



BUSA 542: Applied Decision Modeling

Fall I, 2023, Course # 86842, Section 81B

Instructor: Dr. William J. Harris, Adjunct Professor of Business Analytics

Email Address: William.Harris@tamu.edu

Course Location: Dallas, Building DAL, Classroom TBD

Office Hours & Contact Information: Tuesday - Thursday: 10:00 AM – 3:00 PM CDT/CST (or by appointment via Zoom). Most of the time I will work remotely, but I will be on campus occasionally. However, I will make myself available for appointments at a convenient time for both students and myself. The best way to contact me is by email. To protect your academic privacy, please always send me emails from your tamuc.edu email. Please use emails to ask me questions. This is the quickest way to reach me.

COURSE INFORMATION

Course Modality

This course is designated as In-Person. Meaning, the class will meet on campus once each week per the instructor's schedule. Furthermore, all course assignments and materials will be available and submitted online via myLeo (D2L). Students may proceed working on and submitting assignments in advance of due dates if they so choose with the exception of the Team and Individual Case Studies. Assignment and activity due dates will be by 11:59 CDT/CST every Sunday per the course schedule posted on D2L.

Important information covering learning objectives, learning materials and clarifications are presented in my once-a-week live lecture. In addition, I will also cover course expectations as a part of the lectures. It is mandatory that students attend all lectures. However, there may be times that a student cannot attend due to work obligations or personal hardship and must inform the Professor in advance if they cannot attend the live lectures. It is the prerogative of the faculty to drop students from courses in which they have accrued excessive absences as defined in the course syllabus. Therefore, there is a limit of missing up to 3 live lectures in order to pass this course.

COVID-19 Related

Texas A&M requires the use of face-coverings in all instructional and research classrooms/laboratories. Exceptions may be made by faculty where warranted. Faculty have management over their classrooms. Students not using face-coverings can be required to leave class. Repetitive refusal to comply can be reported to the Office of Students' Rights and Responsibilities as a violation of the student Code of Conduct. Students should not attend class

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when ill or after exposure to anyone with a communicable illness. Communicate such instances directly to your instructor. Faculty will work to support the student getting access to missed content or completing missed assignments.

Required Textbooks

Title: **Spreadsheet Modeling and Decision Analysis: A Practical Introduction to Business Analytics (8th Edition)**
Author: Ragsdale, Cliff
Publisher: CENGAGE
Publication Date: 2018
ISBN: 9781305947412

You may use any format of this textbook to include the use of and eBook version of this textbook. In addition, a used book works just fine. You will do not need the access code of this book. Make sure you study the content as listed on myLeo Online (D2L) for each weekly module.

COURSE DESCRIPTION

This is an applied course developing fundamental knowledge and skills for applying management science models to business decision-making. Topics include decision analysis, simulation and risk through the use of optimization/Linear Programming models, including the use of software for business applications.

Course Goals

1. Explain the categories, characteristics, goals and benefits of data analytics and quantitative modeling in support of decision-making.
2. Explain what optimization and linear programming provide in a complete business environment.
3. Explain and recognize the use of Linear Programming along with various kinds of managerial problems to which linear programming can be applied.
4. Apply resource allocation, cost benefit (goal Programming) and network flow optimization modeling along with sensitivity analysis.
5. Explain Non-Linear Programming and the various approaches to solving problems.
6. Develop the ability to create recommendations, compose professional business reports and make presentations for decision-making based on analytical models

College of Business Student Learning Outcomes

1. Students will demonstrate proficiency in spoken communications by delivering clear and well-structured business presentations.
2. Students will demonstrate proficiency in written communications by creating clear and well-structured professional business documents
3. Students will identify and evaluate ethical business issues
4. Students will identify and evaluate global business challenges
5. Students will be analytical problem solvers in business environments.

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Through a combination of lectures, textbook work and business case studies, graduate students will learn how business analytical models can be leveraged for decision-making. The textbook work and case studies will illustrate how companies take advantage of different sources of data, use different analytical techniques to improve performance, gain an understanding of optimizing results and employing analytical methods to translate data into key insights.

GRADING

This is a fast-paced course spanning eight weeks. Grades are based on total points and will be earned based on the Final Grading section of this syllabus. Your weekly textbook, research and supplemental material assignments will be announced in class and posted in your D2L course area.

