



The University of Texas at Dallas

Jindal School of Management

Course Syllabus

NOTE: **Any** course material (such as lecture notes, spreadsheets, HW and HW solutions, video presentation, course codes, syllabus, etc.) provided by the instructor are for registered students' use only. These materials **MUST** not be reproduced or shared with those not in class or uploaded to other online platforms 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](#).

Course Information

Course Number: BUAN/OPRE 6398.001
Course Title: Prescriptive Analytics
Term: Spring 2021
Class Meeting: Monday 10am -12:45pm, conducted virtually in Microsoft Teams.

Instructor Contact Information

Instructor: Rasoul Ramezani
Email: rasoul.ramezani@utdallas.edu, Please write the course and the section number on the subject line.
Office Hours: Wed/Fri 10am – 12pm or by appointment, conducted virtually in MS Teams.

TA Contact Information

TA: Karthik Kattula
Email: kxk190038@utdallas.edu, Please write the course and the section number on the subject line.
Office Hours: Mon/Thurs 2pm – 4pm, conducted virtually in MS Teams.

Course Modality and Expectations

Instructional Modality	Remote/ Virtual Learning
Course Platform	Lectures will be delivered remotely. Students must join the class team in MS Teams (OPRE 6398.001/ OPRE/BUAN6398.001 2212). The professor will conduct the class and record it in Microsoft Teams. For asynchronous access to presentations, class videos will be posted into MS Stream within 24 to 48 hours after the class is conducted. An access link will be provided to the class on eLearning.
Expectations	Students must connect during class time and participate. It is expected that you turn on your camera and be engaged during the presentation of the material. To get the best out of the class, you should take advantage of the class time and ask questions as we move forward. Students are expected to conduct themselves with responsibility and class decorum during our weekly meetings. Any violation to Student Code of Conduct will be referred to the dean's office.
Asynchronous Learning Guidelines	Students may decide to attend the class asynchronously , that means, not attending the class physically. If so, they would need to review the video presentations and course materials on their own. For more information see https://www.utdallas.edu/fall-2020/asynchronous-access-for-fall-2020/

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 <http://go.utdallas.edu/syllabus-policies>.

Class Attendance

Regular and punctual class attendance is expected regardless of modality. Our class is Remote, so we expect to meet remotely during class time.

Class Participation

Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. 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 Recordings

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility 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 AccessAbility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to

access recorded lectures. Unless the Office of Student AccessAbility 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 AccessAbility 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](#).

Course Materials

- **Required Textbook:** Cliff Ragsdale (2017). *Spreadsheet modeling & decision analysis: A practical introduction to business analytics (8th ed.)*. Stamford, CT: Cengage Learning.

Students are fully responsible for the possible consequences caused by using other editions as their contents might be different from those in the latest edition.

- **Required Software:** Analytic Solver Platform

This is an Excel add-in and is run on Microsoft Excel 2007 or higher.

For installation steps, see “*Analytic_Solver_v2021_Student_Installation_Guide.pdf*” uploaded on eLearning.

For activation, in addition to the access code that must be purchased by students, students will need the course and book codes. These two codes will be posted on eLearning at the beginning of the semester.

Communication

- **eLearning:** Students should have access to the course eLearning webpage and should regularly check the email account used with eLearning as well as *announcements* posted on eLearning. Lecture notes, assignments, assignments solution, reading assignments, practice questions, etc. are posted on eLearning.
- **Microsoft Stream:** Recorded lectures will be uploaded into the Course group in Microsoft Stream. To access the video presentations, follow the below steps:
Log in to your Microsoft Stream account, using you UTD credentials at
<https://web.microsoftstream.com/> => My Content => Group => OPRE/BUAN 6398-001
- **Discussion Board:** Questions that are not personal should be posted to the course Discussion Board on eLearning. The instructor will receive these questions and comments, as well as other class members. Questions of a personal nature (or not relevant to others in the class) should be sent directly to the instructor and not posted to the Discussion Board.

Students are encouraged to respond to questions from fellow students. Answering questions helps both the student asking the question and the student working on the answer. In addition, since the conversation is open to the entire class, others can also learn from the exchange.

Follow the below steps to subscribe to the discussion board:

Log in to e-Learning => select OPRE/BUAN 6398.001 from Course List => from the Course Menu, select Discussion Board => Click the “Questions/Comments” forum => Click Subscribe

- **Online Meetings:** Online appointments will be scheduled via Microsoft Teams.

