Syllabus
OPRE 3360 - Managerial Methods in Decision Making Under Uncertainty
Spring 2023

Instructor: Quanquan Liu
Lecture Time and Location:
Session 1: Monday 1:00pm - 3:45pm at JSOM 2.801
Session 2: Monday 7:00pm - 9:45pm at JSOM 2.801
Session 3: Tuesday 1:00pm - 3:45pm at JSOM 12.206
Office: JSOM 13.401
Office Hours: by appointment
Email: qxl220001@utdallas.edu

Teaching Assistant:
Office:
Office Hours:
Email:

The Statistics and Math lab also offers assistance to undergraduate students for OPRE 3333 and OPRE 3360. It is located in JSOM 2.414. The schedule is to be announced on eLearning.

Course Modality

This class is intended to follow in class (face to face) modality. However, class modality will follow UTD Covid-19 guidelines and all its changes that may occur during the semester regarding whether students need to attend classes on campus or can attend remotely either synchronously or asynchronously.

COVID-19 Guidelines and Resources

The information contained in the following link lists the University's COVID-19 resources for students and instructors of record.
Please see UT Dallas Syllabus Policies and Procedures - The University of Texas at Dallas

Course Description

The objective of this course is to introduce the concepts of probability and statistics to managerial decision making. Concepts will be developed in lecture and exercises using software packages. Topics include: summarizing and presenting data, probability theory, sampling, estimation, confidence intervals, hypothesis testing, regression, and ANOVA.

Emphasis will be given to modeling and solving business problems in finance, marketing, accounting, and operations management.

Course Objectives

On successful completion of this course a typical student should be able to use the tools of probability and statistical modeling to support business decisions. Specifically, she/he

- can quantify uncertainty found in business situations and form probabilistic knowledge;
- estimate the key metrics based on data and test hypotheses about business realities using data, and
- build a statistical model of uncertain business realities for insight gathering and prediction.

Prerequisites

Knowledge of basic calculus and some familiarity with computer-based data analysis (MATH 1325 or MATH 2413 or MATH 2417).

Textbook and Materials

TEXTBOOK: "Modern Business Statistics with Microsoft Excel" (7th Edition), by Jeby David R. Anderson, Dennis J. Sweeney, Thomas A. Williams, Jeffrey D. Camm, James J. Cochran, Michael J. Fry, Jeffrey W. Ohlmann. 2018 Cengage Learning, Inc.
ISBN: 978-0-357-13138-1.

The lecture notes and other materials posted on eLearning will also be sufficient for the students to learn the material.

Required Software:
The course will involve extensive use of Microsoft Excel, and in particular the data-analysis tool pack (a native Excel add-in). The use of each tool will be discussed in class but basic familiarity (such as copy and paste, entering formulae) with Microsoft Excel is assumed. I expect that students will use Excel 2013 or newer version.

Mac Support: Microsoft Office 2016 for Mac (or newer version) features regression tools (which we will be using in future lectures). I recommend that students with Mac install the newest version or use Microsoft Office for Windows.

Please use the link to download and install the newest Excel for free as a UTD student: https://www.utdallas.edu/oit/o365/.

eLearning:

Lecture notes, assignment solutions, excel files and any additional material will be posted on the eLearning website of this course. eLearning can be accessed via https://ets.utdallas.edu/elearning using your NetID and password. If you are having difficulties accessing eLearning, please contact the eLearning Helpdesk via https://ets.utdallas.edu/elearning/helpdesk.

Grading

Your grade in this course will be determined by the following assignments:

- Class Participation and Attendance Requirements (5%)
- Individual Assignments (10%)
- Group Assignments (15%)
- Midterm Exam (30%) - **Date:** March 21.
- Final Exam (40%) - **Date:** May 9. The final exam is cumulative in that the material builds on each other.

1. **Class participation**: To get the most from this class, it is important that you come to class ready to join the discussion on the day's topic. When evaluating class participation, I keep the criteria as follows:
   - Attending class regularly;
   - Displaying positive behaviors such as active listening to the instructor and peers, asking insightful questions, responding to questions, synthesizing others' ideas, bringing appropriate real-life experiences, and disagreeing constructively.

