Julia Silge and David Robinson. [Text Mining with R: A Tidy Approach](#). 1st Edition. 2018. O'Reilly Media.

Additionally, the following book may be useful as a reference for various topics:

1. James Gareth, Daniela Witten, Trevor Hastie, and Robert Tibshirani. [An Introduction to Statistical Learning: with Applications in R](#). 1st Edition. 2017. Springer. Electronic copy is also available at UNT library.

Responsibilities

Below is a non-comprehensive list of key responsibilities for students and the professor in this course. Both of these components are vital for a successful semester.

Professor:

- Create a learning environment that foster student learning and be available to students
- Provide clear instructions regarding assignments and outcomes
- Communicate expectations in a clear manner

Students:

- Prepare for and attend class regularly
- Work on assignments in a timely way
- Behave professionally in the classroom

Communication Expectations

Canvas is the primary channel of communication for delivering course materials, assignments, and announcements.

For direct or time-sensitive communications, email is preferred. Students must have a [@my.unt.edu](mailto:my.unt.edu) email address and use that email for such communications. I expect to respond to all course-related emails within 24 hours.

I may not respond to emails originating from a different domain (such as gmail.com) as I have no way of ascertaining a student's identity associated with that account.

Use of Technology

This course will use R, a free software environment for statistical computing and graphics and RStudio, an IDE. [Download R](#) and [RStudio](#) during the first week of this course.

This course requires access to a laptop and reliable internet connection. You will need to access instructional materials on Canvas on a regular basis. You can find [technical requirements for Canvas](#) on UNT's Center for Learning, Experimentation, Application & Research website. Additional support for Canvas can be found at UNT's [Canvas Technical Help](#) page.

Technology Help

The University is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the professor may extend the time windows and provide an appropriate accommodation based on the situation. In such circumstances, a student should immediately report the issue to the professor, contact the UNT Student Help Desk, obtain a ticket number, and share it with professor. The professor and the UNT Student Help Desk will work with the student to resolve any issues at the earliest possible time.

UNT IT Help Desk website: <http://www.unt.edu/helpdesk/index.htm>

Email: helpdesk@unt.edu

Phone: (940) 565-2324

WEEKLY SCHEDULE

The following table provides a tentative schedule for the semester and is subject to change at the professor's discretion. It is the student's responsibility to be aware of announced changes to this schedule.

Date	Topics	Assign	Submit
Week 1	Introduction to Forecasting Basic Statistics		
Week 2	Time Series Graphics		
Week 3	Time Series Decomposition		
Week 4	Forecaster's toolbox	HW1	
Week 5	Time Series Regression	HW2	HW1
Week 6	Exponential Smoothing Models		HW2
Week 7	ARIMA Models		
Week 8	Exam 1		
Week 9	k -Nearest Neighbors		
Week 10	Support Vector Machines	HW3	
Week 11	Naïve Bayes	HW4	HW3
Week 12	Text Analytics		HW4
Week 13	Neural Networks		
Week 14	Exam 2		

Grading

The final grade for the course will be calculated using the formula below:

Assignment	Points Possible	Percentage of Final Grade
Homework 1	20	10%
Homework 2	20	10%
Homework 3	20	10%
Homework 4	20	10%
Exam 1	50	25%
Exam2	50	25%
CAPP	20	10%

Grading Scale

The following cut-offs will be use to assign the final letter grade for this course:

Letter Grade	Percent Grade
A	90% or more
B	80% or more
C	70% or more
D	60% or more
F	Below 60%

Incomplete Grades

The grade of "I" is not given except in rare and very unusual circumstances, as per University Guidelines. An "I" grade cannot be used to substitute poor performance in this class.

Homework Assignments

Each student will work in a group of 4-5 students. The assignments will be based on in-class lectures and the assigned readings. Results and responses to questions in the assignments should be prepared in formal written format. These assignments will be assessed not only by the accuracy of the output but also how well the results are prepared (using tables and charts) and interpreted.

Homework assignments must be uploaded on Canvas. Any other method of submission is not acceptable. The submitted filenames should at the least include the course code, the assignment number, and your group number (*e.g.*, DSCI4520_Homework2_Group5), in that order. Any submission after the due date will not be accepted and automatically assigned a grade of zero.

For these group assignments, each member of a group will have an option to submit a peer evaluation of her/his group members anytime during the semester. The evaluation is either approval or disapproval of her/his group members' contributions during this course. If a student receives 2 or more disapproval votes by other members of her/his group, s/he will face a 5%-50% penalty for all the group assignments. Each student may send her/his evaluation privately to me by email. If I receive no peer evaluations before Exam 2, I will assume every member of a group contributed equitably.

