



**INSTRUCTOR INFORMATION**

<b>Name</b>	Tamara Carter
<b>Office</b>	Blocker 245A
<b>Phone number</b>	Math Department: 979-845-3261
<b>Email</b>	tcarter@tamu.edu
<b>Course Page</b>	General information: <a href="https://www.math.tamu.edu/courses/math140/">https://www.math.tamu.edu/courses/math140/</a> Our Courses: Please log in to eCampus ( <a href="http://ecampus.tamu.edu">ecampus.tamu.edu</a> )
<b>Office hours</b>	Tuesdays and Thursdays, 11:00 AM – 12:30 PM in Blocker 246 Tuesdays and Thursdays, 2:00 – 3:30 PM in Blocker 609 and by appointment in Blocker 245A
<b>Help Sessions</b>	<a href="http://www.math.tamu.edu/courses/helpsessions.html">http://www.math.tamu.edu/courses/helpsessions.html</a>
<b>Week-in-Reviews</b>	<a href="http://www.math.tamu.edu/courses/weekinreview.html">http://www.math.tamu.edu/courses/weekinreview.html</a>

**CLASS TIME**

- Math 140-504 Tuesdays and Thursdays, 3:55 – 5:10 PM in Blocker 166

**CATALOG DESCRIPTION**

*Mathematics for Business and Social Sciences (Math 1324)* Application of common algebraic functions, including polynomial, exponential, logarithmic and rational, to problems in business, economics and the social sciences; includes mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value. Only one of the following will satisfy the requirements for a degree: Math 140, Math 141 and Math 166. Prerequisite: High school algebra I and II and geometry.

**LEARNING OUTCOMES**

Upon successful completion of this course, students will:

- Apply elementary functions, including linear, quadratic, polynomial, rational, logarithmic, and exponential functions to model and solve real-world problems.
- Solve mathematics of finance problems, including the computation of interest, annuities, and amortization of loans.
- Apply basic matrix operations, including linear programming methods, to solve application problems.
- Demonstrate fundamental probability techniques and application of those techniques, including expected value, to solve problems.
- Apply matrix skills and probability analyses to model applications to solve real-world problems.

**CORE OBJECTIVES**

*Critical Thinking*

- Students will carefully examine and interpret statements to determine equivalent mathematical notation and/or equations.
- Students will think logically in order to set up a system of equations and solve a word problem.
- Students will analyze given information to set up a linear programming problem, including a system of linear inequalities.
- Students will use inquiry to determine if a solution exists to a linear programming problem.
- Students will understand how to determine the probability of an event and apply this to real-world applications.
- Students will understand the difference between simple and compound interest and when to use each.

*Communication Skills*

- Students will express mathematical concepts both abstractly with equations and in writing.
- Students will exhibit functions, as well as solutions to linear inequalities, graphically.
- Students will explain why a matrix operation is possible or not, and interpret the meaning of the entries of the resulting matrix when the operation makes sense.
- Students will solve linear programming problems graphically and with matrices.
- Students will answer questions during lecture concerning topics discussed in class.

*Empirical and Quantitative Skills*

- Students will develop business-related mathematical models from given data, such as cost, revenue, profit, supply, demand, or depreciation.
- Students will create empirical probability distributions based on a given set of data.
- Students will use statistics (expected value) to make informed conclusions about real-world problems, such as determining the premium for an insurance policy.
- Students will use data on business resources and constraints to set up and solve linear programming problems.
- Students will analyze financial information to make decisions regarding everyday applications, such as loan payments, annuities, amortizations, or sinking funds.



**TEXTBOOK**

*Business Mathematics* by Tomastik/Epstein, First Edition

Note: You will be required to purchase access to the online homework system, WebAssign, but doing so will automatically give you access to the eBook. There are a variety of purchasing options available (course specific access or Cengage Unlimited). This access can be purchased through the local bookstores or on WebAssign. Starting on the first day of classes, you will be granted access for a 14 day grace period while you determine the appropriate purchasing option for you. For more information, please go to <http://www.math.tamu.edu/courses/eHomework> and click on "Student Information".

