



Course Title: Business Mathematics I
Term: Fall 2017
Class Times and locations: TR 9:35-10:50 Liberal Arts and Humanities 264

Instructor Information

Instructor: Joe Kahlig
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Office Hours: MWF: 9am - 11am
MW: 1:30pm - 3:30pm
other times by appointment

Course Description and Prerequisites

Description: Business Mathematics I (Credit 3) Linear and quadratic equations and applications; functions and graphs, systems of linear equations, matrix algebra and applications, linear programming, probability and applications, statistics.

Prerequisites: High school algebra I and II and geometry. Credit will not be given for more than one of MATH 141 and 166.

Calculator Policy: This course **REQUIRES** a TI-84(plus) graphing calculator. You may use another calculator, provided that it does not give you an unfair advantage over your classmates. **The only calculator programs allowed are those I give out during class.** All other programs must be erased from the calculator. Using a calculator that is not approved or having programs(or notes) on the calculator will be considered a case of Scholastic Dishonesty and will be dealt with in that manner.

Learning Outcomes

This course is focused on quantitative literacy in mathematics found in both business and everyday life. Upon successful completion of this course, students will be able to:

- Logically find relationships among variables to formulate mathematical models for everyday applications, including business applications, such as cost, revenue, profit, supply and demand.
- Understand matrices and their applications, including solving systems of linear equations.
- Construct linear programming problems for various applications and solve using graphical techniques, including finding the optimal point(s) where a company minimizes its cost or maximizes its profit.
- Solve linear programming problems using simplex methods. Including finding surplus and the discussion of shadow prices.(Honors class)
- Understand set terminology and its relationship to symbolic notation.
- Use Venn diagrams to model the relationship between sets and set operations, with applications to real-world problems.
- Understand the principles of probability and counting and apply these concepts to a variety of problems, such as finding the number of ways or probability of obtaining particular card hands.

- Identify types of random variables and calculate probabilities and statistics for random variables.
- Apply the concepts of finance to real-world situations, such as financing a car or house.
- Understand the principles of Markov chains, regular Markov chains, and absorbing Markov chains. (Honors class)

Textbook and Resources

- Textbook: *Finite Mathematics*, 11th Edition, by Tan.
- WebAssign Account Access Code: WebAssign will be used for homework in this class. In order to use WebAssign, you must purchase an access code. For access code and textbook purchasing information and options, please see the Student Information Page at
<http://www.math.tamu.edu/courses/eHomework/>
- Help Sessions: The department's help session schedule may be found at
<http://www.math.tamu.edu/courses/helpsessions.html>
- **Web Page:** My class web page contains a variety of resources for this class. Here is a list of some of them.
 - Blank version of the lecture notes.
 - Completed lecture notes (posted after each section is completed).
 - My additional homework problem sets(with solutions) for this course.
 - Solutions to the exams.
 - Instructions for the TI-84.
 - I have an on-line week in review for my regular math 141 course and my regular math 166 course. These reviews will cover most of the material that we cover in this class.

Grading Policies

Homework: Graded homework for this course will primarily consists of electronic assignments that will be worked and submitted in WebAssign.

- Important WebAssign information such as how to purchase access, how to log in and take assignments, the Student Help Request Form, and other WebAssign issues, can be found at
<http://www.math.tamu.edu/courses/eHomework>.
- The homework for a section will be due approximately 3 days after the lecture over that material is completed. For every assignment, you may request an extension that will extend the original due date by two days. Any problem submitted during the extension period will only receive half credit. An extension will not be granted if it is requested more than two days after the original due date. Directions on how to use the webassign system can be found on my web page.
- At least one homework assignment will be dropped when computing the average.

Lab Assignments: The lab assignments use a spreadsheet program to explore the concepts in the course. The assignments may be done in Excel or in Libre Office. A free copy of the Libre Office software may be downloaded from the internet.

Lab assignments will be posted on my class web page. You will be graded both on correctness of the results as well as how the spreadsheet is constructed, i.e. its functionality. Examples of different labs may be found on my web page.

Exams: There will be three in-class exams and a comprehensive final. **I will not curve your test grades.** Once an exam is returned, I will not give a makeup for that exam. If you believe that you have a valid reasons for receiving a makeup after the exams have been returned, then talk to me.