Each student must complete an individual research report and two (2) case studies (1 Team and 1 Individual) with at least a 70% (C-) grade for all three in order to receive a passing grade in this course. All assignments shall be turned in using the myLeo (D2L) online course environment. The percentage points earned on the two case study assignments (team & individual) will be multiplied by 30 to obtain the final assignment grade. For instance, if you achieve 90% of the 30 available points on a case, you will receive 27 points toward your final course grade. Do not use underlines, highlights or italics for any part of your written answers. The report and case studies shall be submitted through D2L and Turn-It-In will be used to assess originality and to detect plagiarism. Late assignments may receive 10% penalty for each late day.

Module Assignments, Research & Participation Grading

This course involves intensive in-class discussion of cases, exercises and other information from your learning as well as from others in the class. Students will be graded on completing selected textbook and supplemental research assignments and be awarded points for such. In addition, your classmates will depend on your participation. Class participation is graded based on the extent to which you ask questions, answer questions and otherwise participate in open discussions during class and online. In addition, students are expected to provide introductory background information and complete the course evaluation. Student will earn participation points for these submittals and class engagement.

Note: The atmosphere of the class is inclusive, non-critical, exploratory, professional and opinion forming. Honest academic search for facts, current status and investigation occurs in an open and risk-free environment. Ask your questions, formulate your thoughts and learn to express them in class while being respectful of others' beliefs, values and contributions.

Team Project Case Study

For the Team case study, each student will be assigned to a team early in the term. A single grade will be awarded for the group report and presentation. Each student in the group will receive the group grade if they have sufficiently participated in the project as determined by their peers and the Professor. A total of 100 percentage points are possible for the team case study. This includes the point values which are assigned to each section or question plus ten (10) percentage points which are earned based on following the prescribed assignment format, correct grammar and clarity. The use of answers from external sources is considered plagiarism – see the

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academic integrity section of this syllabus. Insufficient team participation and teamwork may result in an individual point deduction determined by the Professor. Any individual deduction will be judged by the Professor based on observation and investigation along with the confidential results of the Peer Review forms from the team. Each team member will evaluate each individual team member's performance based on a PEER Review form and receive participation points for this assignment.

Individual Case Studies

Students will complete one (1) case study based on their individual work. The use of answers from external sources is considered plagiarism– see the academic integrity section of this syllabus. A total of 100 percentage points is possible for the case study. This includes the point values which are assigned to each section or question plus ten (10) percentage points which are earned based on following the prescribed assignment format, correct grammar and clarity. Each written case analysis should be approximately 4-6 pages in length with an emphasis on being concise. The proper writing style is to be based on APA (seventh edition) formatting, as a guide, for all answers that require a written explanation.

Bonus points

You can participate in the instructor assigned activities to get a maximum of 3 points for bonus in this semester to improve you grade.

Final Grade

Your final grade will be a weighted average comprised of the following:

Assignment	Available Points as a % of Final Grade
Textbook Assignment	5
Participation	5
Team Case Study on Resource Optimization modeling, presentation and Peer Evaluation	30
Individual Case Study (Goal - Cost/Benefit Optimization)	30
Analytic Modeling Research Report	15
Supplemental Assignments	15

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There are a total of 100 points that can be achieved in this course. At the end of this semester, if your accumulated point score is between 90 and 100, you will get an A; if it's between 80 and 89, you will get a B, between 70 and 79 a C and so on. Please note that the actual points will be used to calculate your final grade. No curving will be used in this class.

Points	Grade
90-100	A
80-89	B
70-79	C
60-69	D
Below 60	F

TECHNOLOGY REQUIREMENTS

You will need to use Microsoft office tools with the Excel Solver Add-In. It is recommended to use either Firefox or Chrome browsers to gain access to the online class materials - applicable to both Windows PC and Apple Mac users.

COMMUNICATION AND SUPPORT

If you ask me questions by emails, I will reply within 48 hours. However, I usually answer them much faster. If you have questions about software operations, please make sure to include the screenshots of the issues in the emails. All assignment due dates and time are central time in the United States.

COURSE AND UNIVERSITY POLICIES

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Gee Library- Room 132

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

StudentDisabilityServices@tamuc.edu

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Nondiscrimination Notice

Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See Code of Student Conduct from Student Guide Handbook). [Student Guidebook](#).

<http://www.tamuc.edu/admissions/registrar/documents/studentGuidebook.pdf>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: [Netiquette](#)

<http://www.albion.com/netiquette/corerules.html>

Counseling Center

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

Campus Concealed Carry

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to (<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>) and/or consult your event organizer). Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M Commerce campuses. Report violations to the University Police Department at 903-886- 5868 or 9-1-1.

