Math 335
2017W Term 2, January - April 2018

TR 12:30 a.m. – 2:00 p.m.,
Instructor: Melania Alvarez

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Office hours: (To be announced)

Goals: This course is a mathematics course focusing on elementary school mathematics. The main goal, of course, is to acquire a solid knowledge of that material. But an elementary school mathematics teacher needs to know much more, including: (i) how to present the material in the simplest, clearest way, (ii) the appropriate sequential order for developing mathematics skills, and (iii) what the students will find difficult and what errors they are likely to make, and (iv) how each topic helps advance the mathematical level of the students.

Topics include introductions to the following subjects:
1. Basic Arithmetic
2. Heuristics and algorithm
3. Problem Solving
4. Probability
5. Number Theory
6. Geometry
7. Measurement

Texts:
- *Elementary Mathematics for Teachers*, by Thomas H. Parker and Scott Baldridge.
- *Arithmetic for parents,* by Ron Aharoni

Optional:
- *Primary Mathematics textbooks (U.S. Edition)* — Primary Mathematics 3A, 4A, 5A, and 6A and Workbook 5A.

Expectations: Classes will be primarily lectures, with problem solving individually and in small groups. You are expected to take complete notes, to participate in class activities, and to ask questions about what you do not understand.

Grading Policy: There will be 2 term exams, a final exam, and homework/quizzes/special assignments, with percentages as shown below. Missed exams will count as 0 points. Only under rare circumstances (such as illness with a doctor's written excuse) will a make-up exam be given.

Normal Grading Scheme:

Assignments/quizzes	10%
2 Lesson plans (5 points each)	10%
Term Tests (2)	10% and 20%
Book Reports	10%
Final Exam	40%

First term test shall be about sixty minutes in length and second term test 90 minutes. **All tests and examinations are cumulative! Note that a student must obtain at least 50% in the final exam in order to pass the course, regardless of the grade computed by the normal calculation**.

Homework and Quizzes: Mathematics is learned by practice, and confidence is gained through mastery of the material. Homework will be assigned daily in class and is due at the beginning of the next class. There might be occasional quizzes. You should plan on spending at least 2 hours of homework for each class meeting. It is essential not to get behind; we will work at a brisk pace. You are encouraged to work in groups on difficult homework problems. This doesn't mean that you should copy from someone or allow someone to copy from you. Rather, you should explain the difficult problems and solutions to one another to help each other understand.

Do not let yourself get behind the class! As in most math courses, the material progressively builds upon itself. If you do not understand a particular topic ask in class or in office hours.

Homework is a way of finding out what you did and did not understand, you will not be graded only on correct answers but also on showing deep thinking even if you made mistakes. Please do not copy the correct answers from others, especially if you don't know how to do a problem, try your best, you will not necessarily be penalized for the incorrect answer.

Calculators, computers, phones: Calculators will not be used for this class, and will not be allowed for exams. A successful elementary school teacher should be confident and comfortable solving problems mentally and on paper. Also, studies have shown that the use of laptops and cellphones in class distract both users and non-users. Laptops and cellphones are banned during class time. (http://www.sciencedirect.com/science/article/pii/S0360131512002254)

HELP DURING OFFICE HOURS: If you are having trouble with the course work at any point, come see me for extra help. Either see me during office hours or email me. **This should not occur the day before either a test or the final exam. Do not hesitate; take action right away to clear up your difficulties.** I will also be available at other times by appointment.

Book Reports: 500+ word report for each of the first two sections and 300+ word report for each of the subsequent sections. Each report should describe what the section was about, any new ideas contained in the book that could be helpful for teaching and/or deeper mathematical understanding and any new insights about concepts you though you already knew. Also, anything you found interesting about the chapter. Be prepared to discuss in class what you wrote about in your report. **Due dates**: Introduction and part one (pages 1 to 46) Jan 16 (2pts). Principles of Teaching (pages 47 to 66) Jan 30 (2pts). Meaning (pages 68 to 94) Feb 13 (1pt). Calculation (pages 95 to 122) February 27 (1pt). Fractions (pages 123 to 157) March 13 (1pt). Decimals (pages 158 to 177) March 27 (1pt). Ratios (pages 178 to 189) and Afterword and Appendix (pages 190 to 196) April 5 (2pts).
Lesson Plans: First Lesson Plan due on February 15. Second Lesson Plan Due on March 22

Important Dates:
- Monday, Jan. 3 – First day of classes.
- Tuesday, Jan 9 – Assessment test.
- Monday, Jan. 17 - Last day to withdraw with no record of enrolment on your transcript.
- Feb. 19-23 – Mid-semester **study** break (no classes).
- Friday, Apr. 6 – Last day of class.
- Tuesday, Apr. 10 – Wednesday, Apr. 25 – Final exam period.