



Course Syllabus and Student Information

Course Information

Course name: Decision Science

Course Number: MGMT 3050-001

Semester and Year: Fall 2021

Class time: Tue. and Thur. 9:45 am - 11:05 am

Classroom: Sam Wilson Hall, 230

Instructor Information

Instructor: Reza Maihami, Ph.D.

Office: Sam Wilson Hall, 119

Office hours: Tue. and Thur. 1pm - 3 pm

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Course Description & Materials

Prerequisites: C- or better in ECON 2080 and Junior Standing

Course Description: This course introduces basic decision science methods emphasizing application and interpretation by managers. The course focuses on quantitative decision-making models using manual and computer solutions techniques. Topics may 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.

The discussions are integrated with Excel as the most common spreadsheet software package, so the students can take full advantage of Excel. Although Excel will be applied to solve the problems, the solution steps will be discussed, so the students know what they are doing and why they are doing it. The decision modeling techniques are integrated with problems drawn from different industries such as finance, manufacturing, service, marketing, accounting, healthcare, and human resource.

Required Textbook

Textbook: Managerial Decision Modelling, 3rd edition.

By: Nagraj Balakrishnan, Barry Render, Ralph M. Stair

Publisher: Pearson

ISBN: 978-1-292-02419-6

Course Overview

Course Structure

Course requirement: working with Excel, basic mathematics. Students need to bring along their laptops to deal with hands-on exercises.

Course structure: a blending teaching structure is used. The presentation is prepared for all chapters and will give to the students. The instructor will use lecture and discussion styles to deliver the subjects. The basic topics will be taught using board, instructor hand-out, and presentation. Most sessions include hands-on exercises with Excel. A step-by-step approach will be used to solve these exercises.

Learning Outcomes

Learning outcomes: Decision Science course is designed to achieve the following course learning outcomes:

- Understand decision-making modeling concepts, tools, and applications.
- Learn the role of decision-making models in real-world business problems
- Develop a manual and software-based solution for decision-making problems
- Perform decision modeling techniques in different functions such as finance, human resource, accounting, operation, and healthcare.

Required activities: Class activity, homework (HW), group assignment (GA), group project, and exams.

Course Assignments

Homework: There will be a homework assignment every week. Please remember that the homework assignments are designed to help you understand the covered material and help you succeed in this course. You will be required to complete assigned problems associated with the current material we are covering. You will be responsible for submitting homework in the appropriate D2L drop box. More detailed information on the homework assignments will be discussed in class.

Group assignment: every other week, you will be assigned a group assignment. Similar to the homework assignments, the group assignments are designed to help you understand the covered material and help you succeed in this course. You will work in groups of five or six on your group assignments. Your group will be required to complete the case study assignments associated with the current material we are covering. Your group will be responsible for submitting the completed case study assignments in the designated D2L drop boxes. More detailed information on the group assignment will be discussed in class.

Exams: Two exams will be given during the semester. It is crucial that you are on time for the exams. Exams will cover text material and problems, lectures, discussions, and PowerPoint note. Exams will not be administered late. There will be no make-up exams. Both the midterm and the final exam are mandatory.

Final Project: in a group of five or six, you will be working on a final project. This project is similar to the bi-weekly group assignments with a broader range and more complexity. The final presentation and appropriate documents (Word, PowerPoint, and Excel solution) are expected. More detailed information on the final project will be discussed in class.

Business Talk: During the semester, the instructor will invite industrial practitioners to have a business talk to the class. The topics are relevant to the course syllabus. This is a great way to make you familiar with the real applications of what you have learned in the class. This activity will be held in the following ways:

- Key speakers from the business community
- Hot topics and trends presented by the instructor
- Interesting topics presented by a student or a group of students (this will be considered as a bonus project, and a significant extra point will be added to the final grade).

Course Outline and Schedule

Module	Start date	Topic	Deliverable	Due date
1	08/26	Introduction to decision Science	M1 HW	09/02
2	09/02	Linear programming: a graphical method	M2 HW M2 GA	09/09
3	09/09	Linear programming: computer analysis and application (Part 1)	M3 HW	09/16
4	09/16	Linear programming: computer analysis and application (Part 2)	M4 HW M4 GA	09/23
5	09/23	Linear Programming Sensitivity analysis	M5 HW	09/30
6	09/30	Special Problems in Linear programming	M6 HW M6 GA	10/07
Midterm Exam	10/07	Covers 6 modules (1-6)		10/14
7	10/14	Integer and non-linear programming (part 1)	M7 HW	10/21
8	10/21	Integer and non-linear programming (part 2)	M8 HW M8 GA	10/28
9	10/28	Forecasting Models	M9 HW	11/04
10	11/04	Inventory Control models	M10 HW M10 GA	11/11
11	11/11	Decision analysis models	M11 HW	11/18
12	11/18	Simulation modeling	M12 HW M12 GA	11/25
Presentation	11/25	Presentation	Final project documents	12/02
Final Exam	12/05	Covers 6 modules (7-12)		12/10

