

MATH 3803

Algebra For P-8 Teachers

Instructor: Kyunghee Moon, Ph. D.
Office: Boyd Building, Room 216
Contacts: Email: kmoon@westga.edu (Do not use the Courseden email)
Phone: 678-839-4151
Office hours: 10:50-12:30; and 1-2 (T, Th) (Carrollton)
11:30-2:00 (F) (Newnan)

Textbook:

Billstein, R., Libeskind, S., & Lott, J. (2012). *A Problem solving approach to mathematics for elementary school teachers*, 11th Edition. Pearson Addison-Wesley: Boston, MA.

Overview of the Course: This course is designed to help prospective P-8 teachers develop mathematical understanding of elementary mathematics through collaboration and problem solving. From this course, you will have opportunities to reconstruct elementary number concepts through problem solving and use those concepts to solve realistic mathematics problems. Although there will be some lecturing at times, there will be ample opportunities for you to reconstruct mathematical ideas by communicating and sharing your mathematical ideas with your classmates.

Goals and Objectives of the Course include, but not limited to,

- Explain the role of place value in the operations of decimal numbers and apply the idea in the computation.
- Convert terminating decimals to and from fractions and percents using the ideas of place value.
- Explain the difference between repeating and non-repeating nonterminating decimals and their connection to rational and irrational numbers and be able to convert repeating decimals to and from fractions.
- Be able to solve a system of linear equations to represent equations graphically, and to explain how the solution of a linear system can be interpreted geometrically.

- Explain the difference between quadratic functions and linear functions, be able to solve quadratic equations, and explain the relationship between equations and function graphs.
- Justify in what problem situations two quantities are proportional and use the proportional reasoning in problem solving.
- Explain difference between simple and compound interests and be able to apply the concepts in real life problem situations.

Attendance:

- Students must be **punctual** and **always** attend class. There could be unforeseen emergencies that do come up. However, anyone missing classes **4 times or more** during the semester **might not** receive a credit for the course. Medical excuses are only accepted when provided with documentation.
- Students cannot enter the classroom once the class starts and should wait **SILENTLY** outside of the classroom until the door is reopened. In such cases, students will be recorded as tardy. The first two tardiness combined will be considered as one absence. After two tardiness, each tardiness will be considered as an absence.
- Students who disrupt the class for any reason will be escorted to outside of the classroom, disallowed to return for the day, and marked absent.
- Students who have 0 or 1 absence (with **NO** exception even for medical issues) will be given an extra credit of 5 points toward the final grade.

Use of Calculator and Other Electronics: Calculator is the only electronic device students can use in the classroom. **Calculator as a phone accessory is NOT allowed.** In fact, in no circumstance are students allowed to use any types of electronics other than calculators. Students who do not abide this rule will be escorted to outside of the classroom, marked absent, and won't be allowed to return for the day.

Grading: Your final grade in the course will be based on your performance on quizzes, a mid-term exam, and a final exam.

Quiz	30 pts	
Midterm		30 pts
Final Exam		40 pts
(Extra Credit)		5 pts
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- A quiz will be given every week, in particular in the weeks 2, 3, 4, 5, 6, 9, 10, 11, 12, and 13. Students will be allowed to drop two lowest scores (**No makeup quiz in any case**).
- The midterm exam will be on Week 7. The final exam will be on the final exam week. (Check the date and time on the UWG academic calendar.) No make-up exam is permitted except for medical emergencies that can be documented.
- Students are expected to do homework in a timely manner. However, homework will be neither collected nor graded.
- Final Course Grade:

A	90-105
B	80-89.99
C	70-79.99
D	60-69.99
F	Below 60

Common Language Link

As a student at UWG, you need to understand school policies and codes. Please read the information on <http://tinyurl.com/UWGSyllabusPolicies>.

Tentative Schedule

Week	Topics	Materials
1 & 2	<ul style="list-style-type: none">• Rational Numbers• Addition and Subtraction with Real Numbers	Exploration 1: Textbook-Ch. 6.1 & 6.2
3 & 4	<ul style="list-style-type: none">• Multiplication and Division with Real Numbers• Ratio & Proportion	Exploration 2: Textbook-Ch. 6.3 & 6.4
5 & 6	<ul style="list-style-type: none">• Decimals and Percents• Operations with Decimals	Exploration 3: Textbook-Ch. 7.1 & 7.2
7 & 8	<ul style="list-style-type: none">• Midterm• Nonterminating Decimals• Percents and Interests	Exploration 4: Textbook-Ch. 7.3 & 7.4
9 & 10	<ul style="list-style-type: none">• Real Numbers• Variables	Exploration 5: Textbook-Ch. 8.1 & 8.2
11 & 12	<ul style="list-style-type: none">• Equations• Functions	Exploration 6: Textbook-Ch. 8.3 & 8.4
13 & 14	<ul style="list-style-type: none">• Equations in a Cartesian Coordinate System• Review	Exploration 7: Textbook-Ch. 8.5
15	<ul style="list-style-type: none">• Final Exam	