



**BUSA 542: Course # 81854, Section 01W, Applied Decision Modeling,  
Fall 2024**

**INSTRUCTOR INFORMATION**

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

**Office Location:** Remote

**Office Hours:** Monday - Friday: 10:00 AM – 3:00 PM CDT/CST (or by appointment via Zoom). I am available remotely via Zoom or by appointment on campus.

**University Email Address:** [William.Harris@tamuc.edu](mailto:William.Harris@tamuc.edu)

**Preferred Form of Communication:** The best way to contact me is by my university email address in the D2L learning environment. To protect your academic privacy, please always send me emails from your tamuc.edu email.

**Communication Response Time:** If you ask me questions by email, I will reply within 48 hours.

**COURSE INFORMATION**

**Materials – Textbooks, Readings, Supplementary Readings**

**Course Location:** Online via D2L

**Course Modality**

This course is designated as **an online class**. All course materials, online lectures, and video recordings of the lectures will be available through D2L. The class will meet live via Zoom once weekly per the instructor's schedule. Furthermore, all course assignments and materials will be available and submitted online via myLeo (D2L). Students may proceed to work on and submit assignments in advance of due dates except for the Team and Individual Case Studies. Assignment and activity due dates will be by 11:59 CDT/CST per the course schedule posted on D2L.

Important information concerning expectations and clarifications is presented in my once-a-week live lectures. Students are encouraged to attend live lectures via Zoom. Readings, learning practices, quizzes, and other assignments are due at the end of each week's module.

**Required Textbooks**

**Title:** Spreadsheet Modeling and Decision Analysis: A Practical Introduction to Business Analytics (8<sup>th</sup> Edition)

Author: Ragsdale, Cliff

Publisher: CENGAGE

Publication Date: 2018

ISBN: 9781305947412

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

### **Required Software**

Students are required to have access to local version of Microsoft Excel on their PCs or Macs – Microsoft Suite 365 will not allow the required Excel add-in software. As a result, students will be required to download and install the Excel Solver add-in tool. A online tutorial on how to install Solver will be provided via D2L.

Students are also required to have access to Microsoft Word – Suite 365 is sufficient for this.

## **Course Description**

**Student Learning Outcomes.** 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.

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, utilize different analytical techniques to improve performance, gain an understanding of optimizing results, and be able to employ analytical methods to translate data into key insights.

## **COURSE REQUIREMENTS**

### **Minimal Technical Skills Needed**

Before beginning this course, students must have knowledge of and the ability to use Microsoft Excel. Meaning, students should be adept at using the following Excel functions:

Round, RoundUp, RoundDown, Sum, SumIF Count, IF, CountIF, Average, Exponent, Rand, RandBetween, Percentiles, Break-even Analysis, SumProduct, and CORREL. An online tutorial will be provided via D2L for students to refresh their knowledge of Excel.

Students must have a high skill level in the use of Microsoft Word. The course requires APA-7 formatting and writing style.

Students must also have a foundation in the use of discrete and inferential statistics.

### **Instructional Methods**

Important information covering learning objectives, learning materials and clarifications are presented in once-a-week live lectures via Zoom. In addition, I will also cover course expectations for all upcoming assignments as a part of the lectures. **I prefer students attend the live lectures, but it is not mandatory.** All lectures will be recorded and available to students, via D2L, during the module week. It is the prerogative of the faculty to drop students from courses in which they have not submitted assignments or discussion postings on time as defined in the class schedule.

### **Student Responsibilities & Tips for Success in the Course**

Students are responsible for reviewing all announcements within the course D2L announcements pages, responding to all emails, and completing assignments on time. The online lectures are designed to provide students with interactive learning and use of critical thinking tools. Failure to do these items will adversely affect your grade.

1. Get the correct version of the textbook. This forms an important part of course learning and offers reinforcement quizzes.
2. Review all the announcements. Check your email daily for any feedback I provide to your questions.
3. Please note, that assignment due dates are generally Sundays with notices for due date changes provided during lectures and posted in the D2L course learning environment.

4. Stay on schedule for all assignments and case study project activities. A detailed schedule will be provided in the course D2L learning environment. Generally, it will be difficult for a student to succeed in this course if they are more than two weeks behind in their textbook reading assignments. Assignment due dates are absolute with exceptions granted by the Professor.

## GRADING

Students will be graded on completing project assignments, participation, and selected textbook and supplemental research assignments - awarded points for each. Grades are based on total points and will be earned based on the Final Grading section of this syllabus. Your weekly textbook, research, team projects, and supplemental material assignments will be announced during lectures and posted in your D2L course area.

### Assessments

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 case study assignments (team & individual) will be multiplied by available points 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. 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 a 10% penalty for each late day.

### Participation Assessment

This course involves intensive discussion of cases, exercises, and other information from your learning and from your classmates. Class participation is graded based on the extent to which you ask questions, answer questions and otherwise participate in posting discussions as required online. In addition, your classmates will depend on your participation in the team project. As a result, points may be reduced from the team project grade if it is determined that a student did not participate as agreed. Students are also expected to provide introductory background information and complete the course evaluation. Students 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 same 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 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 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 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 the prescribed assignment format, correct grammar, and clarity 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 instructor-assigned activities to get a maximum of 10 bonus points in this class to improve your grade.

