

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



Please, click on the following link to access A&M-Commerce Covid 19 Information, <https://new.tamuc.edu/coronavirus/>

TMGT 444-01W DECISION THEORY

3 Credit Hours

COURSE SYLLABUS: SPRING 2023

INSTRUCTOR INFORMATION

Instructor: Redha M. Radaydeh, PhD
Assistant Professor, Electrical Engineering
Department of Engineering and Technology

Office Location: AGIT 208.

Office Hours: Monday 10:00-13:00, Monday 14:15-15:15, Wednesday 14:15-15:15, or with appointment. Virtual meetings can be scheduled.

Office Phone: 903-886-5471

Office Fax: 903-886-5960

University Email Address: Redha.Radaydeh@tamuc.edu

Preferred Form of Communication: email.

Communication Response Time: within 24 hours (weekdays) to email.

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s) Required

An Introduction to Decision Theory

Author: Martin Peterson

2nd Edition

Publisher: Cambridge University Press

ISBN: 978-1-316-60620-9

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Course Description

Decision theory deals with methods for determining the optimal course of action when a number of alternatives are available and their consequences cannot be forecast with certainty. This course will use quantitative methods (models) for problem solving and decision making. Theories and models to be covered include probability theory, utility theory and game theory, linear programming models, nonlinear programming models, and integer programming models. <https://coursecatalog.tamuc.edu/search/?search=TMGT+444>

Prerequisites: TMGT 340 and TMGT 411 with a minimum of C or better and instructor approval.

Student Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Explain the major theoretical frameworks of decision theory (which include but are not limited to: normative and descriptive) and be able to identify the characteristics of each type in an applied setting. .
2. Be able to systematically formulate, structure and/or frame a decision problem by employing the various decision support tools introduced during the course (e.g., decision tables, matrices, utility tables, weighted decision tables, and others).
3. Be able to apply utility functions to solve expected utility & expected value problems (e.g., probability calculations, probability reward, expected value calculations, etc.).
4. Describe and be able to apply the standard representation relating to individual decisions (e.g., alternatives (options), states of nature, outcomes, etc.).
5. Describe and be able to apply the fundamentals of decision-making under uncertainty and risk (e.g., paradoxes of uncertainty, measures of probability, uncertainty criteria, etc.).
6. Explain the use and apply examples of Game Theory that demonstrate interaction strategies used by decision makers.
7. Be able to explain the human decision-making process (or behaviors) in light of psychological decision theory (e.g., prospect theory, attribution theory, regret theory, etc.) and be able to describe the practical implications of their use.

COURSE REQUIREMENTS

General Overview of this Course of Study

This class will be conducted in an environment similar to what one would expect to find in a well-operated business. It should be the objective of each of us to carry ourselves in a professional, business-like manner. In the context of this class, that means taking responsibility for one's assignments, producing quality work, submitting it on time, communicating clearly, and acting in a civil manner.

As you are aware, this is a senior-level course. This fact alone dictates a different learning environment than what you may have experienced in other classes and will require, in some cases, a new approach to the learning process on your part. You will be expected to develop your reading, research, and writing skills to a level that you may never have experienced previously. This will require personal dedication and a desire to advance your education. Additionally, as an online class, your time management skills will be put to the test as you try to balance other courses, career, family,

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leisure time, and other obligations along with your responsibilities to this course. Do not fall behind in this class. **Being busy is not an excuse for turning in assignments late!**

The educational philosophy of this course. The student is the center of the learning process; therefore, you are expected to assume the responsibility for your learning—to the degree that learning is achieved. Much of the learning achieved in this class will come as a result of student discussions. In this environment, the instructor will serve largely as a guide and facilitator for the student learning experience. You are expected to approach learning with purpose, commitment, dedication, seriousness, and an attitude of discovery. Accordingly, you must be self-driven by reading carefully all materials provided by the instructor, completing all course assignments in accordance with the instructions and specifications provided by the instructor, complying with assignment deadlines, and working within the assignment/course evaluation criteria.

As the student you are to be an active learner, fully engaged in all facets of the course and its content. You will be expected to proof and assess the quality of your work **before** it has been presented to your instructor. It is critical to your success for you to comply with the writing and formatting guides associated with this course of study and for you to have a high level of understanding of these documents. Before you turn any work into the instructor, it is your responsibility to compare your written material with the requirements/specifications of the writing and formatting guides provided for this course of study and to ensure to the instructor that you have fully complied with all requirements of the assignments.

Student Responsibilities

This course will require you to read, conduct extensive research, and write at a level appropriate for a senior-level student. It is assumed that you can read and write at this level coming into the course.