Prerequisites

OPRE 6301 Quantitative Introduction to Risk and Uncertainty in Business

Course Description

“OPRE 6398 Prescriptive Analytics (3 semester hours): Introduction to decision analysis and optimization techniques. Topics include linear programming, decision analysis, integer programming, and other optimization models. Applications of these models to business problems will be emphasized.”

The course is about the science of better, i.e., applying analytical tools to make better decisions and improve the efficiency of a system. Topics to be covered include linear programming, integer programming, network models, time series forecasting, queuing theory, decision analysis, and project management. The primary goal is to acquaint students in business and relevant disciplines with useful concepts, theories, and solution methods in predictive analytics. Much emphasis will be placed on practical applications of the models discussed in class.

Student Learning Objectives/Outcomes

Students are expected to become familiar with the Excel-based software required for the class and develop skills in formulating problems, identifying solution methods, solving problems manually or by computer, and interpreting results. Upon successful completion of this course, students should be able to:

1. Use Analytic Solver Platform proficiently;
2. Formulate real-world problems as analytical or optimization models;
3. Identify appropriate program(s) in Analytic Solver Platform for solving models formulated;
4. Apply programs identified to solve problems manually or by computer; and
5. Interpret the results obtained and implement them in practice.

Topics and Tentative Academic and Assignments Calendar

Please note that the timelines below are tentative and subject to change. Lectures and assigned readings may overlap from one class to the next.

Week 1	Jan 18	No Class -- Martin Luther King Day
Week 2	Jan 25	Syllabus review Analytic Solver Platform Introduction Introduction to Optimization and Linear Programming
Week 3	Feb 1	Modeling and Solving LP Problems in a Spreadsheet
Week 4	Feb 8	Sensitivity Analysis and the Simplex Method
Week 5	Feb 15	Sensitivity Analysis and the Simplex Method (con't)
Week 6	Feb 22	Exam 1 (covers materials discussed in week 1 – week 5)
Week 7	Mar 1	Network Modeling
Week 8	Mar 8	Integer Linear Programming
Week 9	Mar 15	Spring break No class
Week 10	Mar 22	Goal Programming and Multiple Objective Optimization
Week 11	Mar 29	Exam 2 (covers materials discussed in week 7 – week 10)
Week 12	Apr 5	Regression Analysis
Week 13	Apr 12	Time Series Forecasting
Week 14	Apr 19	Queuing Theory
Week 15	Apr 26	Decision Analysis
Week 16	May 3	Exam 3 (covers materials discussed in week 11 – week 15)

Grading Policy

Exam 1	20%
Exam 2	22.5%
Exam 3	27.5%
Assignments	30%

Grading Scale

≥ 91	A	83-86	B	70-75	C
89-91	A-	79-83	B-	< 70	F
86-89	B+	75-79	C+		

Important Dates

Assignments /Exam	Date	Comments
Assignments 1	Feb 1	
Assignments 2	Feb 8	
Assignments 3	Feb 22	
Exam 1	Feb 22	Given online in eLearning
Assignments 4	Mar 8	
Assignments 5	Mar 22	
Assignments 6	Mar 29	
Exam 2	Mar 29	Given online in eLearning
Assignments 7	Apr 12	
Assignments 8	Apr 19	
Assignments 9	Apr 26	
Assignments 10	May 3	
Exam 3	May 3	Given online in eLearning

- All assignments are due the beginning of the class.
- Exams will be available for 24 hours to take.

Course Policies

Homework Assignments

- Students are allowed to work in groups of maximum two on homework assignments.
- Only one submission per group is required. Solutions must be submitted into eLearning.
- Group's members name must be clearly typed on the solution's cover page. Otherwise, the missing name would not receive any credits.
- All typed solutions and Excel files must be submitted via eLearning by the deadline.
- For questions answered in Solver, the excel file must be uploaded.
- No late submissions will be accepted, no matter what.
- No solution will be accepted via emails.
- General questions regarding assignments must be posted on the course Discussion Board.
- Please do not email me asking if your answer to a question is correct.

