Course Syllabus

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Mathematics 2015: Algebraic Reasoning

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Office: JWB 313

Materials: Scientific (non-graphing, non-internet connected) calculator. Graph paper. We will be using the book: Algebra: Themes, Tools, Concepts by Anita Wah and Henri Picciotto. The book is long out of print, but the authors have made it available legally online for free at [http://www.mathedpage.org/attc/attc.html](http://www.mathedpage.org/attc/attc.html). Don't worry about printing it out, we'll let you know as we use it.

This is a basic course in algebra that stresses the thought processes behind doing algebra. In particular, we will spend a lot of time thinking about how algebra extends regular elementary school arithmetic, and look at their similarities and differences.

The topics will include: 1. number systems, variables, expressions vs. equations. 2. Solving, graphing, building, and understanding rate of change in linear equations. 3. Understanding the solution of quadratic equations and graphing of quadratic functions using manipulatives and ideas about constant sums and products. 4. Reasoning about exponents and logarithms. 5. Reasoning about rational and radical functions.

The course will include biweekly quizzes (25% of grade) according to the schedule on Canvas, as well as regular homework (20% of grade). There are two midterms (15% of grade each), and a comprehensive final exam (25% of grade). Homework is graded on correctness as well as neatness and completeness.

Calculators may be used on quizzes and exams. Homework is due at the beginning of the class period for which they are assigned. Students are expected to be engaged in class, and not consuming other media.

To Succeed in this Class

1. Count on attending each class period. Valuable perspectives on the course material will be developed in class.
2. Keep up with material as it is assigned. Try to master topics as they come up. Ask questions in class to make sure your understanding of each topic is complete.
3. Be neat and organized, and work on your communication skills. This will be important for your future as a teacher, and, indeed, communication of mathematics is a specialized skill as important as learning the content itself.

Policies

No late homework, no exam retakes, no extra credit. Sorry. Keep your phone put away during class and participate actively.