University of West Georgia

MATH 3803: Algebra for P–8 Teachers I
Fall 2016
Course Syllabus

Instructor: Dr. Christopher Jett
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Class Location: 120 Callaway Building
Class Meeting: M/W/F 12:20–1:10 p.m.
Office Hours: M: 10:00–11:30, 3:00–4:30; W 1:30–4:30; F 10:00–12:00

Catalog Description:
This course has a special emphasis for teachers of grades P-8. It broadens understanding of the fundamental concepts of algebra with particular attention to specific methods and materials of instruction.

University Policy:
For important policy information, i.e., the UWG Honor Code, Email, and Credit Hour policies, as well as information on Academic Support and Online Courses, please review the information found in the Common Language for Course Syllabi documentation at http://www.westga.edu/UWGSyllabusPolicies/.

Textbook:
Miller, C. D., Heeren, V. E., & Hornsby, J. (2012). *Mathematical Ideas* (12th ed.). Boston, MA: Pearson.

Children's Literature Books:
Adler, D. (2009). *Working with fractions*. New York, NY: Holiday House.
Adler, D. (2012). *Mystery math: A first book of algebra.* New York, NY: Holiday House.
Murphy, S. (1997). *Divide and ride.* New York, NY: HarperCollins.
Neuschwander, C. (2013). *Sir cumference and the off-the-chart desserts*. Watertown, MA: Charlesbridge.
Princzes, E. (1993). *100 hungry ants.* Boston, MA: Houghton Mifflin Company.
Wing, N. (2005). *The night before the 100th day of school.* New York, NY: Grosset & Dunlap.

Student Learning Outcomes:
PreK–8 teacher candidates should be able to do the following:
• Strengthen their understanding of algebraic vocabulary, notation and symbols.
• Deepen their understanding of fundamental concepts of algebra including linear equations, inequalities, ratios, proportions, functions, polynomials, exponents, and radicals.
• Recognize and correct "common errors" in algebra.
• Use algebra to problem solve in multiple contexts.
• Communicate algebraic ideas and concepts effectively and successfully.
• Infuse literature to promote algebraic thinking.
• Establish personalized reform-based visions for teaching aligned with the Common Core State Standards for Mathematics and the National Council for Teachers of Mathematics.

Attendance Policy:
It is my expectation that you will attend every class session and be punctual. Class participation entails being an active participant to your respective learning community. In the event of an absence, students are expected to get the materials and information relevant to the missed class from their peers. There are only 5 unexcused and excused absences allowed in this course during this semester. If you exceed 5 absences, then you will fail the course. Please note that is your responsibility to sign the attendance sheet during each class period.

Evaluation Techniques:
Homework: 75 Points (3 @ 25 Points Each)
Test 1: 125 Points
Test 2: 125 Points
Test 3: 125 Points
Quizzes: 125 Points (5 @ 25 Points Each)
Children's Literature Book Brochure: 50 Points
Microteaching Presentation: 50 Points
Algebra Activities Project: 75 Points
Final Exam: 250 Points
Total – 1000 Points

Information about Course Assignments:
Homework
You will print off the weekly problem sets and submit completed problem sets in a homework folder on scheduled test dates. There will also be a written component responding to the reading with each homework folder submission. Your written response should be at least a full, double-spaced page to receive full credit. Points will be deducted for incomplete homework assignments, so please plan and manage your time accordingly.

Children's Literature Book Brochure
You will prepare a book brochure for one of the required literature books on the first page of this syllabus. Specific information concerning the book brochure will be posted in CourseDen.

Microteaching Presentation
Each group will submit a lesson plan and prepare an innovative 25 minute presentation concerning their selected children's book. Please be sure to link the mathematics concepts in the book to the standards and emphasize the connections to the course's theme of algebraic thinking in the elementary grades. Finally, please remember to express how the text could be used as a mathematics teaching tool for future elementary teachers.

Algebra Activities Project
Activities are individual or collaborative experiences that promote algebraic thinking. You will submit a collection of algebraic activities along with a cover letter. A rubric concerning this project will be posted in CourseDen.

Algebraic Concepts Final Examination
The final examination will consist of a **cumulative** assessment of the algebraic concepts covered throughout the entire semester.

Grading Scale:

A: 1000–900 Points	C: 799–700 Points	F: Below 600 Points
B: 899–800 Points	D: 699–600 Points	

Important Dates:

Exams are scheduled for Friday, September 2nd, Wednesday, October 12th, and Friday, November 18th. The children's literature book brochure is due on Friday, September 30th. The Algebra Activities project is due on Monday, November 28th. The final examination is scheduled for Monday, December 5th from 11:00 a.m.–1:00 p.m.

Please note that there will be no class on Monday, September 5th in observance of Labor Day and Friday, October 7th for Fall Break. There will be no class on Friday, September 16th, Friday, October 14th, and Friday, November 4th as the professor will be away at various conferences and professional meetings.

Other Course Readings:

Esquith, R. (2007). *Teach like your hair's on fire* (pp. 3–12; 62–72). New York, NY: Viking Adult.

Ladson-Billings, G. (2009). *The dreamkeepers: Successful teachers of African American children* (2nd ed.) (pp. 33–58). San Francisco, CA: Jossey-Bass.

