CONCEPTS OF MODERN MATHEMATICS II

MATH 1351.001 | FALL 2023

Instructor: Dr. Deborah Koslover

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Classroom: RBN 4027

Meeting Time TTh 2 – 3:20 PM

Office Hours: M 12:30-1:15 PM, TTh 1 -1:50 PM, W 2:30-3:30 PM or by appointment.

Course Description

What will you do when you explain a concept to a student using the method that is clearest and most obvious to you and the student doesn't understand? Will you repeat what you said in exactly the same words? What if the student still doesn't understand?

How will you answer a gifted student who asks a question and you don't immediately know the answer? Will you say, "That's not part of this class. You'll learn that in another class."? If so, how will you keep this student engaged, learning and not causing mischief?

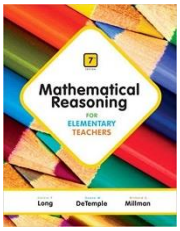
The purpose of this class is not to teach you elementary mathematics. You already know it. The purpose is to have you look at mathematics from different viewpoints, to see that it can be interpreted and learned in different ways. This will allow you to explain concepts in multiple ways to address the needs of students who think differently from you.

Additionally, this class will train you how to attack problems that you haven't seen before. You will be able to guide students through the process of addressing challenging problems. Your students will learn, by example, from you how to think critically and how to move forward when addressing new material.

Catalog Description: Study of geometry and elementary probability and statistics. Course for Interdisciplinary Studies majors only.

Prerequisite: Math 1350 or equivalent. (Credit not given to mathematics majors or minors.)

Textbook



Mathematical Reasoning for Elementary Teachers 7th Edition, by Calvin Long, Duane DeTemple and Richard Millman, Pearson Education, 2019

Website

You will be using Canvas. Go to www.uttyler.edu/canvas to log into Canvas using your regular patriots account. If you have enrolled in the course, you should have access to the website. You will find important documents, grades, lecture notes, and announcements on Canvas.

Attendance is mandatory and attendance records will be kept. Notify Dr. Koslover in advance if you must miss a class, be late for a class or leave early. (Official University Policy: Class attendance is the responsibility of the student. When a student has a legitimate absence, the instructor may permit the student to complete missed assignments. In many cases class participation is a significant measure of performance, and non-attendance may adversely affect a student's grade. When a student's absences become excessive, the instructor may recommend that the student initiate a withdrawal.)

Learning Outcomes

At the conclusion of this course, you will be able to

1. Analyze and solve problems using a variety of algebraic approaches.
2. Recognize the relationship between algebra and geometric problems and use that knowledge to solve them.
3. Know precise definitions of geometric objects and be able to classify their similarities and differences.
4. Use appropriate units of measurement in one, two and three dimensions.
5. Prove the Pythagorean Theorem, using a hands-on demonstration. Apply the Pythagorean Theorem to solve problems.
6. Solve problems involving area, perimeter, volume and surface area.
7. Identify transformations in geometry.
8. Use hands-on constructions to understand properties in geometry, including congruence and similarity, and solve problems involving these ideas.
9. Analyze bar-graphs, histograms, line plots, stem-and-leaf plots, pie charts and scatterplots to compare data and make inferences.
10. Use problem solving skills to examine a situation and determine conditional probability.
11. For all of the above, communicate these concepts in written form, in such a way that an appropriately aged student can understand.

Course Evaluation

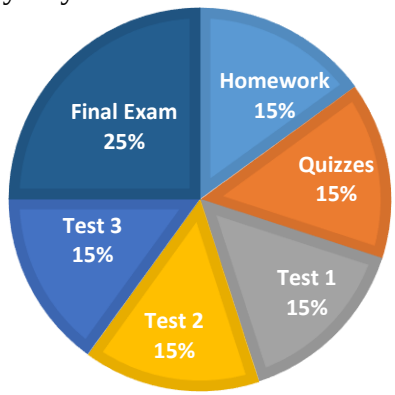
The first thing that you need to understand about evaluation in this class is that <u>the answers are worth almost nothing</u>. You already know elementary school mathematics and should be able to get the answers to any question that I ask. However, this class is not about answers. It is about the **concepts and techniques** used to find the answers. Showing that you can apply these concepts and techniques is what you will be graded on. If you get an answer right on a test, but you use a technique different from the one requested, you will get say 0 or 1 point out of 10.