**Final Grade**

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

<b>Assignment</b>	<b>Available Points as a % of Final Grade</b>
Analytic Modeling Research Report – AI as a Research Assistant	7
Individual Textbook Assignment – Network Flow Modeling	7
Team Case Study on Resource Optimization modeling, presentation and Peer Evaluation	30
Individual Case Study (Goal - Cost/Benefit Optimization)	30
Individual Time Series & Regression Model Accuracy	10
Individual Participation: Background info, Peer Review,	16

Online Discussions, and Course Evaluation	
<b>Total Available Points:</b>	<b>100</b>
Potential Bonus Points Applied to Increase Overall Course Grade	10

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 D2L class materials - applicable to both Windows PC and Apple Mac users.

### LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are the technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

[https://documentation.brightspace.com/EN/brightspace/requirements/all/browser\\_support.htm](https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm)

Zoom Video Conferencing Tool

[https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom\\_Account.aspx?source=universalmenu](https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu)

## **ACCESS AND NAVIGATION**

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or [helpdesk@tamuc.edu](mailto:helpdesk@tamuc.edu).

**Note:** Personal computer and internet connection problems do not excuse the requirement to engage in online discussions and complete all coursework in a timely and satisfactory manner. The D2L learning environment is the only method for submitting assignments. Each student will need to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, a TAMUC campus open computer lab, etc.

## **COMMUNICATION AND SUPPORT**

If you ask me questions by email, 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 screenshots of the issues as an email attachment. All assignment due dates and times are central time in the United States.

### **Technical Support**

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

## **COURSE AND UNIVERSITY PROCEDURES/POLICIES**

### **Course Specific Procedures/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.

### **University Specific Procedures**

#### **Student Conduct**

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.

<https://inside.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:

<https://www.britannica.com/topic/netiquette>

### **TAMUC Attendance**

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

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

### **Academic Integrity**

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

[Undergraduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf>

### **Graduate Students Academic Integrity Policy and Form**

[Graduate Student Academic Dishonesty Form](#)

<https://inside.tamuc.edu/aboutus/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10.pdf>

### **Students with Disabilities-- ADA Statement**

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**

Texas A&M University-Commerce

Velma K. Waters Library Rm 162

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

Fax (903) 468-8148

Email: [studentdisabilityservices@tamuc.edu](mailto:studentdisabilityservices@tamuc.edu)

Website: [Student Disability Services](#)

<https://www.tamuc.edu/student-disability-services/>



## **Nondiscrimination Notice**

Texas A&M University-Commerce 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.

## **Campus Concealed Carry Statement**

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 the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

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.

## **A&M-Commerce Supports Students' Mental Health**

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](http://www.tamuc.edu/counsel)

## **Mental Health and Well-Being**

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar. Scan the QR code to download the app and explore the resources available to you for guidance and support whenever you need it.



<http://telusproduction.com/app/5108.html>

### **AI use policy [Draft 2, May 25, 2023]**

Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty

### **DEPARTMENT 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 as well as 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 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 from another person as one’s own without proper acknowledgment.

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

**COVID-19 Related.** Exceptions to Texas A&M policies may be made by faculty where warranted. Faculty have management over their classrooms and may require the use of face-coverings in all instructional and research classrooms/laboratories. 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 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 in getting access to missed content or completing missed assignments.

## COURSE OUTLINE & SCHEDULE

We will follow the calendar schedule presented in the D2L learning environment. The schedule will accommodate weekly learning modules as outlined below. University-posted holidays will be observed. I may make adjustments in both content and schedule based on learning progress during the course. I may also change the basis for the course grade (if I need to eliminate or add an assignment or something of that nature). If I do so, I will inform you in writing via D2L. Remaining in the course after attending and reading this syllabus indicates you accept the possibility of changes and responsibility for being aware of them.

Module	Content Topic
1	Introduction to Analytical Modeling & Decision Analysis Student Introductions and Chapter 1 Begin Analytical Modeling Research Report
2	Introduction to Optimization and Linear Programming Chapter 2
3	Modeling Design & Linear Programming Problem Solving Chapter 3 Modeling Research Report Assignment Due Begin Team Optimization Case Study Project
4	Sensitivity Analysis Chapter 4
5	Network Modeling Chapter 5 Begin Textbook Assignment on Network Modeling
6	Integer Linear Programming Chapter 6
7	Time Series Forecasting Models & Accuracy Chapter 11 Textbook Assignment on Network Modeling Due
8	Regression Modeling, Analysis & Accuracy Chapter 9
9	Data Driven Decision Making and Visualization Supplemental Materials
10	Team Case Study Delivery & Mock Operations Review, Team Peer Reviews Due

11	Goal Programming & Cost Benefit Analysis Chapter 7 Begin Individual Assignment on Goal Programing
12	Non-Linear Programming & Optimization Chapter 8 Individual Case Study Due
13	Queueing Theory & Application & Simulation Modeling Chapter 13 Individual Assignment on Goal Programing Due