   Remember, if you miss a class meeting you are expected to obtain notes and other material on your own.

2. **Attendance requirements**: Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty. Occasionally, there will be attendance documentations. If you have to miss a class, please contact the Instructor and provide documentation of exigency. You might receive at most 50% of the original points with the Instructor's consent.

3. **Individual assignments**: There will be 10 short individual assignments. Usually one after each lecture and is due before next lecture. Small following-up assignments ensure that you are prepared for class and are on track to pass exams. Specific details for these assignments will be posted on eLearning.

   These are individual assignments. Students are encouraged to work together on the problem sets but must turn in their own work. Each assignment has a specific time by which it must be completed. Early homework is accepted; Late submissions within 24 hours will receive

50% of the original points, late submissions within 48 hours will receive 25%, and so on. The two lowest homework grades will be dropped.

4. **Exams**: There are two exams (see Course Schedule for details). Exams will combine multiple-choice and short answer questions.

   Exams will be administered by the Testing Center. Students should visit https://ets.utdallas.edu/testing-center to register a seat and for more information. Instructions will be sent to you via eLearning announcement prior to the exams.

   All exams are **closed book**. You may need a **calculator** and you are responsible for bringing this calculator to the exam. Calculators on phones are not allowed. You may also bring a one-page A4 size (8.5 * 11) single-sided handwritten **formula sheet** to the exam.

   Exams are mandatory and you are expected to make every effort to attend them. If you miss an exam, you must take the following three steps:
   1) Contact me at least 24 hours before the exam. If I do not hear from you in that time, you will receive a zero for the exam.
   2) Provide documentation of exigency.* I reserve the right to assign a grade of zero for the exam for reasons I deem less than exigent.
   3) Student who misses the midterm could, at the instructor's discretion, be permitted to drop the midterm and have the final count as an additional 30% of the student's grade. Student who misses the final must take the make-up exam at a time of the instructor's choosing. If the student cannot make that time, he/she will receive a zero for the exam. The final exam is comprehensive.

      * - Note that providing false or misleading documentation will result in a failing grade for the course, along with any other university penalties that accompany a violation of the Academic Integrity Policy.

5. **Group assignments**: There will be three group assignments during the semester. A group of **Five** students can work together on the assignments. The group assignments will mainly focus on more practice problems and Excel applications, and detailed descriptions will be given later. All the groups must be formed before posting the first assignment. Each group must have a leader who is responsible for submitting the assignment. Again, late submissions within 24 hours will receive 50% of the original points, late submissions within 48 hours will receive 25%, and so on.

   A student's grade on group assignments will be subject to peer evaluations at the end of the semester. Suppose, for example, that your group's overall score on the assignments is 95% and you receive an average evaluation of 96% from your teammates and yourself. Then your overall score for the group assignments will be 95% x 96% = 91.2%. Please refer to last page for a sample completed peer evaluation form.

In case a member does not perform to the team's expectation in group work by constantly missing group meetings, failing to provide requested information in a timely fashion, contributing work that is poorly done, or exhibiting other unprofessional behaviors, the other members may decide to drop him/her from the group. However, in the interest of fairness, the five-step procedure outlined below must be closely followed:

1) There needs to be a unanimous agreement among all other team members that the student's performance is unsatisfactory.
2) The concern must be conveyed to the person in writing and discussed with him/her in person. The written notice must be signed and dated by the rest of the group.
3) A copy of the above-mentioned notice has to be submitted to the instructor at the same time.
4) The student has one week of class time to improve his/her performance.
5) If no satisfactory improvement is made over the one-week period, then a final written notice of dropping the person as a member of the team will be signed and dated by the other members and given to him/her. In the meanwhile, a copy of the document must be forwarded to the instructor.

If a student is dropped from a team and not accepted by another, then he/she must complete the remaining assignments on an individual basis or loses the points.

6. **Extra Credit**: No additional work for extra credit is possible in this class.

