



# Mathematics for Teachers I – MATH 1350.88

## Course Syllabus: Fall 2019

“Northeast Texas Community College exists to provide responsible, exemplary learning opportunities.”

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	10:30 – 11:00 2:30 – 4:30	10:30 – 11:00 1:30 – 4:30	10:30 – 11:00 2:30 – 4:30	10:30 – 11:00 2:30 – 3:30	As needed	Professor checks emails multiple times a day.

*The information contained in this syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.*

**Catalog Course Description (include prerequisites):** This course includes concepts of sets, functions, numeration systems, number theory, and properties of the natural numbers, integers, rational, and real number systems with an emphasis on problem solving and critical thinking. Prerequisite: MATH 1314 (College Algebra) or its equivalent.

**Required Textbook(s):**

Long, DeTemple, Millman (2015). Mathematical Reasoning for Elementary Teachers, 7th Edition.

You have already purchased the MyMathLab Access code when you registered for this class. The access code is in the “Start Here” folder in Blackboard. Follow the instructions that I have for you in the “Start Here” folder. The code includes an online e-text book. You may also purchase the loose-leaf textook in the NTCC bookstore. It’s called a “Binder Text” and is cheaper than a hard-back book. I do not require you to buy the book, but I do highly recommend it. It would last for both courses.

ISBN:

978-0-321-91474-3 LONG/MATHEMATICAL REASONING BINDER TEXT W/MYMATHLAB

Both the loose-leaf textbook and the MyMathLab code will work for BOTH 1350 & 1351. You only have to purchase them once.

Note: The NTCC Bookstore link is [www.ntcc.edu](http://www.ntcc.edu)

**Publisher:** Pearson, Boston, MA

**Recommended Reading(s):**

None

### **Student Learning Outcomes:**

Upon successful completion of this course, students will

The student will be able to:

**1350.1** Systematically solve problems using various strategies.

**1350.2** Perform and model addition, subtraction, multiplication, and division on sets, subsets, and various number sets.

**1350.3** Explore patterns and sequences as inductive and intuitive methods for problem solving.

**1350.4** Apply and use properties of the real number system.

**1350.5** Solve applications using fractions, decimals, percents, ratios, and proportions.

### **SCANS Skills:**

N/A

### **Lectures and Discussions:**

Since this is an online class, students must be self-motivated to keep up with the due dates, turn in assignments ON TIME, and take Exams as scheduled. Students need to check their email accounts daily AND log in to MyMathLab to make sure they receive all communications from the professor.

### **Evaluation/Grading Policy:**

Three major 100 point examinations will be given, which will count for 45% of your total grade (worth 15% each). If an exam is missed or failed, the highest possible make-up grade is a 70 (with instructor notification prior to the exam missed). The 2<sup>nd</sup> exam and the Final Exam MUST BE TAKEN IN PERSON IN THE NTCC TESTING CENTER. If you do not live near NTCC, you may take your exam from any testing facility that is near you (student is responsible for getting testing site information to me and also for paying any fees the alternate testing facility may charge).

The average of a series of homework assignments will be worth 20% of the total grade (all homework is on MyMathLab. All homework due dates are posted on MyMathLab. Homework is due on the due date...no exceptions.

Quizzes (over each chapter) will count for 5% of your overall average.

Two online Projects will count for 10% of your grade (see below for explanation of both).

A comprehensive final examination will contribute 20% to the final grade, and the final must be taken in the testing center of the NTCC campus. If you do not live near NTCC, you may take your exam from a nearby testing facility (student responsible for getting testing site information to me and also for paying any fees the facility may charge).

**Tests/Exams:**

3 Exams (2<sup>nd</sup> exam must be taken on campus) 45% (15% each)

Final Exam (must be taken on campus) 20%

Online Assignments (MyMathLab) 20%

Quizzes (MyMathLab) 5%

2 Projects (explained below) 10%

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TOTAL 100%

"A" 90%

"B" 80%

"C" 70%

"D" 60%

"F" Below 60%

**Project #1 Description (due date will be mid-semester – I will send exact date out soon.):**

Find a children's book that teaches a math lesson. For instance, "The Greedy Triangle" by Marilyn Burns is a cute story about shapes and angles. I created an activity with play-doh to help students apply what the book teaches (they make different shapes out of the play-doh). You will need to do something similar: find a children's book that you like and create a "hands-on" activity to go along with it. You will then need to write this up (step-by-step instructions on your hands-on activity that goes along with your book) and post it in the Discussion Board on Blackboard in a few of weeks, so please start looking now.

NOTE: Your best bet is to find a teacher (can be any grade level) and ask her to recommend a book and activity...she probably has one you can borrow. You can also google this online...I have found many good activities there. Just be sure to give the author credit on the Discussion Board.

\*\*Be sure to look at the Children's BOOK LIST that I put on Blackboard (on the Homepage underneath my picture). There are some WONDERFUL books that teach a math lesson listed there. I have also put a couple of examples on there for you to look at to get some ideas.

**Project #2 Description (due date will be near the end of the semester – I will send out exact date soon.):**

For this project, you will be writing up a complete lesson plan (post on the Discussion Board), and then video yourself teaching that math lesson. You will be posting the video on Blackboard also. I will send more details out about that later, BUT for now you need to start looking for a complete lesson plan either online or from a school teacher (preferably). This lesson plan should be geared toward the age group you want to one day teach, and it should of course be a math lesson. Some examples could be a lesson on telling time, shapes, fractions, decimals, addition, subtraction, multiplication, division, etc. It can be any math topic...but you must have a complete lesson plan for it. This should be longer than the book project. It needs to actually "teach" a lesson to the students. And, you must have a hands-on activities to go along with your lesson. Kids need to use their tactile/kinesthetic senses when learning, so

please make sure your lesson has something for them to "manipulate" during the lesson. Examples of manipulatives are blocks, shapes, dice, toothpicks, bingo chips, rulers, hands on a clock, paper money, coins, etc. (anything they can touch and learn from) .

