DSCI 3870: Management Science

Semester: Fall 2026

Section 001

INSTRUCTOR INFORMATION

Instructor: Athena Alimirzaei
Office: 385N BLB
E-mail: athena.alimirzaei@unt.edu

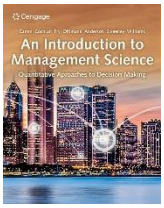
Class time: Thursdays 2:25 PM - 5:15 PM
Class location: BLB 075
Office Hours: Thursdays 1:00 – 2:00 PM (In-person)

COURSE OBJECTIVES

To provide the student with a working knowledge of management science/operations research techniques for use in business. This will be achieved by using a real-world problem-oriented approach, and using examples that emphasize the multi-disciplinary nature of business problems. Spreadsheets will be used to strengthen students' ability to make business decisions. The course uses case studies and assignments that require communication and interaction to strengthen students' understanding. Techniques covered will include linear and integer programming, network flow optimization, real-world applications, and implementation issues. This course may seem challenging, but it will provide you with "current" and "marketable" skills in the field of Quantitative Analysis/Business Analytics.

Prerequisite(s): Please see UNT Undergraduate Catalog:
(It is assumed that students taking this course have completed the college algebra course and also have a good foundation in calculus, basic statistics and probability theory as covered in the basic statistics course. Although some review of elementary concepts and terminology is provided in the textbook, it is not intended to replace a complete course, but rather to refresh your memory. While a high degree of mathematical skill is not necessary in an "applied" course such as this, there are certain insights into the course that are gained through the mathematics involved.)

REQUIRED TEXTBOOK



Anderson, Sweeney, Williams, Camm, Cochran, Fry and Ohlmann, *An Introduction to Management Science: Quantitative Approaches to Decision Making,* 16th Edition*, © 2022, Cengage Learning ISBN-10: 0357715462, ISBN-13: 9780357715468.

You can also purchase or rent the digital version of the textbook at the following address: https://www.cengage.com/c/student/9780357715468/

If you intend to enroll in DSCI 4510 later, please don't sell your book. We will be using it in DSCI 4510, too.

REQUIRED RESOURCES

Business or scientific calculator; must be able to perform at least the following functions: square, square root, raise to nth power, extract nth root, logarithm. The lack of a calculator does not excuse the student from making math errors on exams. Graph paper will also prove to be quite useful.

COURSE DELIVERABLE

- There are five individual assignments in this course, each of which must be submitted online by the stated due date. All Assignments are due on Thursdays, at 11:50 pm.
- You will also complete three quizzes on Canvas; the two highest scores will count toward your final grade. Quizzes will be closed-book, closed-notes. All Quizzes are due on Thursdays at 11:50 pm.
- There will be two exams (Exam 1 and Exam 2). The exams will be closed-book, closed-notes.
- The course includes one group assignment, which you can think of as a mini-project, to be completed in teams of four. It will be released in Week 5, and the project presentation will take place in **Week 13 (November 12).** Further details on group formation and the assignment will be posted on Canvas.

TOPICS AND TENTATIVE LECTURE SCHEDULE

This schedule is subject to change according to the needs of the class. I will try my best to give you advance notice about any changes.

Week	Topics	Course Deliverable
Week 1: Aug 20	Overview of Management Science and Linear Programming	
Week 2: Aug 27	Linear Programming, Modeling and Graphical Solution	
Week 3: Sep 3	Computer Solution -Excel	Assignment 1
Week 4: Sep 10	Classic sensitivity analysis	
Week 5: Sep 17	100% rule in sensitivity analysis	Assignment 2, Quiz 1
Week 6: Sep 24	Applications of Linear Programming	Assignment 3
Week 7: Oct 1	Exam Review	
Week 8: Oct 8	Exam 1	
Week 9: Oct 15	Network flow models	Quiz 2
Week 10: Oct 22	Network flow models	
Week 11: Oct 29	Network flow models	Assignment 4
Week 12: Nov 5	Integer linear programming	
Week 13: Nov 12	Project presentation	Assignment 5
Week 14: Nov 19	Exam 2 Review	Quiz 3
Week 15: Nov 26	Thanksgiving break	
Week 16: Dec 3	Exam 2	

EVALUATION

Grades are a measure of a student's performance in individual courses. Each student shall be judged on the basis of how well he or she has mastered the course materials.