A total of **four (4)** homework assignments will be given during the semester. Each homework assignment will account for **10%** of the final course grade.

Exams

There will be two exams in this course. These exams will be administered asynchronously. The timing of the exam will be announced on Canvas. Each exam will account for **25%** of the final course grade.

There will be no make-up exams in this course.

Clapp (Class Participation and Professionalism)

The Clapp score is based on participation and professionalism and will be subjectively assessed by the professor.

A key part of participation will be based on an individual student's contribution to group assignments. Students are also encouraged to actively participate in group discussions. Participation grade is dependent on the quality, not quantity, of interactions.

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 on the basis 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 will not be tolerated.
- Treat your instructor and classmates with respect in any communication online, even when their opinion differs from your own.
- Ask for and use the correct name and pronouns for your instructor and classmates.
- Speak from personal experiences. Use “I” statements to share thoughts and feelings. Try not to speak on behalf of groups or other individual’s 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.
- Proofread and fact-check your sources.
- Keep in mind that online posts can be permanent, so think first before you type.

UNT Policies

Academic Integrity Policy

Academic Integrity Standards and Consequences. According to UNT Policy O6.003, 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.

If a student in this class engages in academic dishonesty, the student may end up getting a failing grade in this course. Additionally, the case may be referred to the Dean of Students for appropriate disciplinary action.

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](#).

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: 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](#).

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/) (<http://spot.unt.edu/>) or email spot@unt.edu.

Survivor Advocacy

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct. Federal laws and UNT policies prohibit discrimination on the basis of sex as well as 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. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at (940) 565-2648.

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/) (<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](#).

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.

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](#)
- [Counseling and Testing Services](#)
- [UNT Care Team](#)
- [UNT Psychiatric Services](#)
- [Individual Counseling](#)

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](#)
- [Financial Aid](#)
- [Student Legal Services](#)
- [Career Center](#)
- [Multicultural Center](#)
- [Counseling and Testing Services](#)
- [Pride Alliance](#)
- [UNT Food Pantry](#)

Academic Support Services

- [Academic Resource Center](#)
- [Academic Success Center](#)
- [UNT Libraries](#)
- [Writing Lab](#)

ETHICAL ACADEMIC BEHAVIOR IN ITDS CLASSES

The UNT College of Business and the ITDS Department expect their students to behave at all times in an ethical manner. There are at least two reasons for this. First, ethical behavior affirms the personal value and worth of the individual. Second, professionals in all fields (but particularly in information systems, accounting, and HR) frequently handle confidential information on behalf of their employers and clients. Thus, employers of UNT College of Business graduates expect ethical conduct from their employees because that behavior is crucial to the success of the organization. Academic dishonesty is a major violation of ethical behavior.

Students are expected to read UNT's [Student Academic Integrity Policy](#). UNT's Student Standards of Academic Integrity which defines academic dishonesty and sets out the consequences for unethical academic behavior. Cheating and plagiarism are the most common types of academic dishonesty.

The UNT's Student Standards of Academic Integrity policy defines cheating as: The use of unauthorized assistance in an academic exercise, including but not limited to:

1. *Use of any unauthorized assistance to take exams, tests, quizzes or other assessments;*
2. *Dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems or carrying out other assignments;*
3. *Acquisition, without permission, of tests, notes or other academic materials belonging to a faculty or staff member of the University;*
4. *Dual submission of a paper or project, or re-submission of a paper or project to a different class without express permission from the instructor;*
5. *Any other act designed to give a student an unfair advantage on an academic assignment.*

The university's policy defines plagiarism as the "Use of another's thoughts or words without proper attribution in any academic exercise, regardless of the student's intent, including but not limited to:

1. *The knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgement or citation.*
2. *The knowing or negligent unacknowledged use of materials prepared by another person or by an agency engaged in selling term papers or other academic materials.*

Examples of academic dishonesty in an ITDS class include: copying answers from another person's paper; using notes during an exam; copying computer code from another person's work; having someone else complete your assignments or take tests on your behalf; stealing code printouts, software, or exams; recycling assignments submitted by others in prior or current semesters as your own; and copying the words or ideas of others from books, articles, reports, presentations, etc. for use as your own thoughts without proper attribution (i.e., plagiarism). It does not matter whether you received permission from the owner of the copied work; claiming the material as your own is still academic dishonesty.

