EAST TENNESSEE STATE UNIVERSITY

College of Business and Technology

Department of Management and Marketing

MGMT 3050 Decision Science Fall 2021

MGMT 3050: DECISION SCIENCE

1. COURSE DESCRIPTION

Prerequisite(s) or Core-requisite(s): ECON 2080 and Junior Standing.

An introduction to basic management science methods emphasizing application and interpretation by managers. This course is intended to provide in-depth knowledge of quantitative decision-making models with an emphasis on both manual and computer solution techniques. While linear programming will be the primary tool of analysis, other techniques will also be derived and applied. Topics include model-building process, decision theory, Bayesian decision analysis, linear programming methods including the simplex method and assignment and transportation models, basic inventory and production models, queuing models. A basic working knowledge of commonly used computer software packages is assumed.

2. COURSE MATERIALS

Students will need the following items to complete this course:

- **Strongly Recommended Textbook:** An Introduction to Management Science: Quantitative Approaches to Decision Making, 15th Ed. by Anderson, Sweeney, Williams, Camm, Cochran, Fry, Ohlmann; CENGAGE, 2017, ISBN-13: 978-1337406529.

- **Required Technology:** Computer with an Access to High-Speed Internet, MS Word, Powerpoint,

and Excel are required in this course. The instructor may require other free open source software.

- **Desire 2 Learn:** This course uses Desire 2 Learn (D2L). The D2L site will be updated as the course progresses. You are responsible for checking the course web site and your email regularly. When you are sending an email, the subject line must include "MGMT3050" and a short coherent subject. An email is a standard form of business communication; my expectation is professionalism in all your communications with me, electronic and otherwise. During the workweek (Monday to Friday), I would endeavor to respond to emails within twelve hours. Response time may be as much as twenty-four hours for weekend correspondence.

3. COURSE OBJECTIVES

By successfully completing this course, students should be able to:

- Understand and explain the model-based support systems are needed and can be utilized in decision-making processes.
- Understand and explain the modeling process and be able to apply it in a variety of different business applications.
- Evaluate models applying good modeling and validation techniques.
- Implement a model-based management solution using Excel.

4. COURSE ASSIGNMENTS

A detailed weekly/biweekly responsibility letter for the course will be provided at the beginning of each week. These responsibility letters contain a list of learning tasks, including reading assignments, videos to watch, and classwork to complete. Further, the letter will include a list of assessments to complete, such as homework, quiz, and tests. Students must complete all the listed learning tasks and assessments as a given schedule.

- **Time Commitment:**

On the average students will require about 4-8 hours a week to complete the weekly requirements for this class including watching, reading, quizzes, tests, etc. The actual time required will vary considerably and is a function of aptitude for quantitative problem-solving.

- **Quiz Assignments:**

There will be eight quiz assignments that will be administered through D2L with a due date. They are all equally weighted. Each quiz is about 60-90 minutes long, and you may take it anytime during the period that the quiz is open. The quiz will cover theoretical concepts as well as mathematical problems. You should submit the assignment before 8:00 pm on due date. Students will be allowed two attempts, and the higher grade of the two attempts will be recorded. Your lowest quiz score will be dropped at the end of the course.

Late Quiz Assignment will not be accepted!!!

- **Midterm Exam:**

The midterm exam will cover material from Chapters 1, 2, 3, and 7. The exam will be available on D2L at 8:00 am on Thursday, October 14. The midterm exam will consist of both mathematical and theoretical concepts questions, and you will have about 120 minutes to complete the test. You have to take the test until 8:00 p.m. on Friday, October 15. You will only be allowed one attempt at the midterm exam within 36 hours.

- **Final Exam:**

The final exam will cover material from Chapters 4, 6, 9, and 15. The exam will be available on D2L at 8:00 am on Sunday, December 5. The final exam will consist of both mathematical and theoretical concepts questions, and you will have about 120 minutes to complete the test. You have to take the test until 8:00 p.m. on Monday, December 6. You will only be allowed one attempt at the final exam within 36 hours.

No Early/Late Midterm/Final Exam will be arranged!!!

5. COURSE SCHEDULE & ASSIGNMENTS

The schedule is tentative and is subject to changes as class progress.

(#)	Date	Topic(s)	Reading	Assignment	Due Date
1	8/23-9/3	Introduction	Chapter 1	Quiz#1	3-Sep
2	9/4-9/17	An Introduction to Linear Programming	Chapter 2	Quiz#2	17-Sep
3	9/18-10/1	Linear Programming: Sensitivity Analysis	Chapter 3	Quiz#3	1-Oct
4	10/2-10/13	Integer Programming	Chapter 7	Quiz#4	13-Oct
5	**10/14-10/15**	**MIDTERM EXAM (Ch1, Ch2, Ch3, Ch7)**			**15-Oct**
6	10/16-10/29	Linear Programming Applications	Chapter 4	Quiz#5	29-Oct
7	10/30-11/12	Distribution and Network Models	Chapter 6	Quiz#6	12-Nov
8	11/13-11/23	Project Scheduling	Chapter 9	Quiz#7	23-Nov
9	11/24-12/3	Forecasting	Chapter 15	Quiz#8	3-Dec
10	**12/5-12/6**	**FINAL EXAM (Ch4, Ch6, Ch9, Ch15)**			**6-Dec**

6. GRADING

Course grades will be calculated as follows:

Course Component	Grade
Quiz Assignments	30%
Midterm Exam	35%
Final Exam	35%
Total	100%

A student's assigned course score will be by their performance on each of the course components listed above. Minimum course grades will be assigned using the following cutoffs: 90 (A-), 80 (B-), 70 (C-), 60 (D). The instructor may, at his discretion, lower the cutoffs (i.e., apply a curve), but the cutoffs will not be raised. Pluses (+) and minuses (-) will be given at the instructor's discretion. Students are encouraged to track and calculate their own progress.

7. ACCOMMODATIONS FOR STUDENTS WITH DOCUMENTED DISABILITIES

Reasonable accommodations are available for students who have a documented disability. All accommodations must be approved through the Office of the Director of Disability Services, the telephone number for the office is 423-439-8346 (423-439-8370 for hearing impaired). Every effort will be made to accommodate documented special needs of students. You should also notify the instructor during the first week of class of any special accommodations needed for the course.

8. ACADEMIC MISCONDUCT: ETSU Policy No. 3.13, October 1, 1979

Academic misconduct will be subject to disciplinary action. Any act of dishonesty in academic work constitutes academic misconduct. This includes plagiarism, the changing or falsifying of any academic documents or materials, cheating, and the giving or receiving of unauthorized aid in tests, examinations, or other assigned school work. Penalties for academic misconduct will vary with the seriousness of the offense and may include, but are not limited to: a grade of "F" on the work in question, a grade of "F" for the course, reprimand, probation, suspension, and expulsion. For a second academic offense, the penalty is permanent expulsion.

9. SYLLABUS ATTACHMENT

Link: University Syllabus Attachment Link
URL: https://www.etsu.edu/curriculum-innovation/syllabusattachment.php

Syllabus Attachment Information:

- Face-Covering Policy
- Important Dates
- Academic Integrity and Misconduct
- Discrimination and Harassment
- Student Rights and Freedoms
- Diversity Statement
- Prerequisites
- Academic Accommodations for Students with Disabilities
- Permits and Overrides
- Class Attendance
- Where to go for help?
- Sexual Misconduct/Title IX Statement
- Technical Resources