Exams

- Three noncumulative exams will be given, with exam 1 accounting for 20 percent of the overall grade, exam 2 accounting for 22.5 percent of the overall grade, and exam 2 accounting for 27.5 percent of the overall grade.
- Exams will be given online via eLearning.
- Exams will cover material from the textbook, instructor’s lectures, handouts, and homework.
- If you miss an exam without a properly documented excuse conforming to university policy, your grade will be zero for the missed exam(s).
- Make-up exams are offered only for legitimate and documented reasons, such as documented illness or family emergencies.
- Under no circumstances will a make-up exam be offered because a student is going on a trip or conducting other personal business.

Extra Credits

I reserve the right to reward students who engage in the discussion board’s activities (such as asking questions, answering both my and fellow classmates’ questions, providing comments and suggestions, etc.) by raising their final grade by a maximum of half a letter grade.

***Final Note:** Claims against grading can only be made for one week following the return of the exam or assignment. Periods when the university is not holding classes will not count towards this week.*

University Policies

For information on a host of UTD course policies, see <http://go.utdallas.edu/syllabus-policies>. Several, but not all, of these policies are addressed in more detail below.

Nondiscrimination

UTD's Nondiscrimination Policy states that, “The University of Texas at Dallas is committed to providing an educational, living and working environment that is welcoming, respectful and inclusive of all members of the university community. An environment that is free of discrimination and harassment allows members of the university community to excel in their academic and professional careers. To that end, to the extent provided by applicable federal and state law, the University prohibits unlawful discrimination against a person because of their race, color, religion, sex (including pregnancy), national origin, age, disability, genetic information, or veteran status. The University's commitment to equal opportunity extends its nondiscrimination protections to include sexual orientation, gender expression and gender identity.

“Retaliation against a person who files a claim of discrimination, participates in a discrimination investigation or proceeding, or otherwise opposes an unlawful employment practice is prohibited.

“A person who believes that he or she has been subjected to discrimination or harassment in violation of this policy and seeks to take action may use either the informal resolution process or the formal complaint process, or both. The informal resolution and formal complaint process described in this policy are not mutually exclusive and neither is required as a pre-condition for choosing the other; however, they cannot both be used at the same time.”

For the full policy statement, see <https://policy.utdallas.edu/utdbp3090>.

AccessAbility Services

It is the policy and practice of The University of Texas at Dallas to make reasonable disability-related accommodations and/or services for students with documented disabilities. However, written notification from the Office of Student AccessAbility (OSA) is required (see <http://www.utdallas.edu/studentaccess>). If you are eligible to receive disability-related accommodations and/or services and to ensure accommodations will be in place when the academic semester begins, students are encouraged to submit documentation four to six weeks in advance. Students who have questions about receiving accommodations, or those who have, or think they may have, a disability (mobility, sensory, health, psychological, learning, etc.) are invited to contact the Office of Student AccessAbility for a confidential discussion.

The Office of Student AccessAbility provides:

- a. Academic accommodations for eligible students with a documented permanent physical, mental or sensory disability
- b. Facilitation of non-academic and environmental accommodations and services
- c. Resources and referral information, and advocacy support as necessary and appropriate.

OSA is located in the Student Services Building, suite 3.200. They can be reached by phone at 972-883-2098, or by email at studentaccess@utdallas.edu.

Academic Integrity

Students are expected to adhere to UTD's Student Code of Conduct:

Because the value of an academic degree depends on the absolute integrity and character of the student the university expects all students to maintain a high level of responsibility with respect to their behavior. As a member of the university community, it is imperative that a student maintain a high standard of individual responsibility and civility.

The dean may initiate disciplinary proceedings under Subchapter D against a student accused of a violation of the Code of Conduct upon complaint by a faculty member, a student or other source.

Academic dishonesty could result in disciplinary action from the university. Penalties could include receiving a grade of "F" for this course, expulsion or even the revocation of a degree. With respect to academic dishonesty, see Section 49.10 from the Student Code of Conduct (<http://policy.utdallas.edu/utdsp5003>), which includes:

- a) **Plagiarism:** The adoption or reproduction of ideas, words, statements, images or works of another person as one's own without proper acknowledgement.
- b) **Cheating:** Using or attempting to use unauthorized materials, information, or study aids in any academic exercise. Academic exercise includes all forms of work submitted for credit or hours.
- c) **Fabrication:** Falsification or creation of any information, data or citation in an academic exercise.

d) **Collaboration and/or Collusion:** Seeking or providing aid to another student in completion of any assignment submitted for academic credit without permission from the faculty member.

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 go to [UT Dallas Syllabus Policies](#) webpage for these policies.

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