Lemons-Smith, S. (2013). Tapping into the intellectual capital of Black children in mathematics: Examining the practices of pre-service elementary teachers. In J. Leonard & D. B. Martin (Eds.), *The brilliance of Black children in mathematics Beyond the numbers and toward new discourse* (pp. 323–339). Charlotte, NC: Information Age Publishing.

Class Policies and Procedures:

1. Please exhibit professionalism in all email communication.
2. There will be no make up for quizzes under any circumstances.
3. There will be no make up for the microteaching presentation. Failure to present on your scheduled date will result in a grade of zero. Also, coming to class late on your scheduled microteaching date will result in a 50% penalty.
4. Late work is accepted with a 50% penalty for one late assignment; other late submissions above the allotted one will result in a grade of zero. Also, please note that homework cannot be submitted late.
5. If you must miss a test and have excused documentation, then the final examination will be used for the missed test in the calculation of your final course grade.
6. If you must miss the final examination, then you will receive a zero for the final.
7. Calculators can be used during examinations; however, cell phones may not be used (even as calculators).
8. Please be sure that cellular phones are placed on vibrate or silent during class time.
9. Cheating is not tolerated. If you are caught cheating, then you will receive a zero for the test or assignment and will be reported for academic dishonesty.
10. Conferences can be beneficial and are encouraged.
11. Office hours will not be kept during final examination week. If a meeting is necessary during final examination week, then please schedule an appointment.
12. Grades cannot be sent via e-mail. You are expected to keep accurate records of your grades and ascertain where you stand in the course.
13. Please note that the weekly schedule is tentative. Changes might be made based on students' needs, inclement weather changes, etc.

Weekly Schedule

Week	Topic	Week	Topic
Week 1	Number Properties	Week 2	Number Relations
Week 3	Expressions & Equations	Week 4	Inequalities
Week 5	Graphs	Week 6	Slope Concepts
Week 7	Systems of Equations	Week 8	Exponents & Polynomials
Week 9	Ratios & Proportions	Week 10	Midterm
Week 11	Microteaching	Week 12	Microteaching cont./GCF/LCM
Week 13	Factoring & Quadratic Equations	Week 14	Square Roots & Radicals
Week 15	Algebraic Problem Solving	Week 16	Thanksgiving Break: No Classes
Week 17	Review for Final Exam	Week 18	Final Examination

Resources to Promote Algebraic Thinking

Adler, D. (2010). *Money madness.* New York, NY: Holiday House.

Adler, D. (2011). *Fractions, decimals, & percents.* New York, NY: Holiday House.

Calvert, P. (2006). *Multiplying menace: The revenge of Rumpelstiltskin*. Watertown, MA: Charlesbridge.

Clements, A. (2007). *Lunch money*. New York, NY: Atheneum Books.

DeGross, M. (2007). *Donovan's double trouble.* New York, NY: Amistad.

Dobbs, D. (1999). *The great divide.* Somerville, MA: Candlewick Press.

Dodds, D. A. (2009). *Full house: An invitation to fractions*. Somerville, MA: Candlewick.

Franco, B. (2006). *Math poetry: Linking math and literature in a fresh way.* Culver City, CA: Good Year Books.

Giganti, P. (1999). *Each orange had 8 slices.* New York, NY: Greenwillow Books.

Holub, J. (2008). *Zero the hero.* New York, NY: KO Kids Books.

Hutchins, P. (1989). *The doorbell rang.* New York, NY: Greenwillow.

Kroll, V. (2005). *Equal shmequal*. Watertown, MA: Charlesbridge.

Leedy, L. (1996). *Fraction action.* New York, NY: Holiday House.

Leedy, L. (2006). *The great graph contest*. New York, NY: Holiday House.

Lichtman, W. (2008). *Secrets, lies, and algebra.* New York, NY: Greenwillow Books.

Merrill, J. (2006). *The toothpaste millionaire.* Boston, MA: Houghton Mifflin Co.

Mills, C. (2004). *7 x 9 = Trouble!* New York, NY: Square Fish.

Mills, C. (2012). *Fractions = Trouble!* New York, NY: Square Fish.

Murphy, S. (1996). *Ready, set, hop!* New York, NY: HarperCollins.

Murphy, S. (2003). *Less than zero.* New York, NY: HarperCollins.

Otoshi, K. (2008). *One.* New York, NY: Greenwillow Books.

Overholt, J. (2010). *Math wise!* Hoboken, NJ: Jossey-Bass.

Rockwell, A. (2004). *100 school days.* New York, NY: HarperCollins.

Scieszka, J. (1995). *Math curse*. New York, NY: Viking Juvenile.

Selby, P. H., & Slavin, S. (1991). *Practical algebra: A self-teaching guide,* (2nd ed.). New York, NY: John Wiley & Sons, Inc.

Shaskan, T. S. (2008). *If you were a fraction*. North Mankato, MN: Picture Window Books.

Souders, T. (2010). *Whole-y cow!: Fractions are fun.* Ann Arbor, MI: Sleeping Bear Press.

Tang, G. (2005). *Math for all seasons.* New York, NY: Scholastic.

Tucker, B. (2005). *The journey of al and gebra to the land of algebra.* Highlands, TX: Aha!

Van de Walle, J., Karp, K., & Bay-Williams, J. M. (2012). *Elementary and middle school mathematics: Teaching developmentally,* (8th ed.). Boston, MA: Pearson.