

Math 335

Tu & Th 12:30 – 2:00p.m.

Instructor: **Maria Luisa Melania Alvarez**

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Office hours: Tuesday 2:00 to 4:00

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 or late homework 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	10%
Mental math quizzes	5%
Term Tests (2)	10% and 15%
Book Reports	10%
Final Exam	50%

First term test will be sixty minutes in length and second term test 75 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 in class. There might be occasional quizzes. **You should plan on spending at least 7 hours a week besides class time for this course.** 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. One of the goals of this course is to develop that skill. . 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 reports and 300+ word report for each of the subsequent reports. 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 thought 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 23. Principles of Teaching (pages 47 to 68) Jan 30. Meaning (pages 68 to 98) Feb 6. Calculation (pages 99 to 126) Feb 13. Fractions (pages 127 to 150) Feb 27. Decimals (pages 161 to 180) March 5. Ratios (pages 181 to 192) March 12. Afterword and Appendix (pages 195 to 200) March 15.

Important Dates:

- January 7 – First day of classes.
- January 9 – Assessment test.
- January 17 - Last day to withdraw with no record of enrolment on your transcript.
- February 14 – Last day to withdraw without academic penalty (W on transcript)
- April 8 – Last day of class.

Keep in mind: You should plan on spending at least 7 hours a week besides class time on this course.