**CALCULATOR POLICY**

A TI-83(any version), a TI-84(any version), or a TI-Nspire Non-CAS (with an 84 faceplate) is REQUIRED. These are the only types of calculators that you are allowed to use on assignments and exams. You must bring your calculator to every class period. NOTE: It is considered a violation of the Aggie Honor Code to have any programs, notes, etc. in your calculator that have not been approved by your instructor.

**ACADEMIC INTEGRITY**

*"An Aggie does not lie, cheat, or steal, or tolerate those who do."*

Academic integrity is vital to an academic community and essential for all students and professors. As an Aggie, you have agreed to know and uphold the honor code. Please review <http://aggiehonor.tamu.edu/> carefully. I will be happy to answer any questions you might have. You will be asked to sign the honor code on your work as a reminder of that commitment. If you ever have a question about whether or not an action would be acceptable under the honor code, please ask your professor BEFORE you take the action. If you don't have time to ask, then consider whether or not you would take the action if your professor was beside you.

For this class, I encourage you to study with your classmates (unless I specifically state otherwise). Exams and quizzes (unless specifically stated otherwise) must be completed without any assistance from classmates or other unauthorized sources and should NOT be discussed with anyone who has not yet taken that exam or quiz. Other graded work (such as homework) can be discussed with classmates, but the work submitted must represent YOUR work and YOUR understanding of the topics. You may NOT "copy" someone else's work even if they have explained it to you.

**GRADING POLICIES**

**A (90-100%), B (80-89%), C (70-79%), D (60-69%), F (0-59%)**

Activity	Date	Percentage
Exam 1	9/20/18	20%
Exam 2	10/18/18	20%
Exam 3	11/15/18	20%
Computer Homework	Weekly	10%
Quizzes	As needed	10%
Final Exam	12/11/18	20%
<b>TOTAL</b>		<b>100%</b>

Any questions concerning the grading of a Quiz or Exam must be presented to me within one week of the return of the assignment. Otherwise the grade will not be changed. I will be posting grades during the semester on e-campus. Please go to <http://ecampus.tamu.edu> to login.

**IN-CLASS EXAMS**

There will be three in-class exams. You must bring your student id, approved calculator, and a writing utensil to each exam. Calculators will be checked before or during each exam. If there are any programs, notes, or formulas on your calculator which I did not give you, the occurrence will be considered scholastic dishonesty. The tentative exam schedule is as follows:

- Exam 1:** Thursday, September 20, 2018
- Exam 2:** Thursday, October 18, 2018
- Exam 3:** Thursday, November 15, 2018



**BOOK HOMEWORK**

Although the book homework is not part of your grade, it will help prepare you for the graded homework (on the computer), quizzes, and exams. Because they are not graded, they are called “Suggested Homework Problems”. A list of these problems can be found at the end of the syllabus, in eCampus, and on the Math 140 course webpage.

**COMPUTER HOMEWORK**

There will be a graded computer homework assignment for each section we cover in-class. These assignments will be taken on the WebAssign computer system. For more information about purchasing access and to login please go to <http://www.math.tamu.edu/courses/eHomework>

**QUIZZES**

Quizzes and in-class assignments will be taken for a grade and may not be announced in advanced. Please stay current on your work so that you are prepared for quizzes. These quizzes and assignments will help you prepare for the exams.

**FINAL EXAM**

The final exam will be comprehensive, and you will need a **gray TAMU scantron** in addition to your ID and pencil. The final exam schedule is as follows:

Section	Class Time	Final Exam Date and Time
140-504	TR 3:55 – 5:10 PM	Tuesday, Dec. 11 from 1:00 – 3:00 PM

If it will benefit you, your final exam grade will replace your lowest individual exam grade. Please note that this benefit will only occur if you took all exams.

**ATTENDANCE AND MAKE-UP POLICIES**

The University views class attendance as the responsibility of an individual student. Attendance is essential for most students to complete this course successfully. University rules related to excused and unexcused absences and make-ups are located on-line at <http://student-rules.tamu.edu/rule07>. Please notify me via email prior to the date of an absence, if possible.