The ITDS Department believes it is very important to protect honest students from unfair competition with anyone trying to gain an advantage through academic dishonesty. Academic

dishonesty is not tolerated in ITDS classes, and those who engage in such behavior are subject to sanctions as outlined in the UNT's policy and/or the course syllabus. You are strongly encouraged to read the policy carefully so that you are aware of what constitutes academic dishonesty and the consequences of this unethical behavior.

By signing below, I acknowledge my responsibility to read the UNT academic dishonesty policy and the [Student Standards of Academic Integrity](#); and attest that I have read and understand the statements in this document and agree to behave ethically in this class.

Student Name (Print)

Student ID No.

Student Signature

Date

DRAFT

UNIVERSITY OF NORTH TEXAS
Authorization to Release Assignments to Plagiarism Detection Service

Written assignments in this course will be provided to an internet-based plagiarism detection service that is not affiliated with the University of North Texas. If you sign the form, your assignments may be submitted to the service with your name or student identification number (but only if you put this number on your assignment which you should never do in this course). **If you do not sign this form, you must sign the bottom section acknowledging that it is your responsibility to make sure your name and other identifying information only appear on the coversheet of your assignments – Your cover sheet will not be included when the rest of your assignment is submitted to the service.** This authorization is only to allow the instructor to manage more efficiently the course and will expire upon the issuance of a final grade.

Please sign and date the authorization form. Return the form to the instructor upon completion. You are not required to sign this authorization and you will not be penalized if you do not sign the form; however, if you do not wish to sign it you are required to complete the section at the bottom of the form.

I, _____ **[Print Name of Student],**

hereby voluntarily authorize the instructor in DSCI5340 to disclose assignments that contain my name and/or student identification number (if for some reason I chose to include on my assignments) to an internet-based plagiarism detection service. (There is no reason you would ever put your student identification number in any assignment for this course.)

This authorization will remain in effect from the date it assigned until a grade is assigned in this course and does not apply to any other course in which I am enrolled at the University of North Texas.

Student Signature

Date

SIGN & DATE ABOVE

OR

SIGN & DATE THE SECTION BELOW

I, _____ **[Print Name of Student],**

understand that by not agreeing to the above part of this form it is my responsibility to make sure that my name and other identifying information only appear on the coversheet of all my assignments (including team assignments) since my instructor will submit the rest of my assignments (excluding the coversheet) to an internet-based plagiarism detection service.

Student Signature

Date

DRAFT

UNT College of Business Student Ethics Statement

As a student of the UNT College of Business, I will abide by all applicable policies of the University of North Texas, including the Student Standards of Academic Integrity, the Code of Student Conduct and Discipline and the Computer Use Policy. I understand that I am responsible reviewing the policies as provided by link below before participating in this course. I understand that I may be sanctioned for violations of any of these policies in accordance with procedures as defined in each policy.

I will not engage in any acts of academic dishonesty as defined in the Student Standards of Academic Integrity, including but not limited to using another's thoughts or words without proper attribution (plagiarism) or using works in violation of copyright laws. I agree that all assignments I submit to the instructor and all tests I take shall be performed solely by me, except where my instructor requires participation in a group project in which case I will abide by the specific directives of the instructor regarding group participation.

While engaged in on-line coursework, I will respect the privacy of other students taking online courses and the integrity of the computer systems and other users' data. I will comply with the copyright protection of licensed computer software. I will not intentionally obstruct, disrupt, or interfere with the teaching and learning that occurs on the website dedicated to this course through computer "hacking" or in any other manner.

I will not use the university information technology system in any manner that violates the UNT nondiscrimination and anti-sexual harassment policies. Further, I will not use the university information technology system to engage in verbal abuse, make threats, intimidate, harass, coerce, stalk or in any other manner which threatens or endangers the health, safety or welfare of any person. Speech protected by the First Amendment of the U.S. Constitution is not a violation of this provision, though fighting words and statements that reasonably threaten or endanger the health and safety of any person are not protected speech.

[Student Standards of Academic Integrity](#)

[Code of Student Conduct and Discipline](#)

[Computer Use Policy](#)

By signing below, I acknowledge my responsibility to read the UNT academic dishonesty policy and the [Student Standards of Academic Integrity](#): and attest that I have read and understand the statements in this document and agree to behave ethically in this class.

Student Name (Print)

Student ID No.

Student Signature

Date

DRAFT

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

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