You will need to video yourself teaching this lesson (talk to the camera as if you were talking to children – actually teach the lesson and demonstrate concepts with manipulatives. The video should be 8 – 10 minutes in length. Below you will find instructions on how to upload the video on Blackboard.

### **Steps to complete the Project #2 (video) assignment:**

1. Each student should create an account at <http://www.youtube.com/>.
2. Video the presentation using a webcam or video recorder (using a video recorder will require the student to load the video on their computer).
3. Go to the YouTube account and select UPLOAD VIDEO.
4. Once the video is uploaded from the computer to YouTube, there will be a link that YouTube generates for the video.
5. Copy and paste this link into the Discussion Forum that was created for the assignment in Blackboard.
6. Once it is pasted, all students should be able to click on the link and watch the video.

### **Before you post your video, please enter the following information for your lesson plan on the Discussion Board in Blackboard:**

- 1) Your name
- 2) Title of your lesson
- 3) Objective of your lesson (what it will teach)
- 4) Materials needed for your lesson (anything you or students will use during the lesson)
- 5) Procedure of lesson (list these in steps - list how you would go about teaching the lesson); be as detailed as possible here (leave directions good enough for a substitute teacher to know how to teach your lesson)
- 6) Be sure to list your dependent practice for the lesson - what you will have students do WITH your help or in groups/partners
- 7) List the independent practice - what students will do ALONE to demonstrate that they've learned the lesson
- 8) Closure - how will you close (summarize) your lesson with your students

### **Homework, Quizzes, and Exams:**

All problems assigned to each section are located in the Homework tab in MyMathLab. Dates for each section are located in your MyMathLab Calendar.

- 1.1 An Introduction to Problem Solving
- 1.2 Polya's Problem-Solving Principles
- 1.3 More Problem-Solving Strategies
- 1.4 Algebra as a Problem-Solving Strategy
- 1.5 Additional Problem-Solving Strategies
- 1.6 Reasoning Mathematically

#### **QUIZ #1**

- 2.1 Sets and Operations on Sets
- 2.2 Sets, Counting, and the Whole Numbers
- 2.3 Addition and Subtraction of Whole Numbers

2.4 Multiplication and Division of Whole Numbers

QUIZ #2 (Chapter 2 only)

**EXAM 1 (Chapters 1 & 2 – may be taken at home)**

3.2 Algorithms for Adding and Subtracting Whole Numbers

3.3 Algorithms for Multiplication and Division of Whole Numbers

3.4 Mental Arithmetic and Estimation

QUIZ #3 (Chapter 3 only)

4.1 Divisibility of Natural Numbers

4.2 Tests for Divisibility

4.3 Greatest Common Divisors and Least Common Multiples

QUIZ #4 (Chapter 4 only)

**EXAM 2 (Chapters 3 & 4) \*\*MUST BE TAKEN IN A TESTING FACILITY (see details above)**

5.1 Representation of Integers

5.2 Addition and Subtraction of Integers

5.3 Multiplication and Division of Integers

QUIZ #5 (Chapter 5 only)

6.1 The Basic Concepts of Fractions and Rational Numbers

6.2 Addition and Subtraction of Fractions

6.3 Multiplication and Division of Fractions

QUIZ #6 (Chapter 6 only)

7.1 Decimals and Real Numbers

7.2 Computations with Decimals

7.3 Proportional Reasoning

7.4 Percent

QUIZ #7 (Chapter 7 only)

**EXAM 3 (Chapters 5, 6, & 7 – may be taken at home)**

**COMPREHENSIVE FINAL EXAM (Over all chapters) \*\*MUST BE TAKEN IN TESTING FACILITY (see notes above)**

***Exam Dates & Quiz due dates can be found in the “Start Here” folder in Blackboard, as well as on MyMathLab.***

### **Other Course Requirements**

Students should have a computer that is Internet accessible, and they should have the ability to navigate through a website, use a chat room, post remarks to a discussion board, and email.

### **Student Responsibilities/Expectations:**

Attendance:

Students are expected to check in to the class often on Blackboard and MyMathLab to find the assignments and communications from the instructor. Since this is an online class, students must be self-motivated to keep up with the due dates, turn in assignments ON TIME, and take Exams as scheduled.

Students in the online section of this class must submit weekly assignments on the due dates to remain enrolled in the class. The instructor reserves the right to administratively drop a student who goes beyond two weeks in turning in online assignments unless the instructor is notified and given a valid reason for late assignments.

**NTCC Academic Honesty Statement:**

"Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook."

**Academic Ethics**

The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. Refer to the student handbook for more information on this subject.

**ADA Statement:**

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to arrange an appointment with a College counselor to obtain a Request for Accommodations form. For more information, please refer to the NTCC Catalog or Student Handbook.

**Family Educational Rights And Privacy Act (FERPA):**

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

**Other Course Policies:**

The college's official means of communication is via your campus email address. I will use your campus email address, Blackboard, and MyMathLab to communicate with you outside of class. Make sure you keep your campus email cleaned out and below the limit so you can receive important messages.