Consistent with Texas A&M Student Rules, in cases where advance notification is not feasible (e.g. accident, or emergency), you must provide notification by the end of the second working day after the absence. This notification should include an explanation of why notice could not be sent prior to the class.

For injury or illness too severe or contagious to attend class, you must provide confirmation of a visit to a health care professional affirming date and time of visit. The Texas A&M University Explanatory Statement for Absence from Class form will not be accepted in this case.

It is YOUR responsibility to learn what you missed from class, obtain any notes and assignments, and complete assignments by the regularly scheduled due date. In other words, missing class on the day work was assigned is not a reason for an extension. It is also your responsibility to schedule a make-up if one is needed. Make up exam times can be found at <http://www.math.tamu.edu/courses/makeupexams.html>. Make up exams should be taken at the first opportunity after an exam unless you have a university excused absence for that time too. Make-up quizzes and class assignments should be completed PRIOR to the next class when feasible. No rule can cover every situation. If you encounter extenuating circumstances, please communicate with me as soon as possible. No make-up exams will be administered without prior approval, so contact me as soon as possible if you need to miss a scheduled exam, quiz, or class assignment.

If class is officially cancelled for any reason, you can expect that the assignments due/taken on the missed class day will be due/taken the next time the class meets. Please also check eCampus for additional information.

**ECAMPUS**

eCampus is your primary source for information about our course. That is where I will post announcements, notes outlines, exam grades, and other helpful information. Please bring a copy (either printed or electronic) of the notes outlines to each class.

**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>

### **CLASSROOM ENVIRONMENT**

Please do your part (attitudes, words, and actions) to make our class a place where everyone can feel comfortable exploring mathematical topics without distractions.

### **EXTRA HELP AND PREPARING FOR EXAMS**

#### **Your Professor**

Communication is essential. Please communicate with me before class, after class, during office hours, and via email.

#### **Your Textbook**

Please review your textbook PRIOR to our discussion of that section in class. This provides a framework in your brain for our discussions.

#### **Your Class Notes**

Please review your notes after each class and ask questions about anything that is not clear. Your notes will be very valuable as you study for exams as well.

#### **Your Classmates**

Communicating about mathematics is often a valuable way to solidify ideas. A regularly-scheduled study group is a good way to ensure that you talk about mathematics.

#### **Thoughtful Practice**

I strongly recommend that you practice problems from the book in addition to the graded homework through WebAssign. When you are completing problems, remember that the goal is UNDERSTANDING the topics – not just completing the assignment.

#### **Office Hours**

Office hours are a great time and place to work on your homework and communicate with your classmates and professor. I reserve a small classroom for office hours so you have enough room to work on homework even if you do not need my help that day.

#### **Help Sessions**

You can receive help (at no additional charge) from tutors who were specifically hired for this course. You can find the available times at <http://www.math.tamu.edu/courses/helpsessions.html>

#### **Week-in-Review**

I HIGHLY recommend attending week-in-review sessions every week (not just exam weeks). These sessions are scheduled for Mondays from 5:30 – 7:30 PM beginning the second week of classes. Professor Kilmer teaches other sections of this course and will teach the week-in-review. Each week, she will provide a review of the material that we discussed the previous week and will work additional problems. Please go to <http://www.math.tamu.edu/~kilmer/14018cwir.html> to print out the problems that she will be working at the review. If you are not able to attend the review, please go to the website weekly to review her notes.

### **WORK HABITS**

The average college student should expect to spend 9 hours working on class material outside of class each week to be successful in a 3-hour class. For this class, I recommend that you review the text before we discuss it in class, skim the book homework and online homework questions before we discuss the material, review your notes after class, start the book and online homework as soon as we finish discussing the material, maintain neat work for your homework problems and write study notes to yourself as you work them, maintain study notes of material you wish to review before the test as we progress through the material, try to work on mathematics most days of the week, and ASK QUESTIONS.

