

**Math3803-N01: Algebra for P-8 Teachers**  
Syllabus for Fall 2018

**Instructor:** Dr. Kyunghye Moon

**Contact Information:**

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**Office hours:** 9:30-11:00 & 1:00-2:00 (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 could only use basic calculators (no cellphone calculators). No scientific, 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 on MyMathLab, do homework, and take three 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 (moon92464), 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:

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

- Solve equations and construct equations from word problems and solve them.
- Understand and explain what function is and derive function equations from sequences.
- Solve a system of linear equations and understand and explain how the solution of a linear system can be interpreted geometrically.
- Define (theoretical) probability and the law of large numbers and apply them in problem solving.
- State the properties of probability and apply them in problem solving.
- Explain the properties of probability using various representations (such as tree diagram and area model).
- 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 (Sep. 28<sup>th</sup>)
- 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 (Dec. 14<sup>th</sup>)

**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.

Students will take a midterm exam and a final exam at the Carrollton campus as pencil and paper tests. The midterm exam (Module 1) and the final exam (Module 2 & 3) will take place on Sep. 28<sup>th</sup> and Dec. 14<sup>th</sup>, respectively. The rooms and hours for the exams are to be announced at later times. The last date to drop the course is Oct. 8<sup>th</sup>.

There will also be a writing assignment, which is due Dec. 7<sup>th</sup>. The details about the 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 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 (10 points), a writing assignment (5 points), online tests (30 points), a midterm exam (20 points), and a final exam (35 points), totaling 100 points.

**Final Course Grade**

Homework	10%	A	90-100
Writing	5%	B	80-89
Online Tests	30%	C	70-79
Midterm	20% (Sep. 28 <sup>th</sup> )	D	60-69
Final	35% (Dec. 14 <sup>th</sup> )	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>.

### **Due Dates for Assignments and Tests:**

Homework 1	Aug. 24 <sup>th</sup>
Homework 2	Aug. 31 <sup>st</sup>
Homework 3	Sep. 7 <sup>th</sup>
Homework 4	Sep. 14 <sup>th</sup>
Homework 5	Sep. 21 <sup>st</sup>
Online Test 1	Sep. 25 <sup>th</sup>
Midterm Exam	Sep. 28 <sup>th</sup>
Homework 6	Oct. 8 <sup>th</sup>
Homework 7	Oct. 12 <sup>th</sup>
Homework 8	Oct. 19 <sup>th</sup>
Homework 9	Oct. 26 <sup>th</sup>
Homework 10	Nov. 2 <sup>nd</sup>
Online Test 2	Nov. 9 <sup>th</sup>
Writing Assignment	Nov. 12 <sup>th</sup>
Homework 11	Nov. 16 <sup>th</sup>
Homework 12	Nov. 30 <sup>th</sup>
Homework 13	Dec. 7 <sup>th</sup>
Online Test 3	Dec. 11 <sup>th</sup>
Final Exam	Dec. 14 <sup>th</sup>