Grade Appeals: If you believe an error has been made in grading of an exam, you have one week from the return of the exam to let me know. After that one week period, no change to the grade will be made. The only exception to this is if the points on the exam were totaled incorrectly. If a grade has been recorded incorrectly, you may talk to me anytime during the semester about fixing the grade. I will need to see the actual assignment before the grade will be changed.

Tentative Exam Schedule

Exam 1: September 26	Exam 3: November 21	
Exam 2: October 19	Final Exam: Friday, December 8 from 12:30pm-2:30pm	

Grading Scale:

3 Exams @ 20% each	60%	A = 86-100
Homework	10%	B = 76-85
Lab Assignments	6%	C = 66-75
Final Exam	24%	D = 60-65
Total Points	100%	F = 0-59

Attendance and Makeup Policies

- The University views class attendance as an individual student responsibility. It is essential that students attend class and complete all assignments to succeed in the course. University student rules concerning excused and unexcused absences as well as makeups can be found at <http://student-rules.tamu.edu/rule07>.

Student Rule 7.3: Students may be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Section 7.1, or other reason deemed appropriate by the student's instructor....

- **Excused absences:** To be excused the student must notify me in writing (acknowledged e-mail message is acceptable) prior to the date of absence if such notification is feasible. In cases where advance notification is not feasible (e.g. accident, or emergency) the student must provide notification by the end of the second working day after the absence. In all cases where an exam is missed due to an injury or illness, whether it be more or less than 3 days, I require a doctor's note.
 - I will not accept the University Explanatory Statement for Absence from Class form.
 - An absence due to a non-acute medical service or appointment (such as a regular checkup) is not an excused absence.
 - Providing a fake or falsified doctor's note or other falsified documentation is considered academic dishonesty, will be reported to the Aggie Honor Council, and will result in an F* in the course.
- Makeup exams will only be allowed provided the absence is excused. All make-up exams must be scheduled by me for one of the scheduled makeup times provided by the Math Department. According to Student Rule 7.3, you are expected to attend the scheduled makeup unless you have a University-approved excuse for missing the makeup time as well. If there are multiple makeup exam times, you must attend the earliest makeup time for which you do not have a University-approved excuse. The list of makeup times will be available at <http://www.math.tamu.edu/courses/makeupexams.html>
- The last day Q-Drop this class is **November 17th**.

Class Announcements, E-Mail Policy and Communications

Class announcements will be posted to my class web page and sent to your university e-mail account. If you send me an e-mail, please include your name and course information(i.e. class and section) as well as any additional information that I might need to help respond to your e-mail.

Americans with Disabilities Act (ADA)

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 believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit <http://disability.tamu.edu>

Academic Integrity

Cheating and other forms of academic dishonesty will not be tolerated.

Aggie Honor Code: An Aggie does not lie, cheat, or steal, or tolerate those who do.

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information please visit: <http://aggiehonor.tamu.edu>

Course Topics (Tentative weekly schedule)

Week	Topics	Sections
1	Sets, Counting, Multiplication principle	6.1, 6.2, 6.3
2	Multiplication principle, Permutations, Combinations, Experiments, Sample spaces, Events, Definition and rules of Probability	6.3, 6.4, 7.1, 7.2, 7.3
3	Definition and rules of Probability, Counting techniques in probability, Conditional probability, Independence, Bayes' Theorem	7.2, 7.3, 7.4, 7.5,
4	Independence, Distributions of random variables, Exam 1	7.6, 8.1
5	Expected Value, Variance, Standard Deviation, Chebychev's, Binomial Distribution	8.2, 8.3, 8.4
6	Normal distribution, Finance	8.5, 8.6, 5.1, 5.2/5.3
7	Finance, Linear functions and Mathematical models	5.2/5.3, 1.3, 1.4
8	systems of linear equations, matrix arithmetic, Exam 2	2.1, 2.4
9	matrix arithmetic, Systems of linear equations	2.5, 2.6, 2.2, 2.3
10	Systems of linear equations, Leontief input-output models, Graphing systems of linear inequalities, Linear Programming problems	2.2, 2.3, 2.7, 3.1, 3.2
11	Linear Programming problems	3.3, 4.1
12	Linear Programming problems	4.2, 4.3
13	Exam 3	
14	Markov chains	9.1, 9.2, 9.3
15	Markov chains, Final Exam	9.3