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Course Policies

Communication: In this course, any electronic postings, emails, or electronic messages that disrupt the class or interfere with learning goals and objectives are unacceptable. Electronic communication - must be civil, respectful and cordial at all times. Any posting that disrupts or interferes with learning will be removed and the author of the posting will receive a written warning. A second disruptive posting will result in university procedures for academic misconduct.

Professional Behavior: Disruption of the classroom or the teaching environment is unacceptable and is considered a form of punishable academic misconduct. This includes email or any other form of communication. Disruption of the academic process includes act(s) or word(s) by a student in a classroom or teaching environment that in the estimation of a faculty member deflects attention from the academic matters at hand. Examples of such disruption encompass: walking in late, noisy distractions; persistent, disrespectful, and/or abusive interruptions; improper language, dress, and/or behavior; and actions that present a danger to the health, safety, and/or well-being of a faculty member, student, staff member, or guest. Disruption also includes tampering with, defacing, or stealing library or online materials. Punishment for such disruption can range from a verbal reprimand by the faculty member, dismissal from class, and/or a final grade assignment of “F,” for the course. In addition, the application of other university procedures for academic misconduct.

Academic Integrity: The university is an academic community and expects its students to manifest a commitment to academic integrity through rigid observance of standards for academic honesty. The university can function properly only when its members adhere to clearly established goals and values. Accordingly, the academic standards are designed to ensure that the principles of academic honesty are upheld. The following acts violate the academic honesty standards:

- Cheating — intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise.
- Fabrication — intentional and unauthorized falsification or invention of any information or citation in an academic exercise.
- Facilitating Academic Dishonesty — intentionally or knowingly helping or attempting to help another to violate any provision of this code.
- Plagiarism — the adoption or reproduction of ideas, words, or statements of another person as one’s own without proper acknowledgment.

Students are expected to submit tests and assignments that they have completed without aid or assistance from other sources unless otherwise instructed. Using sources to provide information without giving credit to the original source is dishonest. Students should avoid any impropriety or the appearance thereof in taking examinations or completing work in pursuance of their educational goals.

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COURSE REQUIREMENTS

The course is **classroom in-person** with Student Responsibilities or Tips for Success provided in the course online D2L. You are responsible for reviewing all announcements within the course D2L pages, responding to all emails and completing assignments on time. You are required to attend scheduled in-person lectures each week arriving at the start of the scheduled class. The in-person lectures are designed to provide students interactive learning and use of hands-on critical thinking tools. As a result, students must inform the instructor at least 3 days prior to being absent to scheduled lectures. Failure to do these items will adversely affect your grade. Please use the following tips to be successful.

1. Get the correct version of the textbook. The textbook forms an important part of course learning and offers reinforcement quizzes.
2. Review all the announcements. Check email daily for any feedback I will provide.
3. Please note, assignment due dates are generally Sundays and will notices be provided both in-person and posted in the D2L course environment.
4. Stay on schedule for textbook assignments and case study projects. A detailed schedule will be provided in the course D2L. Generally, it will be difficult for a student to succeed in this course if they are more than two weeks behind in their textbook assignments. Case study due dates are absolute with exception by the Professor.

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TENTATIVE COURSE OUTLINE & SCHEDULE

I anticipate that we will follow the schedule I've outlined in this syllabus, but I may make an adjustment based on what actually happens in the course. I may also change the basis for the course grade (if I need to eliminate an assignment or something of that nature). If I do so, I will inform you in writing. Remaining in the course after reading this syllabus will signal that you accept the possibility of changes and responsibility for being aware of them.

Week/Module	Content Topic
1	Introduction to Analytical Modeling & Decision Analysis Student Introductions and Chapter 1 Begin Modeling Research Report
2	Introduction to Optimization and Linear Programming Chapter 2 Begin Team Optimization Case Study Project
3	Modeling & Linear Programming Problem Solving with Sensitivity Analysis Chapters 3 & 4 Modeling Research Report Assignment Due
4	Network Modeling Chapter 5 Textbook Questions/Problems Assignment Due
5	Team Case Study Presentations Team Case Study Report & Peer Review Due
6	Integer Linear Programming Chapter 6 Begin Individual Case Study Project
7	Goal Programming Chapter 7
8	Non-Linear Programming and Evolutionary Optimization Chapter 8 Course Evaluation Due Individual Case Study Due