Letter Grade Distribution

Score	Letter Grade	Score	Letter Grade
93 and above	A	73 - 76.99	C
90 - 92.99	A-	70 - 72.99	C-
87 - 89.99	B+	67 - 69.99	D+
83 - 86.99	B	63 - 66.99	D
80 - 82.99	B-	60 - 62.99	D-
77 - 79.99	C+	59.99 and below	F

* - If you believe that your exam is incorrectly graded or that your grade is incorrectly posted, please contact me via e-mail (i.e., in writing) as soon as possible. You have 7 days after the grade has been posted to voice your concern. After 7 days have passed, your posted grade will be assumed to be correct and accurate.

Comet Creed

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

Policies

Communication

E-mail is the best way to reach Prof. Liu. Any issues that require action MUST be handled by email so that there is a written record of need. Email is also recognized as an official mode of university correspondence; therefore, you are responsible for reading your email for university and course-related information and announcements. You are responsible for keeping the university informed about changes to your email address. You should check your email regularly and frequently to stay current with university-related communications, some of which may be time-critical.

Classroom Policy
Please turn off your mobile phones and other electronic devices to avoid disturbing. Please arrive on time and leave after class ends. Remember that your classroom citizenship will be considered in your in-class participation grades.

Class Participation
Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Materials
The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course; however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student Accessibility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

In-Class Recording
The instructor may record meetings of this course. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student Accessibility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student Accessibility accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Academic Support Resources

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

Please go to UT Dallas Syllabus Policies and Procedures - The University of Texas at Dallas webpage for these policies.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to UT Dallas Syllabus Policies and Procedures - The University of Texas at Dallas webpage for these policies.

Schedule of Lectures and Readings

Attention: This course is cumulative in that the material builds on each other, and moves rapidly. DO NOT FALL BEHIND! If at any point you do not understand the material, you must seek additional help from the instructor, teaching assistant or a tutor as mastery of the material at each section is required to move on to the next section.

(Tentative) Course Schedule:

Week (Dates)	Content
Week 1 (Jan 16)	**No class (Martin Luther King Day)**
Week 2 (Jan 23)	Syllabus Lecture 1. Data and Statistics (Chapter 1)
Week 3 (Jan 30)	Lecture 2. Descriptive Statistics: Tabular and Graphical Displays (Chapter 2)
Week 4 (Feb 6)	Lecture 2. Descriptive Statistics: Tabular and Graphical Displays (cont.) (Chapter 2)
Week 5 (Feb 13)	Lecture 3. Descriptive Statistics: Numerical Measures (Chapter 3)
Week 6 (Feb 20)	Lecture 4. Introduction to Probability (Chapter 4)
Week 7 (Feb 27)	Lecture 5. Discrete Probability Distributions (Chapter 5)
Week 8 (Mar 6)	Lecture 6. Continuous Probability Distributions (Chapter 6)
Week 9 (Mar 13)	**No class (Spring break)**
Week 10 (Mar 20)	**MIDTERM** – Mar 21

Week 11 (Mar 27)	Lecture 7. Sampling and Sampling Distributions (Chapter 7)
Week 12 (Apr 3)	Lecture 8. Interval Estimation (Chapter 8)
Week 13 (Apr 10)	Lecture 9. Hypothesis Tests (Chapter 9)
Week 14 (Apr 17)	Lecture 10. Simple Linear Regression (Chapter 14)
Week 15 (Apr 24)	Lecture 10. Simple Linear Regression (cont.) (Chapter 14)
Week 16 (May 1)	Lecture 11. Multiple Linear Regression (Chapter 15)
Week 17 (May 8)	**FINAL** – May 9

* - *The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor. Any changes will be communicated in class, via e-mail listserv, and posted on eLearning. It is the student's responsibility to stay informed of any changes.*

*** *By enrolling in this course, you are agreeing to the terms outlined in this syllabus*. ***

I look forward to a fun and productive semester with you all!

OPRE 3360
Peer Evaluation Form for Group Assignments

Instructions: The information submitted is final and cannot be changed. So please rate each of your fellow team members with respect to the criteria listed in the table below. Be honest, reasonable, and fair.

Group number: ____

	Student 1	Student 2	Student 3	Student 4	Yourself
Meeting attendance (15%)					
Punctuality of work (15%)					
Fair share of work (30%)					
Quality of work (40%)					
Total (100%)					

Name: _____ Signature: _____

Date: _____

Comments:

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