5 Assignments = 30% (6% each)
Three Quizzes = 10%
Exam 1 = 20%
Exam 2 = 20%
Group Project = 20%

Letter Grades:

90% + = A 80% + = B 70% + = C 60% + = D Below 60% = F

ASSIGNMENTS: There are five assignments in this course. Please make sure to submit your solutions to these assignments online by their due dates. All homework assignments are to be completed and submitted individually.

Case Quizzes: There will be three (3) case quizzes. These quizzes will comprise 10% of your total grade. Please note that the due dates are firm and will not be extended. Additionally, the lowest score among the three quizzes will be dropped.

Exams: There are two noncumulative exams. Exam information and marks will be posted on the course website. Since exams are not cumulative, please take both exams. Missed exams will receive zero marks unless a legitimate excuse is presented. As this is a face-to-face class, both exams will be administered during class time and in the designated classroom. Online exam options will not be available.
Students are responsible for their materials on an exam. There will be no loaning or sharing of calculators, or other items, or sharing of any type of information among students while taking the exam. If the student fails to bring his or her required materials, she or he must perform the exam to the best of his or her ability without them. Students are encouraged to collect the exams when they are returned.

USE OF ARTIFICIAL INTELLIGENCE

Artificial intelligence may be used for learning and practice, but it is strictly prohibited for course deliverables (e.g., assignments, quizzes). Violations will result in a failing grade (F) for the course.

GROUP PARTICIPATION POLICY

Details related to team formation for the group project will be delivered on the course website. The grading policy for every group work is peer evaluation. Individual team members may receive a higher or lower score based on the quality of their participation and contributions to the work.
Because of the possibility that some team members may not contribute to the overall team success, a team may document problematic behaviors and recommend that a nonperforming member of the team be "fired". In such circumstances, I will meet with the team and create a performance improvement plan (PIP) for the offending team member. If the team member fails to meet the obligations outlined in the PIP, or if the problematic behaviors recur after completion of the PIP, the student will be removed from the team and must complete the group project alone. The maximum grade that may be achieved on the project by an individual fired from their team is 60% of the associated points.

GENERAL COMMENTS

1. Doing the assignments is essential for success in this course. You are encouraged to keep

up with the homework and meet the submission deadlines.

2. Regular monitoring of the course materials posted on Canvas is required. No make-up exams will be offered unless you have a UNT-approved excuse. Whenever applicable, such an excuse is to be provided to the instructor in writing, as early as possible.
3. The assignments must be submitted through Canvas, and alternative submission methods (e.g., paper, email, USB drive) are not acceptable unless prior permission of the instructor is obtained. Any assignment or deliverable that is submitted after its corresponding submission deadline will not be graded and will result in a zero. Consequently, make sure that you do not leave your submissions for the last minute.
4. You have the final responsibility for seeing that you properly withdraw before the scheduled last drop day, in case you wish to withdraw from/drop the course. If you stop attending class, you should execute the drop procedure since failure to do so will result in a grade of "F" which cannot be changed.
5. Missed exams will receive zero marks unless a legitimate excuse is presented. If you miss an exam, please follow the steps below:
    - **Step 1:** If you miss an exam for any acceptable (university-approved) reason, please e-mail the instructor as soon as you are able about the reason why you missed the exam.
    - **Step 2:** Then, you should provide the instructor with proof in the form of an official document as soon as you are able, with proper documentation. Your documentation should be acceptable based on an interpretation of the College of Business or the University policy.
    - **Step 3:** After the instructor receives an acceptable proof, the instructor will then e-mail you to schedule a make-up exam.

DISABILITIES

The College of Business Administration strives to comply with the **Americans with Disabilities Act** in making reasonable accommodations for qualified students with disability. If you have an established disability as defined in the "Act" and would like to request accommodation, please see your instructor as soon as possible. Office hours and phone number are shown at the top of this syllabus. Students facing accessibility challenges of online content (example, screen reader users) may contact the professor to discuss as well.

HONOR CODE

http://facultysuccess.unt.edu/academic-integrity:

As an institution of higher education, UNT is committed to creating and sustaining an environment that facilitates students' academic, personal, and ethical development. This commitment balances freedom of individual choice and expression with the expectation that individual members of the

community will:

- Be honest
- Demonstrate self-respect and respect for others
- Demonstrate respect for the law and University policies, procedures, and standards.

Engaging in any form of academic dishonesty, such as plagiarism (***representing the work or ideas of others as one's own without giving proper acknowledgment***), cheating (e.g., ***using unauthorized resources or assistance on coursework, copying the work of another person, falsifying data, sabotaging the work of others, and the unauthorized use of electronics, media, or data***), or other acts generally understood to be dishonest by faculty or students in an academic context will subject the student to disciplinary action. Any UNT policy regarding grounds for Dismissal from the Course is effective in this course.

