

**The University of Texas at Dallas  
Jindal School of Management  
Course Syllabus**

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**Course Information**

*Course Prefix, Number, Section*      *BUAN/OPRE 6398.002*  
*Course Title*                                *Prescriptive Analytics*

*Term*    *Fall 2024*  
*Days & Times*                                *Tuesday 10 am – 12:45 pm*  
   *JSOM 1.102*

**Instructor Contact Information**

*Instructor*                                        *Hien Nguyen*  
*Email Address*                                *Hien.Nguyen7@utdallas.edu*  
*Office Location*                                *JSOM 3.617*  
*Office Hours*                                    *Through Teams M-W 11 am – 12 pm or by appointment*  
*Contact through*                                *MS Teams, Email*

**TA Contact Information**

*TA*  
*Email Address*  
*Office Hours*

*TA*  
*Email Address*  
*Office Hours*

**Class Attendance and Participation**

Regular class participation and attendance are expected. Indeed, students are still strongly encouraged to engage in class lecture and discussion to have better chance studying the materials and have questions answered.

**Class Materials**

- Required Textbook: Cliff Ragsdale (2017). Spreadsheet modeling & decision analysis: A practical introduction to business analytics (8<sup>th</sup> edition). Stamford, CT: Cengage Learning.
- Recommended Textbook: Anderson et al. (2012). An Introduction to Management Science Quantitative Approaches to Decision Making (12<sup>th</sup> edition). CT: Cengage Learning → Helpful for more mathematical and statistical knowledge
- Optional Software: Analytic Solver Platform  
This is an Excel add-in and run on Microsoft Excel 2007 or higher.
  - For installation steps, follow “Analytic Solver Student Installation Guide.pdf” uploaded on eLearning.

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

### **Course Pre-requisites, Co-requisites, and/or Other Restrictions**

OPRE 6301: Quantitative Introduction to Risk and Uncertainty in Business

### **Course Description**

This course provides more applicable analytical tools to make better decisions and improve the efficiency of a system. Topics covered include linear programming, integer programming, network models, time series forecasting, queuing theory, decision analysis, and project management. The course will equip students with useful concepts, theories, and solution methods in predictive analytics. The course will contain multiple practical applications of the models being discussed in the lecture.

### **Student Learning Objectives/Outcomes**

Upon successful completion of the course, the student should 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 the results. In addition, the students should be able to:

- Use Analytic Solver Platform efficiently
- 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
- Interpret the obtained results and implement them in practice

### **Tentative Schedule**

Week 1	Aug 20	Syllabus review Introduction to Optimization and Linear Programming
Week 2	Aug 27	Modeling and Solving LP Problems in a Spreadsheet
Week 3	Sep 3	Sensitivity Analysis
Week 4	Sep 10	Sensitivity Analysis (continue)
Week 5	Sep 17	Network Modeling
Week 6	Sep 23 – Sep 27	Exam 1
Week 7	Oct 1	Integer Linear Programming
Week 8	Oct 8	Goal Programming and Multiple Objective Optimization
Week 9	Oct 15	Regression Analysis
Week 10	Oct 21 – Oct 25	Exam 2
Week 11	Oct 29	Time Series Forecasting (online)
Week 12	Nov 5	Time Series Forecasting (continue) Queuing Theory
Week 13	Nov 12	Decision Analysis
Week 14	Nov 19	Decision Analysis (continue)
Week 15	Nov 26	No class
Week 16	Nov 22 – Nov 23	Exam 3

	Dec 7 – 13 (tentative)	
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### **Grading Policy**

Homework: 25%

Quizzes: 15%

Exam 1: 20%

Exam 2: 20%

Exam 3: 20%

Final grades will be assigned as follow:

>93 A

89-93 A-

86-89 B+

83-86 B

79-83 B-

75-79 C+

70-75 C

<70 F

### **Course Policies**

#### ***Homework Assignments***

- Homework is given after each topic is finished. You would have at least one week to work on the assignment.
- Students are allowed to work in groups of up to **four** on homework assignments.
- Only one submission per group is required. Solutions must be submitted into eLearning through the Assignment tab.
- Group's member names must be clearly typed on the solution's cover page. Otherwise, the missing name would not receive any credits.
- All **typed** solutions along with the Excel files used for HWs must be submitted via eLearning. Hand-written submissions will not be graded.
- Solutions must be converted to a pdf before submission. Otherwise, points will be deducted.
- For questions answered in Solver, the excel file **Must** be uploaded. Missing excel files result in a loss of 50 points.
- No late submissions will be accepted, no matter what. Don't wait until the last minute!

#### ***Quizzes***

- Three quizzes will be given.
- Quizzes will be given online in eLearning.

- Quizzes will cover material from the textbook, instructor’s lectures, handouts, and homework.
- If you miss a quiz without a properly documented excuse conforming to university policy, your grade will be zero for the missed exam(s).
- Make-up quizzes are offered only for legitimate and documented reasons, such as documented illness or family emergencies.

### ***Exams***

- Three noncumulative exams will be given.
- Exams will be given online in eLearning and taken in the **TESTING CENTER**.
  - You will need to reserve the exam in the Testing center no later than 48 hours before the appointment time. Please refer to the exam periods as define in the syllabus.
  - The registration link: <https://ets.utdallas.edu/testing-center/students/>
  - The exam is open notes: you can use physical and digital notes from eLearning but no other applications are allowed.
  - You will use Excel with the add-in Solver during the exam.
- 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.

### ***Extra Credit***

There are no extra credits. However, I might consider extra credit opportunity depending on the grade of the class as a whole.

### **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>.

### **Accessibility 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](mailto:studentaccess@utdallas.edu). *Course syllabus* Page 7 of 8

## **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."

## **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 <http://go.utdallas.edu/syllabus-policies> for these policies.

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