Grading Structure

Means of Assessment

items	Points	Percentage
midterm	15	15%
Final exam	20	20%
Homework	25	25%
Group Assignments	20	20%
Final Group Project	15	15%
Class activity and attendance	5	5%
Total	100	100%

Grade Scale

Letter Grade	Percentage	Performance
A	93-100%	Excellent Work
A-	90-92%	Nearly Excellent Work
B+	87-89%	Very Good Work
B	83-86%	Good Work
B-	80-82%	Mostly Good Work
C+	77-79%	Above Average Work
C	73-76%	Average Work
C-	70-72%	Mostly Average Work
D+	67-69%	Below Average Work
D	60-66%	Poor Work
F	0-59%	Failing Work

Course Policies

Attendance

- Regular on-time class attendance and participation in class is expected. Students arriving late create a distraction for other students and waste their time. Respect for others requires one to be in place and ready to begin at the scheduled time.
- When students miss class, it is their responsibility to find out what material they missed and be prepared for upcoming class elements. Students missing days when

homework or assignments are given should consult other students or refer to Desire2Learn for assignment requirements.

- Per request by students and in case of urgent events, due dates are adjusted for students.
- The athletes are allowed to take part in the scheduled matches with pre-arranged with the instructor. This absence would be considered as the excused absence. However, the athletes are responsible to keep up with the class schedule and do all assignments, quizzes, and exams.

Face Covering Policy

ETSU continues to follow the coronavirus pandemic closely and adjusts their policies in accordance with current CDC guideline. For the most up-to-date information, please visit the Bucs are Back page at <https://www.etsu.edu/coronavirus/>.

Accommodations for Students with Documented Disabilities

It is the policy of ETSU to accommodate students with disabilities, pursuant to federal law, state law and the University's commitment to equal educational opportunities. Any student with a disability who needs accommodations, for example, note taking assistance, exam time adjustment or seating placement, should meet with Disability Services. Faculty accommodation forms are provided to eligible students and should be shared with the instructor as early in the semester as possible. Disability Services can be reached via telephone at 439-8346, or web at <https://www.etsu.edu/students/ds/>.

Academic Integrity and Misconduct

[ETSU Policy: Academic Integrity and Misconduct](#)

Students are expected to abide by the ETSU Honor Code and to act with honor, integrity, and civility in all matters. The course instructor has the primary responsibility for maintenance of academic integrity. Students guilty of academic misconduct, either directly or indirectly, through participation or assistance, are immediately responsible to the course instructor. Any form of academic misconduct (plagiarism, cheating, etc.) is subject to disciplinary action. Sanctions for a violation may vary with the severity of the offense. The instructor may reduce a grade up to and including assignment of an "F" or a zero ("0") for the exercise/examination or an "F" in the course. If a sanction is imposed then the instructor must begin the academic misconduct procedures and notify both the student and the Dean/Designee. Students may appeal a grade assignment associated with a finding of academic misconduct, as distinct from a student disciplinary or grade appeals process, through the University's Academic Misconduct

Procedures. The student will not be subjected to any form of pressure to coerce admission of guilt or information about his/her conduct or that of others.

Honor Code

East Tennessee State University is committed to developing the intellect and ethical behavior of its students. Students found to be in violation of policies on plagiarism, cheating, and/or fabrication will be held accountable for their actions. Any knowledge of academic misconduct should be reported. Students are expected to act with honesty, integrity, and civility in all matters.

Other

- The students should pay close attention to deadlines. The late works may accept with serious deduction in points. There will be no make up for missed assignments and exams.
- All announcements and grades will be posted to the D2L. The student should constantly keep up with the D2L.
- If the students find any difficulties with the topics, assignment, teaching style, or other aspects of the class, they should let the instructor know as soon as possible. An effective relationship between the instructor and the students is the key factor to make professional and efficient course learning.
- All assignments should be submitted by the deadlines electronically through D2L. Any exceptions or permissions will be posted to D2L.
- Using a cell phone and other electronic devices without instructor permission is not allowed during class time.
- All course materials will be prepared electronically and delivered to the students through D2L. The students may take additional notes during the teaching time for their later reference. Additional and complementary materials will be provided subject to asking by more interested students.
- It is the sole responsibility of the students to drop or withdraw from a course. The deadlines for drop/withdraw are posted in the student's portal. The instructor will not drop or withdraw a student from a course.

Syllabus Attachment Information

The University's approved Syllabus Attachment Information page provides information about important University and Academic Policies that all students should know.

<https://www.etsu.edu/curriculum-innovation/syllabusattachment.php>

- 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](#)