CAMPUS CLOSING POLICY

In the event of an official campus closing, please check your UNT e-mail account (EagleConnect) for instructions about how to turn in various assignments, how the due dates are modified, etc. I will do my best to accommodate your needs.

DEPARTMENT, COLLEGE, and OTHER POLICIES

1. COMPLAINTS: If you wish to register a complaint, you should first discuss your complaint with me. If you wish to pursue the matter further, you may contact the ITDS Department Chair, Dr. Anna Sidorova, but make sure you first discuss it with your instructor.
2. EXAMS: You are required to take all exams, unless a written medical or other UNT-approved excuse is provided. In that case, you should discuss the alternative arrangements with your instructor. Please have a picture ID in your possession when taking all exams. As a general rule, the course format requires **no make-up exam** be given.
3. ACADEMIC INTEGRITY: This course adheres to the UNT policy on academic integrity. The policy can be found at Student Academic Integrity Policy (06.003) (https://policy.unt.edu/policy/06-003). If you engage in academic dishonesty, **you will receive** a failing grade on the test or assignment, or **a failing grade in the course.** In addition, the case may be reported to the UNT Dean of Students/Academic Integrity Office, which maintains a database of related violations.
4. STUDENTS WITH DISABILITIES: The College of Business complies with the **Americans with Disabilities Act** in making reasonable accommodations for qualified students with disability. If you have an established disability you should register with the Office for Disability Accommodation and receive further instructions. Please see your instructor as soon as possible if you have any questions.
5. DEADLINES: Dates of drop deadlines, final exams, etc., are published in the university catalog and the schedule of classes. Please be sure you keep informed about these dates.

6. SPOT: The Student Perceptions of Teaching (SPOT) is a requirement for all organized classes at UNT. This short Web-based survey will be made available to you at the end of the semester/session, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider SPOT to be an important part of your participation in this class.
7. CELL PHONES: As a courtesy to your instructor and to your fellow classmates, you are asked to set your cell phone to vibrate, or switch it off. In case of a personal emergency, if you must use your cell phone, you are asked to step out of the classroom.
8. INCOMPLETE GRADE (I): The grade of "I" is not given except for rare and very unusual emergencies, as per university guidelines. An "I" grade cannot be used to substitute your poor performance in class. If you think you will not be able to complete the class, please drop the course.
9. CAMPUS CLOSING: In the event of an official campus closing, please check your UNT e-mail (Eagle Connect) for instructions on how to turn in assignments, how the due dates are modified, etc.

Emergency Evacuation Procedures for Business Leadership Building:

- **Severe Weather** In the event of severe weather, all building occupants should immediately seek shelter in the designated shelter-in-place area in the building. If unable to move safely to the designated shelter-in-place area, seek shelter in a windowless interior room or hallway on the lowest floor of the building. All building occupants should take shelter in rooms 055, 077, 090, and the restrooms on the basement level. In rooms 170, 155, and the restrooms on the first floor.
- **Bomb Threat/Fire** In the event of a bomb threat or fire in the building, all building occupants should immediately evacuate the building using the nearest exit. Once outside, proceed to the designated assembly area. If unable to safely move to the designated assembly area, contact one or more members of your department or unit to let them know you are safe and inform them of your whereabouts. Persons with mobility impairments who are unable to safely exit the building should move to a designated area of refuge and await assistance from emergency responders.

Class videos

Class videos (if posted) are the intellectual property of the university or instructor and are reserved for use only by students in this class and only for educational purposes. Students may not post or otherwise share the recordings outside the class, or outside the Canvas Learning Management System, in any form. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

Academic Integrity Policy

Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. For this course, the ITDS ethics statement clearly delineates what activities are considered as violation, including some examples. An academic integrity violation will lead to a "F" grade in this course.

ADA Policy

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time; however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website (https://disability.unt.edu/).

The College of Business Administration complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disability. If you have an established disability as defined in the "Act" and would like to request accommodation, please contact the ODA and your instructor (Dr. Alimirzaei) as soon as possible: the instructor's office hours and phone number are in the syllabus.

Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004)

The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

Retention of Student Records

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student's records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University's policy. See UNT Policy 10.10, Records Management and Retention for additional information.

Acceptable Student Behavior

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. Visit UNT's Code of Student Conduct

(https://policy.unt.edu/policy/07-012) to learn more.