At the end of the semester, you will find your final grade on my.uttyler.edu. It will also be posted on Canvas.

A final course grade of

90% is guaranteed to be at least an A
80% is guaranteed to be at least a B
70% is guaranteed to be at least a C
60% is guaranteed to be at least a D.

All grades below 60% will be F.



The Plan

(15%) Homework will be assigned each class period. It will be due on Thursday of the following week at 5 AM. Homework must be turned on Canvas. A link will be posted on Canvas for you to submit your assignments. You must scan your homework and submit it as a pdf file. Some free phone scanners are posted on Canvas. Photographs will not be accepted.

Like last semester, you may write up notecards to use on your tests. Topics which may be listed on notecards will be indicated in blue in the notes.

Striving for success without hard work is like trying to harvest where you haven't planted. _David Bly

(15%): You can expect a quiz every Thursday, excluding the first week and excluding the week of and after a test. To allow for emergencies and necessary absences, the lowest score will be dropped at the end of the semester. Make-ups will not be granted for quizzes. Athletes, please plan to take your quizzes before your trips. The quizzes will be easier than the tests.

It's not that I'm so smart, it's just that I stay with problems longer. _Albert Einstein

TESTS (15% each) and FINAL EXAM (25%): There will be three tests, two held on Thursdays and one on a Tuesday, and a final exam. These exams will test your knowledge of the material taught in the class and practiced on the homework. The final exam will be comprehensive but will emphasize material in the final weeks of the course. No tests will be dropped.

- Test 1 – Thursday, September 21
- Test 2 – Tuesday, October 17
- Test 3 – Thursday, November 16

Final Exam: Tuesday, December 5, 2 – 4 PM

Please don't plan your travel to start before the date the final exam is scheduled!

Success is dependent on effort. _Sophocles

Make-ups

Make-ups for **documented** absences that are **required** as part of a UT Tyler obligation (e.g. athletes participating in an event, participating in a debate contest, etc.) or for religious observation will be granted. For all make-ups of this type, prior notification of at least one week and documentation are required. Other make-ups are granted only in extreme cases such as hospitalization and at the sole discretion of the instructor.

Other Details

Calculator Policy: Calculators will be allowed on quizzes and tests. You may use any non-graphing calculators with a square root key. You may not use your phone. However, all work must be shown. I will have some calculators available when they are allowed.

OTHER HELP

Math Learning Center (MLC): RBN 4021. Free walk-in tutoring is available. A schedule will be posted on Canvas. The MLC will open the second week through the last week of classes. Self-enrollment https://uttyler.instructure.com/enroll/GK9MNC

Cell phones and other electronic devices: Please set your cell phones to silent mode. If you are expecting an emergency call, please notify the professor in advance, sit near the door, and answer the phone outside. You will not be allowed to wear electronic devices (except hearing aids) during an exam. During tests, cell phones must be turned off and placed in sight on your desk.

Calendar

AUGUST

MON	TUE	THUR
21	22	24
First Day		
28	29	31
		Quiz 1

September 4
Census Date

December 5
Final Exam
2 – 4 PM

SEPTEMBER

MON	TUE	THUR
4	5	7
Labor Day		Quiz 2
11	12	14
		Quiz 3
18	19	21
		Test 1
25	26	28

OCTOBER

MON	TUE	THUR
2	3	5
		Quiz 4
9	10	12
		Quiz 5
16	17	19
	Test 2	
23	24	26
30	31	
Drop Day		

NOVEMBER

MON	TUE	THUR
		2
		Quiz 6
6	7	9
		Quiz 7
13	14	16
		Test 3
20	21	23
Thanksgiving		
27	28	30