### **COPYRIGHT OF MATERIALS**

All class materials (notes, tests, assignments, reviews, solutions, etc.) are copyrighted and may not be copied or reproduced without permission.



**TENTATIVE WEEKLY SCHEDULE**

WEEK OF	TOPIC	SECTIONS
8/27	Linear Functions and Models, Systems of Linear Equations	1.1, 1.2
9/3	Gauss-Jordan Elimination and Solving Systems of Linear Equations, Systems with Non-unique Solutions	1.3, 1.4
9/10	Matrix Arithmetic, Matrix Multiplication, Matrix Inverses	2.1, 2.2, 2.3
9/17	Review, Exam 1 (1.1-1.4, 2.1-2.3)	
9/24	Setting up Linear Programming Problems, Graphing Systems of Linear Inequalities, Solving Linear Programming Problems	3.1, 3.2, 3.3
10/1	Simplex Method, Sample Spaces	3.4, 4.1
10/8	Basics of Probability, Rules of Probability, Expected Value	4.2, 4.3, 4.4
10/15	Review, Exam 2 (3.1-3.4, 4.1-4.4)	
10/22	Polynomial, Power, Rational, and Piecewise-Defined Functions	5.1, 5.2
10/29	Exponential Functions	5.3
11/5	Combinations of Functions, Logarithmic Functions	5.4, 5.5
11/12	Review, Exam 3 (5.1-5.5)	
11/19	Simple and Compound Interest (No class on 11/21-11/23)	6.1, 6.2
11/26	Annuities, Amortization	6.3
12/3	Review for Final Exam, Final Exams (12/4 is our last day of regular class)	
12/10	Final Exams	

**SUGGESTED HOMEWORK PROBLEMS (FROM THE TEXT)**

SECTION	PROBLEMS
<b>EXAM 1</b>	
1.1	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 23, 27, 31, 39, 43, 47, 51
1.2	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 23, 25
1.3	1, 5, 9, 13, 17, 21, 25, 27, 29, 31, 33, 37, 41, 45
1.4	1, 3, 5, 7, 11, 15, 19, 23, 27, 31, 35, 39, 43, 51, 57
2.1	1, 5, 11, 15, 17, 21, 25, 29, 31, 35, 41, 43, 45, 47, 49, 51, 53
2.2	1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 53, 57, 61, 65, 67
2.3	1, 5, 9, 13, 17, 21, 25, 29, 35, 37, 47
<b>EXAM 2</b>	
3.1	1, 3, 5, 7, 9, 13, 17, 21
3.2	1, 5, 9, 15, 19, 23, 27, 31, 35, 39, 43, 47, 49, 53, 57
3.3	1, 5, 7, 9, 13, 17, 19, 21, 23, 37
3.4	1, 3, 5, 7, 9, 13, 17, 21, 25, 29, 33, 37
4.1	1, 5, 9, 13, 15, 17, 21, 25
4.2	1, 3, 5, 7, 9, 13, 17, 21, 29, 33
4.3	1, 3, 5, 9, 11, 13, 17, 21, 25, 29, 31, 35
4.4	1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 45
<b>EXAM 3</b>	
5.1	3, 5, 7, 9, 11, 17, 19, 23, 31, 39, 43, 47, 49, 53, 57, 67
5.2	1, 5, 7, 11, 15, 17, 21, 25, 29, 31, 33, 35, 36, 37, 41, 47, 49, 51, 53
5.3	1, 5, 9, 15, 19, 23, 27, 31, 35, 37, 41, 45, 47
5.4	1, 3, 7, 9, 13, 15, 19, 23, 27, 31, 33, 37, 43, 47
5.5	1, 5, 9, 13, 17, 25, 29, 33, 37, 41, 49, 53, 59, 63
<b>NEW FOR FINAL</b>	
6.1	1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 43, 47, 51
6.2	3, 7, 11, 15, 19, 23, 25
6.3	5, 7, 13, 17, 21, 23, 29, 31, 37, 41, 43