

Syllabus Mtht 400: Methods of Teaching Secondary Mathematics I

John T. Baldwin

September 15, 2004

Fall 2004

Class meets in 600 SEO at 5-8 on Mondays. Two sections (12606 undergrad, 20481 grad) meet simultaneously.

Office hours M-W-F at 11 or by appointment. Monday before class will be a little chaotic but possible some weeks.

Feel free to e-mail me at jbaldwin@uic.edu or phone to make an appointment to discuss any difficulties that arise. Office: 327 SEO. Office phone: 312-413-2149

Sources: The collection, Algebraic Thinking, published by NCTM is assigned for the course. We will discuss about 5 articles from this book in class. Many others are excellent references.

Format: Most of the course will consist of teaching by the students. There will be two sets of presentations. In the first you will present a 40 minute class working from a lesson in an algebra book. In the second, there will be a wider choice of activities and there may be some group presentations. There will be a final exam and maybe a midterm. There may be occasional quizzes.

Grading and Assignments: There will reading assignments roughly every other week and mathematical homework most weeks. There will be final examination and maybe a midterm. The grade will be based in roughly equal proportions on your performance on a) the presentations (including lesson plan and review), b) homework, c) exam(s), and d) general contribution to the class.

Students with Disabilities: Students with disabilities who require accommodations for access and participation in this course must be registered with the Office of Disability Services (ODS). Please contact ODS at (312)413-2103 (voice) or (312)413-0123 (TTY).

MSCS POLICY ON INCOMPLETE GRADES: The last day to drop the course without penalty is September 5. INcomplete grades are for hardships that occur at the time of the final. IN grades must be approved by the Department. IN grades should be made up during the first two weeks of the next semester. Students may not sit through the course a second time. Students with problems which began after the drop date and continued to interfere with studies throughout the term should see their Dean for a late withdrawal.

First round of presentations. Each student will present a 40 minute lesson on a topic from high school Algebra. The lesson will be based on a high school text selected by the student. Texts are available in the Curriculum library on the 3rd? floor of the main library. We also have a few in Room 219. One week before the presentation, an approximately one page lesson plan will be due to me - by e-mail or in class. We may discuss your plan before the class. There will be three presentations per week. The lesson plan should include:

1. A description of exactly the book and page from which the lesson is taken.
2. Specify roughly who the lesson is intended for (e.g. 9th grade regular algebra in 2nd semester.)
3. A statement of the goals of the lesson in English and connected with a set of State or District Standards.
4. An outline of the material to be presented (indicating the classroom format)
5. A discussion of the homework in the book.

Teaching Reflection: One week after the presentation, turn in a 1-page reflection on your teaching.

Other class members are encouraged to ask ‘student questions’.

Suggested topics for the first round are on the next page of the syllabus. The second round will be assigned in detail later in the semester.

Topics for Presentations: The topics for these presentations should come (approximately) from the following list:

1. Negative numbers and beginning algebra; the number line
2. variables, word problems, and functions
3. solving a single linear equation with applications
4. Cartesian coordinates
5. graphing linear equations
6. standard forms for linear equations
7. solving quadratic equations
8. graphing quadratic equations
9. standard forms for quadratic equations
10. solving systems of linear equations
11. multiplication of polynomials and factoring
12. rules for exponents
13. distributive, associative and commutative laws– connections with arithmetic
14. linear inequalities
15. quadratic inequalities
16. exponents: integral and fractional
17. the notion of function
18. ratio and proportion
19. rational and irrational numbers
20. fractions and algebra
21. distance in the Cartesian plane
22. Student proposal: give title instead of number.