

**Math3803-N01: Algebra for P-8 Teachers**  
Syllabus for Spring 2019

**Instructor:** Dr. Kyunghye Moon

**Contact Information:**

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**Office hours:** 12:30-3:00 (T & Th) at Carrollton campus

**Text:** *A Problem solving approach to mathematics for elementary school teachers*, 12th Edition. Pearson Addison-Wesley: Boston, MA. (by Billstein, R., Libeskind, S., & Lott, J., 2015). You may rent or buy a book that comes with MyMathLab access card or purchase an access code from MyMathLab.

**Electronics:** Students can only use basic scientific calculators (no cellphone calculators). No graphing or programmable calculator is permitted for this course. Students are not allowed to share calculators during exams.

**Overview:** This is an online course by instruction and a combination of online and offline course by exam. Students learn mathematical concepts/ideas through the textbook/eText and resources, do homework, and take online tests on MyMathLab. They, however, take pencil and paper tests on campus for a midterm and a final exam.

To register for MyMathLab, you will need a valid e-mail address, a course ID ([moon17349](#)), and a student access code (included with your textbook). If you do not have an access code (they do not usually come with used books), you can purchase it using a credit card or PayPal at the time of your registration. Follow instructions on the [Registration\\_Handout.pdf](#) to register for MyMathLab.

**Goals and Objectives** include, but not limited to:

1. Understand and explain ratios and proportions and solve word problems using properties.
2. Understand and explain sequences such as arithmetic, geometric, and Fibonacci sequences.
3. Be able to convert sequences into mathematical forms with variables by finding the  $n$ th term.
4. Understand and explain the relationships between fractions, decimals, and percents and be able to convert one from another.
5. Solve problems involving percents and percent increase/decrease.
6. Explain difference between simple and compound interests and be able to apply the concepts in real life problem situations.
7. Understand and explain the difference between repeating and non-repeating nonterminating decimals and their connection to rational and irrational numbers.
8. Understand properties of operations and of exponents and apply them in problem solving.
9. Solve equations and construct equations from word problems and solve them.
10. Understand and explain what function is and derivate function equations from sequences.

11. Solve a system of linear equations and understand and explain how the solution of a linear system can be interpreted geometrically.
12. Define (theoretical) probability and the law of large numbers and apply them in problem solving.
13. State the properties of probability and apply them in problem solving.
14. Explain the properties of probability using various representations (such as tree diagram and area model).
15. Explain how the results from simulations are related to theoretical probabilities.

**Course Structure:** The content of the course is divided into three modules. The following is a course schedule.

#### Module 1 (Chapter 6 & 7)

Week 1: Section 6.4: Proportional Reasoning

Week 2: Section 7.1: Rational Numbers with Finite Decimal Representations

Week 3: Section 7.2: Operations with Decimals:

Week 4: Section 7.3: Rational Numbers with Repeating Decimal Representations

Week 5&6: Section 7.4: Percents and Interests, Online Test 1, & Midterm

#### Module 2 (Chapter 8)

Week 7: Section 8.1: Real Numbers, Properties of Operations and of Exponents

Week 8: Section 8.2: Sequences and Variables

Week 9: Section 8.3: Equations

Week 10: Section 8.4: Functions

Week 11&12: Section 8.5: Equations in a Cartesian Coordinate System & Online Test 2

#### Module 3 (Chapter 9)

Week 13: Section 9.1: Determining Probability

Week 14: Section 9.2: Multistage Experiments

Week 15: Section 9.4: Permutations and Combinations & Online Test 3

Week 16: Final Exam

#### **Course Outline:**

Students will follow the course schedule outlined in this syllabus to complete approximately one section per week with each section involving viewing textbook/PowerPoint, watching a section video, and working on a homework set. Homework assignments must be worked in their prescribed order, and students may attempt homework problems unlimited times with no time limit. Each homework assignment must be completed by the due date. In case that students fail to complete homework by the due date, they need to notify the instructor to submit it as late homework. A late homework submission will be allowed only once during the entire semester.

Students will have three online tests, one after each module. Students will have an access to the test for a three day period and can take it at their convenient time during the period. The time limit will be three hours with only one number of attempt.

Students will take a midterm exam and a final exam at the Newnan campus as pencil and paper tests. The midterm exam (Module 1) and the final exam (Module 2 & 3) will take place on

Feb. 15th at 2-3:15 and May 3<sup>rd</sup> at 2-4, respectively. The rooms for the exams are to be announced at later times.

There will also be a writing assignment, which is due April 5<sup>th</sup>. The details about the writing assignment will be announced at a later time.

**NOTE:**

-All online homework and tests must be completed in order to be eligible to take pencil and paper exams: Module 1 homework assignments and Online Test 1 before Midterm and Module 2 and 3 homework assignments and Online Tests 2 and 3 before Final.

-Students need to ensure they understand definitions, properties, theorems, procedures, and ideas involved in all homework and online test problems to prepare for offline exams.

-No make-up exams will be provided.

**Conferences:** Students are encouraged to seek additional help in case they have difficulties understanding materials. Students may drop by the instructor's office during office hours or get help from the Math Tutoring Center (located on the second floor of the Boyd Building). Students may also communicate with the instructor through emails.

**Grading:** The final grade in the course will be based on the performance on homework (15 points), a writing assignment (5 points), online tests (30 points), a midterm exam (20 points), and a final exam (30 points), totaling 100 points.

**Final Course Grade**

Homework: 15%

Writing: 5%

Online Tests: 30%

Midterm: 20% (Feb. 15<sup>th</sup> at 2-3:15pm)

Final: 30% (May 3<sup>rd</sup> at 2-4pm)

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Total: 100%

A: 90-100%; B: 80-89%; C: 70-79%; D: 60-69%; F: Below 60%

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**Academic Dishonesty:** Any instance of academic dishonesty will result in a failing grade for this course and may result in additional disciplinary action.

**Common Language Link:** For school policies and supports, check the link below:  
<https://www.westga.edu/administration/vpaa/common-language-course-syllabi.php>.

**List of Due Dates for Assignments and Tests:**

Homework 6.4: Jan. 11th  
Homework 7.1: Jan. 18th  
Homework 7.2: Jan. 25th  
Homework 7.3: Feb. 1st  
Homework 7.4: Feb. 8th  
Online Test 1: Feb. 13th  
Midterm Exam: Feb. 15th  
Homework 8.1: Feb. 22nd  
Homework 8.2: March 1st  
Homework 8.3: Mar 8th  
Homework 8.4: March 15th  
Homework 8.5: March 29th  
Online Test 2: April 3rd  
Writing Assignment: April 5th  
Homework 9.1: April 12th  
Homework 9.2: April 19th  
Homework 9.4: April 26th  
Online Test 3: April 30th  
Final Exam: May 3<sup>rd</sup>