

CONCEPTS OF MATHEMATICS I

MATH 1350.001 | SPRING 2024

Course Description

When you see a word problem on a test, do you confidently start the problem, sure of your abilities to solve it? Or do you groan inwardly and skip it in the hope the next problem is easier? Do you know people who are terrified of word problems? Do they wildly guess an answer or simply skip the problem entirely?

As a teacher, you will be teaching problem solving. This includes solving word problems. In this class, we will study problem solving techniques and models. It is not good enough to know how to multiply. We must also recognize the real-world situations where multiplication is required. We will study topics in logic, set theory and conceptual foundations of basic number systems to give you the foundational basis to teach problem solving.

This course satisfies the Core requirement of some School of Education majors only. It has a prerequisite of MATH 1314 College Algebra or the equivalent.

Website

You will be using Canvas. Go to www.utt Tyler.edu/canvas to log into Canvas using your regular patriots account. If you have enrolled in the course, you will have access to the website. You will find important documents, grades, lecture notes, and announcements on Canvas. In general, I will notify you by email and on Canvas if there are any disruptions or changes to our class.

Textbook and Materials

Mathematics for Elementary Teachers by Michelle Manes. This is a free eBook which you can download from <https://open.umn.edu/opentextbooks/textbooks/570>. We also will use some supplementary material which will be provided when the time comes.

You will need a package of 3×5 note cards. (Plain white or colorful)

Instructor: Dr. Deborah Koslover

Office: RBN 4010

Email: dkoslover@utt Tyler.edu

Classroom: RBN 4024

Meeting Time: TTh 2:00 – 3:20 PM

Office Hours: TTh 10 AM – 12 PM or by appointment.

Attendance is mandatory and records will be kept. Notify Dr. Koslover in advance if you must miss a class, be late or leave early. (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. Apply Polya's Method to solve problems involving all concepts covered in the course.
2. Demonstrate a proficient conceptual understanding of arithmetic, algebraic reasoning, and proportional reasoning.
3. Analyze and solve problems involving topics from number theory, including divisibility, primality, GCD and LCM
4. Use different models and algorithms for performing and describing arithmetic operations with whole numbers, integers, and rational numbers.
5. Solve and explain problems involving proportional reasoning.
6. Analyze and troubleshoot samples of student work, being able to give proper feedback.
7. Give detailed explanations of problem-solving techniques for applications in elementary and middle school mathematics, as it pertains to the concepts mentioned above.
8. Identify the connections between the different mathematical concepts covered, with regard to elementary and middle school mathematics.



Course Evaluation

The first thing that you need to understand about evaluation in this class is that the answers are worth almost nothing. 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

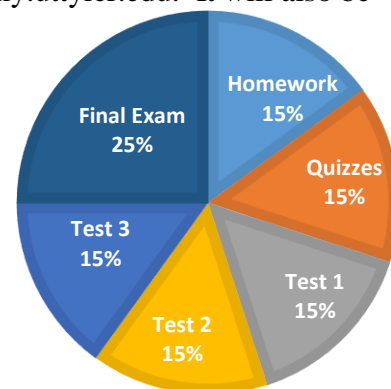
90% is guaranteed to be at least an A

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. Homework will be due on Thursdays at 5 AM (Wednesday night). 10% deduction if you turn it in by 2 PM on Thursday. No credit after 2 PM on Thursday.

Homework must be turned in 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.

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



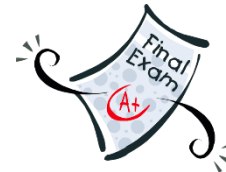
(15%): There will be seven quizzes. Please see the calendar at the end of the syllabus for dates. The quizzes will be easier than the tests. Your lowest quiz score will be dropped. If you have 3 or fewer unexcused absences, your second lowest quiz grade will be dropped.

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 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. Tests will be held on February 8, March 7, and April 11.

Success is dependent on effort. __Sophocles

Final Exam: (Tentative) Tuesday , April 30, 2:00 – 4:00 PM



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

Notecards

You should make *hand-written* notecards with **definitions, theorems, formulas and a few miscellaneous topics** which will be identified for you in class. These will be allowed on all quizzes and tests. You are not required to copy all definitions, theorems, etc., just those you'd like to have available for tests or quizzes. You may **not** write sample problems or methods of doing problems on the cards. Cards will be turned in with tests and quizzes. If you have "illegal" information on the cards, points will be deducted from your exams.

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.



Make-ups will be allowed for the following excused absences.

- 1) Illnesses, with a doctor's note, no exceptions.
- 2) Your child's illness, with a doctor's note.
- 3) Court appearances, including citizenship court, with documentation
- 4) Weddings, funerals or military advancement with documentation **and** a photograph showing that you attended the event.

Doctor's notes must be dated either before you miss the class or within 2 days after you missed the class, unless you or your child are hospitalized. In case of hospitalization, bring evidence of hospitalization.

Make-ups for test must be taken within 3 days after returning to class except for lengthy illnesses or hospitalizations

Other important information

Now is the time to think about what grade you "need" to make in this class. Three weeks before the end of the semester is too late to realize that you are not on the road to earning that grade. There will be no extra credit or special assignments for any reason. No tests or quizzes will be dropped other than the quizzes mentioned above. Take this class seriously. Attend every session and study. Make use of my office hours and the tutoring that is available to you.

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			FEBRUARY			MARCH			APRIL		
JANUARY			MON	TUE	THU	MON	TUE	THU	MON	TUE	THU
MON	TUE	THU			1	4	5	7	1	2	4
15	16	18			Quiz 2			Test 2			Quiz 6
MLK Day	First Day		5	6	8	11	12	14	8	9	11
22	23	25			Test 1	Spring Break					Test 3
		Quiz 1	12	13	15	18	19	21	15	16	18
29	30										
Census Day			19	20	22	25	26	28	22	23	25
Homework due 5 AM on Thursday morning (or Wednesday night)					Quiz 3	Drop Day		Quiz 5			Quiz 7
			26	27	29	Final Exam April 30, 2 – 4 PM					
					Quiz 4						