OPRE 3333: Quantitative Business Analysis
University of Texas at Dallas

Course Syllabus

Disclaimer:
The descriptions and timelines contained in this syllabus are subject to change at the discretion of the instructor.

Course Information:

Course Number/Section:	OPRE 3333.004/005
Course Title:	Quantitative Business Analysis
Term:	Fall 2025
Lecture Days and Times:	Section 004: Tuesday/Thursday, 8:30 am – 9:45 am
	Section 005: Tuesday/Thursday, 10:00 am – 11:15 am
Lecture Location:	Section 004: JSOM 1.107
	Section 005: JSOM 12.222
Instructional Mode:	Face to Face
Instructor:	Negin Enayaty Ahangar, Ph.D.
Office Information:	JSOM 14.409
Office Hours:	Monday/Wednesday, 1:00 pm – 2:00 pm
Email:	negin@utdallas.edu
Teaching Assistant:	Nirmit Pradip Patel
Office Hours:	Tuesday/Thursday, 1:00 pm – 3:00 pm (online via MS Teams)
Email:	NirmitPradip.Patel@UTDallas.edu

Course Pre-requisites, Co-requisites and/or Other Restrictions:
Credit cannot be received for both courses, OPRE 3333 and MATH 2333.
Prerequisites: MATH 1325 or MATH 2413 or MATH 2417

Course Description:
Discusses two related areas, linear algebra, and business analytics, providing essential mathematical and analytical tools for effective problem-solving. Studies concepts from linear algebra, such as matrices, linear systems of equations, and different techniques for solving these systems. Business analytics section introduces the analytical tools and methods for making data-driven management decisions. Topics include regression analysis, optimization methods, and decision analysis.

Student Learning Objectives/Outcomes:
Students are required to take the initiative to learn, understand and apply quantitative business analytics to real-world business data. At the end of this course, you should:

- Be able to apply mathematical techniques of optimization and linear algebra
- Be able to effectively understand and interpret analytic models and use them in the decision-making process
- Be able to utilize basic business analytic tools in Excel

This course focuses on the concepts of linear algebra and business analytics. While Excel will be used as a computational tool to perform calculations and visualize data, the main objective is not to learn Excel itself. Instead, the emphasis is on understanding the underlying mathematical concepts and analytical techniques that drive decision-making in business contexts. Students interested in further developing their Excel skills are encouraged to explore courses such as OPRE 4350 and ITSS 3300, which provide training in Excel and related tools.

Recommended textbooks:

1. Elementary Linear Algebra (8^{th} edition) - Author: Larson
2. Business Analytics (5^{th} edition) - Authors: Camm/Cochran/Fry/Ohlmann

Grading Criteria:
Grades are assigned based on the following weighting.

Assignment Average	25%
Highest Exam Grade	30%
Median Exam Grade	25%
Lowest Exam Grade	20%

The letter grades are determined based on the following grading scheme.

Letter Grade:	A^+	A	A^-	B^+	B	B^-	C^+	C	C^-	D^+	D	F
Minimum Required Grade :	97	93	90	87	83	80	77	73	70	65	60	0/*

***** Students who receive less than 50/100 on all three exams.

Course Calendar:

