

MATH 5001: Arithmetic and Problem Solving for Elementary School Teachers
Fall 2009 Syllabus

Instructor: Miss Sarah Donaldson

office: 130 Aderhold Hall

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office hours: by appointment (just send me an email—I am available throughout the day)

Class meetings: MWF 12:20-1:10, Aderhold room 319

Text: *Mathematics for Elementary Teachers*, 2nd edition, and the accompanying Class Activities manual by Sybilla Beckmann.

You should bring the Activities Manual to every class.

Schedule:

* regular homework assignments: see *Assignment sheets*

* tentative quiz and test dates:

Wednesday, Sept. 2 QUIZ

Friday, Sept. 25 TEST

Monday, Oct. 12 QUIZ

Wednesday, Oct. 28 QUIZ

Friday, Nov. 13 TEST

* other important dates:

Monday, Sept. 7 Labor Day (no school)

Friday, Oct. 30 Fall Break (no school)

Nov. 23-27 Thanksgiving Break (no school)

Tuesday, Dec. 8 Friday schedule

Monday, Dec. 14 FINAL EXAM 12-3pm

Course topics:

Ch. 2: Numbers and the Decimal System (place value, number line, rounding, etc.)

Ch. 3: Fractions (definition, the importance of *the whole*, equivalent fractions, etc.)

Ch. 4: Addition and Subtraction (properties, addition/subtraction of fractions, etc.)

Ch. 5: Multiplication (its meaning, properties, and structure; standard and non-standard algorithms, etc.)

Ch. 6: Multiplication of Fractions (multiplying fractions, decimal numbers, and negative numbers, etc.)

Ch. 7: Division (its meaning, standard and non-standard algorithms, etc.)

Course objectives:

* To strengthen and deepen knowledge and understanding of arithmetic, how it is used to solve a wide variety of problems, and how it leads to algebra; in particular, to strengthen the understanding of and the ability to **explain** why various procedures from arithmetic work.

* To increase the ability to communicate clearly about mathematics, both verbally and in writing.

* To promote the exploration and explanation of mathematical phenomena.

* To show that problems can be solved in a variety of ways.

Homework:

Your homework must be typed (except for diagrams, equations, etc.).

I encourage you to work on homework assignments with your classmates. Of course, you must adhere to UGA's Academic Honesty Policy (<http://www.uga.edu/honesty/>). Therefore, always write your homework up on your own, using your own words to express the ideas you have discussed with others. Do not allow anyone to copy your work. When you discuss assignments with others, all partners should "give and take" ideas.

Late homework will not be accepted. Please consult with me as soon as possible if you are unable to hand in an assignment due to an illness or emergency.

Class work:

This class is part of your preparation as a professional. As a professional, you should engage in collegial discussions about professional practice and you should constantly seek to enhance and refine your professional knowledge. Class participation counts as 5% of your grade. To receive a full participation score, your work in class must consistently exhibit several or all of the following:

- * interest in mathematical ideas and in different ways of approaching those ideas
- * attentive listening to different ways of solving a problem
- * careful evaluation of solution methods
- * attempts to connect the course material to your future teaching
- * interest in learning with and from others

Grades:

tests	35%	Grading scale: 10: excellent 9: very good 8: good 6: basic 4: poor 0: no work submitted, or no serious effort shown	Final grades:	
quizzes	15%		A	93-100%
class participation	5%		A-	90-92
homework	20%		B+	87-89
<u>comprehensive</u> final exam	25%		B	83-86
			B-	80-82
			C+	77-79
			C	73-76
			C-	70-72
			D	60-69
			F	below 60

Grading criteria:

- * Your work should be factually correct, or with only minor errors.
- * Your work should address the specific question or problem that was posed. It should be focused, detailed, precise, and relevant.
- * Your work should be able to be used to teach a student: either a child or another college student, whichever is most appropriate.
- * Your work should be clear, convincing, logical, and coherent.
- * You should use clear, complete sentences. You should use mathematical terms and symbols correctly. If applicable, supporting pictures, diagrams, and/or equations should be used appropriately.
- * You should explain all your solutions unless there are explicit instructions not to.

Other policies:

- * You may not use laptops, cell phones, or other communication devices during class.
- * I expect you to come to every class. There is no formal attendance policy, but if you make a habit of missing class or arriving late, points will be deducted from your class participation grade. An inordinate number of absences may result in you failing to get credit for the course.