

BUAN / OPRE 6398-0W1 – Prescriptive Analytics

Professor: Dr. Avanti Sethi

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Office Hours: Virtual, using Micosoft Teams

Text: Ragsdale, C. T. Spreadsheet modeling & decision analysis: A practical introduction to business analytics (8th ed.). Stamford, CT: Cengage Learning. (ISBN-10: 1-285-41868-9; ISBN-13: 978-1-285-41868-1).

Software: The software to be used in this course, Analytic Solver Platform (Solver), is an Excel add-in both for Windows-based systems and Apple computers.

Prerequisites: OPRE 6301 : Statistics & Data Analysis

Course Modality and Expectations

Instructional Mode	<i>Asynchronous / Online.</i> For details, please visit https://www.utdallas.edu/fall-2020/fall-2020-registration-information/
Course Platform	MS Teams
Expectations	No attendance required.
Asynchronous Learning Guidelines	https://www.utdallas.edu/fall-2020/asynchronous-access-for-fall-2020/

Computer Requirement: You do need a computer for this class.

*You must have access to a **Webcam** or you'll not be able to take your tests which will be proctored (for free) by an online service, HonorLock.*

Please review the important technical requirements on the [Getting Started with eLearning](#) webpage. More info is available here: [Student eLearning Tutorials](#). Also, please get familiar with Microsoft Teams which will be used for office hours / test reviews.

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>.

Course Description: 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.

Learning Objectives

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, & interpreting results. Upon successful completion of this course, students should be able to:

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

E-mail: You can email me at ASethi@utdallas.edu using your personal email account, smart phone, or whatever. ***Please make sure that you put OPRE 6398 in the subject field of every email.***

Grading Policy: There will be 3 tests and multiple quizzes / HW. The Quizzes / HW will be mostly Chapter-based.

Assessment	Test 1	Test 2	Test 3	HW / Quizzes
Weight	25%	25%	25%	25%

The Quizzes are to be done / submitted online. You may have multiple attempts on some of them, and if so, your score will be the highest of all the attempts. Note: The questions may change between attempts (just the numbers, not the narration). Homework will be Excel based where you'll have to upload the Excel file.

The tests will be online and will be proctored by an online service HonorLock (**check class website for updates**). You are allowed a 5x8 cheat-card (written both sides) for each test. You can use any calculator. Cell phones are not allowed.

The grade distribution will be based on the following table.

Letter grade	A	B+	B	C+	C	F
Percentage	90%	85%	80%	75%	70%	< 70%

BUAN 6398-0W1 ::: Prescriptive Analytics ::: Tentative schedule		
Tue-19-Jan	Chapter 1: Intro to Modeling and Decision Analysis	
	Chapter 11: Time Series Forecasting	
Mon-25-Jan	Chapter 11: Time Series Forecasting	
	Chapter 13: Queuing Theory	
Mon-01-Feb	Chapter 13: Queuing Theory	
	Chapter 13: Queuing Theory	
Mon-08-Feb	Chapter 14: Decision Analysis	
	Chapter 14: Decision Analysis	
Mon-15-Feb	Test 1 Review (Virtual; Optional; Date - tentative)	7:00 PM - 9:00 PM
Sun-21-Feb	Test 1 (Proctored; HonorLock) Ch 11, 13, and 14	4:00 - 6:30 PM
Mon-22-Feb	Chapter 2: Introduction to Optimization and LP	
	Chapter 3: Modeling and Solving LP Problems	
Mon-01-Mar	Chapter 3: Modeling and Solving LP Problems	
	Chapter 4: Sensitivity Analysis	
Mon-08-Mar	Chapter 4: Sensitivity Analysis	
	Transportation method	
Mon-15-Mar	Spring break	
	Spring break	
Mon-22-Mar	Assignment Method	
	Assignment Method	
Mon-29-Mar	Test 2 Review (Virtual; Optional; Date - tentative) Ch 2 - 4, Transportation, Assignment	7:00 PM - 9:00 PM
Sun-04-Apr	Test 2 (Proctored; HonorLock)	4:00 - 6:30 PM
Mon-05-Apr	Chapter 6: Integer Linear Programming	
	Chapter 6: Integer Linear Programming	
Mon-12-Apr	Chapter 5: Network Modeling	
	Chapter 5: Network Modeling	
Mon-19-Apr	Chapter 5: Network Modeling	
	Chapter 5: Network Modeling	
Mon-26-Apr	Chapter 15: Project Management	
	Chapter 15: Project Management	
Mon-03-May	Test 3 Review (Virtual; Optional; Date - tentative)	7:00 PM - 9:00 PM
Sun-09-May	Test 3 (Proctored; HonorLock)	4:00 - 6:30 PM

Test / Quiz / Homework details		
Item	Due date	Time
Quiz 11	Wed-03-Feb	11:59 PM
Quiz 13	Wed-10-Feb	11:59 PM
Quiz 14	Wed-17-Feb	11:59 PM
Test 1	Sun-21-Feb	4:00 PM
HW-LP	Sun-14-Mar	11:59 PM
Quiz-LP	Sun-21-Mar	11:59 PM
Quiz-Transportation	Sun-28-Mar	11:59 PM
Quiz-Assignment	Sun-28-Mar	11:59 PM
Test 2	Sun-04-Apr	4:00 PM
HW-IP	Sun-18-Apr	11:59 PM
HW-Network	Sun-02-May	11:59 PM
Quiz-15	Sun-02-May	11:59 PM
Test 3	Sun-09-May	4:00 PM

Special Assistance: For help with test anxiety or time management, the following resources are available: your academic advisor, the Learning Resource Center (MC2.402), the Counseling Center (SU1.608), the New Student Programs Office (SU1.610), your instructor.

Expectation: University guidelines recommend that you study 2-3 hours per week for every credit hour in which you are enrolled. That is, University expectations suggest you spend 4-9 hours outside of class every week on OPRE6301 homework and studying.

Student Conduct & Discipline: The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, A to Z Guide, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3, and in Title V, Rules on Student Services and Activities of the university's Handbook of Operating Procedures. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity: The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Email Use: The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class: The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Incomplete Grade Policy: As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long

semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

Student Grievance Procedures: Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's Handbook of Operating Procedures.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Disability Services: The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union (972-883-2098). Office hours are Monday and Friday, 8:30 a.m. to 6:30 p.m.; Tue and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days: The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.