Week	Date	Topic	Assignment	Due Date
1	Tuesday, August 26	System of Linear Equations		
1	Thursday, August 28	System of Linear Equations	Assignment 1	September 8
2	Tuesday, September 2	Matrices		
2	Thursday, September 4	Matrices	Assignment 2	September 15
3	Tuesday, September 9	Determinants		
3	Thursday, September 11	Determinants	Assignment 3	September 22
4	Tuesday, September 16	Introduction to Business Analytics		
4	Thursday, September 18	Data Visualization		
5	Tuesday, September 23	Data Visualization		
5	Thursday, September 25	**Exam 1 (Units 1 – 3)**		
6	Tuesday, September 30	Time Series Analysis and Forecasting		
6	Thursday, October 2	Time Series Analysis and Forecasting		
7	Tuesday, October 7	Time Series Analysis and Forecasting		
7	Thursday, October 9	Time Series Analysis and Forecasting	Assignment 4	October 20
8	Tuesday, October 14	Linear Optimization Models		
8	Thursday, October 16	Linear Optimization Models		
9	Tuesday, October 21	Linear Optimization Models		
9	Thursday, October 23	**Exam 2 (Units 4 – 6)**		
10	Tuesday, October 28	Linear Optimization Models		
10	Thursday, October 30	Linear Optimization Models		
11	Tuesday, November 4	Linear Optimization Models	Assignment 5	November 10
11	Thursday, November 6	Integer Linear Optimization Models		
12	Tuesday, November 11	Integer Linear Optimization Models		
12	Thursday, November 13	Integer Linear Optimization Models		
13	Tuesday, November 18	Nonlinear Optimization Models		
13	Thursday, November 20	Nonlinear Optimization Models	Assignment 6	December 1
14	Tuesday, November 25	Fall Break		
14	Thursday, November 27	Thanksgiving Holidays		
15	Tuesday, December 2	Decision Anlaysis		
15	Thursday, December 4	Decision Anlaysis		
16	Tuesday, December 9	**Exam 3 (Units 7 – 11)**		

Software:
This course uses Microsoft Excel 2007 or higher (no trial or student version). You can download and install Excel for free as a UTD student.

The Statistics and Math lab:
This lab, located in room JSOM 2.414, assists students enrolled in OPRE 3333, OPRE 3340, or OPRE 3360. The schedule is to be announced on eLearning.

Course Policies:

1. **General:**
   - Students must read the syllabus and check for daily announcements/emails.
   - Students must carefully observe all due dates from the first day of class and plan their personal activities accordingly.
   - Students have one week from the date a grade is posted on eLearning to address any grading concerns with the instructor.

2. **Exams:**
   - Exams will be administered by the UTD Testing Center. Students should see the UTD testing center page to register for a seat and for more information.
   - Students must register for exams at the UTD Testing Center no later than one week before the exam date. Failure to do so will result in a 10-point penalty on the exam grade.
   - The instructor reserves the right to deduct points from the student's exam grade for not following the exam instructions and announcements.
   - Exams will NOT be available to students after submission. However, you have one week after grades are posted on eLearning to review your graded exam in person during the instructor's office hours and receive feedback from the instructor.
   - There will be NO make-up for any missed exam except for medical emergencies. A written statement and the physician's address and phone number are required to justify the situation.
   - Students must respond to emails about make-up exam instructions within 24 hours and register for the exact date and time provided by the instructor. Failure to do so will result in missing the make-up exam.
   - Exam grades cannot be curved since their weights vary for different students.
   - Students are not allowed to have cheat sheets for exams, but they may be provided with a formula sheet.

3. **Assignments:**
   - The assignments will be assessed through eLearning.
   - The lowest assignment grade will be dropped.
   - The solution to an assignment will be posted after the due date. Therefore, there will be no make-up opportunities for any missed assignments.

4. **Extra Credit:**
   - Extra credit will NOT be offered.

5. **Academic Dishonesty/Cheating:**
    - Students are required to read, understand and abide by the university policy on academic honesty.
    - Any student found responsible for committing an act of academic dishonesty will receive a grade of zero on that exam or assignment.
    - The instructor reserves the right to change the grading policy without any notice due to unforeseen circumstances such as dishonesty, cheating, etc.

6. **Mobile Phones, Laptops & Electronic Devices:**
    - Taking unauthorized pictures or recording during the lecture/classroom from presented materials with a mobile phone, laptop, camera or any other device is an infringement of privacy rights and is prohibited.

7. **Class Recordings:** Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the AccessAbility Resource Center 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 AccessAbility Resource Center accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

8. **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 AccessAbility Resource Center accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Comet Creed:
This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

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

Academic Support Resources:
The information contained in the following link lists the University's academic support resources for all students. Please go to Academic Support Resources 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 review the catalog sections regarding the credit/no credit or pass/fail grading option and withdrawal from class. Please go to UT Dallas Syllabus Policies webpage for these policies.