- You will be expected to read and comprehend the course syllabus, e-mails, and announcements.
- You will be expected to manage your time effectively and efficiently throughout the semester.
- You will be expected to meet all deadlines and due dates. Assignments turned in late will be subject to a ten percent (10%) score reduction for each day they are late. After five (5) days, assignments will receive a grade of zero (0). This policy will be enforced strictly!
- You will be expected to participate fully in the course by checking announcements and e-mails and responding to e-mails when requested. This should be a daily habit!
- You will be expected to employ a formal business writing style and format in all of your written correspondence (including e-mails).
- You will be expected to practice civility in your verbal interactions with the instructor, staff, and other students.
- You will be expected to devote at least twelve (12) clock hours to this course each week of the semester.
- E-mail will be our primary means of communication. Consequently, you will be expected to log into D2L Brightspace often to check for correspondence from your instructor.

GRADING

Final grades in this course will be based on the following scale:

A = 90%-100%

B = 80%-89%

C = 70%-79%

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D = 60%-69%

F = 59% or Below

Assessments

The following assessments will be performed during this course to assess individual progress towards learning outcomes:

Point Distribution	Assessment Type	%
Weekly Quizzes		30
Written Assignments		30
Midterm Exam		20
Final Exam		20
Total		100

TECHNOLOGY REQUIREMENTS

Browser support

D2L is committed to performing key application testing when new browser versions are released. New and updated functionality is also tested against the latest version of supported browsers. However, due to the frequency of some browser releases, D2L cannot guarantee that each browser version will perform as expected. If you encounter any issues with any of the browser versions listed in the tables below, contact D2L Support, who will determine the best course of action for resolution. Reported issues are prioritized by supported browsers and then maintenance browsers.

Supported browsers are the latest or most recent browser versions that are tested against new versions of D2L products. Customers can report problems and receive support for issues. For an optimal experience, D2L recommends using supported browsers with D2L products.

Maintenance browsers are older browser versions that are not tested extensively against new versions of D2L products. Customers can still report problems and receive support for critical issues; however, D2L does not guarantee all issues will be addressed. A maintenance browser becomes officially unsupported after one year.

Note the following:

- Ensure that your browser has JavaScript and Cookies enabled.
- For desktop systems, you must have Adobe Flash Player 10.1 or greater.
- The Brightspace Support features are now optimized for production environments when using the Google Chrome browser, Apple Safari browser, Microsoft Edge browser, Microsoft Internet Explorer browser, and Mozilla Firefox browsers.

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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 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

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

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.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs 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, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

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:

The syllabus/schedule are subject to change.

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

Interaction with Instructor Statement

Students are highly encouraged to participate in class activities, ask questions, and solve technical problems in class. They are also highly encouraged to work in groups during the Lab sessions, prepare full documentations of their Lab work, gain experience on software simulations and hardware work, and gain experience on team work, communication skills, and technical writing.

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](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

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 [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>

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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 Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/academics/graduateschool/faculty/GraduateStudentAcademicDishonestyFormold.pdf>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.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

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

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

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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

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Department or Accrediting Agency Required Content

The Electrical Engineering program is in the process to obtain ABET accreditation. The course material, its expected deliverables, grading policy, organization, and expected learning outcomes are designed to meet the ABET requirements.

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COURSE OUTLINE / CALENDAR

The instructor reserves the right to adjust the schedule to serve the needs of the class and any changes will be communicated in a timely manner.

Course schedule: The sequence of chapters follows the textbook.

Week # Weekly "Check-ins" required (refer to Syllabus for details)	Topic Beginning Monday	Assessment Quizzes are due by midnight (CT), on Sunday of the week assigned.
0	Familiarize yourself with the courseware and follow the initial instructions provided in the online course. Post on-line introductions with photo for class roster. Acquire copy of text.	Introduce yourself
1	Chapter 1 – Introduction of decision theory to include a brief history of the concept.	Quiz 1
2	Chapter 2- Understanding the elements of the Decision Matrix	Quiz 2
3	Chapter 3- Decisions under ignorance or uncertainty	Quiz 3
4	Chapter 4- Decision under risk	Quiz 4 Written Assignment #1
5	Chapter 5- Utility	Quiz 5
6	Chapter 6- The Mathematics of Probability Chapter 7- The Philosophy of Probability	Quiz 6
7	MIDTERM	Mid-term Examination
8	Chapter 8 – Bayes Theorem	Quiz 7
9	SPRING BREAK	
10	Chapter 9 – Casual vs Evidential Decision Theory	Quiz 8 Written Assignment #2
11	Chapter 9 – Casual vs Evidential Decision Theory	Quiz 9
12	Chapter 10- Risk Aversion	Quiz 10
13	Chapter 11- Game Theory	Quiz 11
14	Chapter 12- Game Theory	Quiz 12
15	Chapter 13- Social Choice Theory	Written Assignment #3
16		Last week of Class/Study Period
Finals		

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