**Orientation to Math 302A / 302B**
**Fall 2011**

Math 302A and Math 302B are designed to help prepare future elementary school teachers to teach mathematics. The topics covered parallel, at a more sophisticated level, the mathematics curriculum in grades K - 8. Some of these topics are:

Math 302A: problem solving, numeration; whole number arithmetic, meanings of operations; fractions, decimals, percents; divisors and multiples.

Math 302B: Algebraic reasoning, indirect measurement, circles and angles, transformational geometry, perimeter, area, surface area, volume; organization of data, probability.

The two courses model many of the recent recommendations for reform in mathematics education presented by the National Council of Teachers of Mathematics and other professional organizations. Thus, these courses emphasize problem-solving, use of technology (calculators and computers) and manipulative materials, cooperative learning, oral and written communication of mathematical ideas and solutions, and the connections between mathematics and its uses in everyday life.

**Textbooks**

Math 302A: Mathematics for Elementary Teachers and Explorations, **4th Edition**, by T. Bassarear
Math 302B: Mathematics for Elementary Teachers and Explorations, **4th Edition**, by T. Bassarear

**Activity Based Learning**

Both 302A and 302B are activity based courses. This means that you will be given frequent opportunities to experience, on a concrete level, the ideas addressed in class and in the book. During an activity, you can feel a concrete manipulative material, move it, and actually use it to solve a problem or model a concept. You will learn how the senses of touch and sight can be used to understand mathematics and solve problems. It is very important that you do use the materials as directed by the instructor and get in the spirit of the activity. The main objective is not to arrive at a solution, but to reflect on the process that led you to that solution. These activities also will familiarize you with some of the materials (Cuisenaire rods, fraction bars, geoboards, tangrams, etc.) that are currently in use in elementary schools as aids to learning and teaching mathematics.

The class will be organized to provide a friendly, intimate, non-competitive atmosphere in which you can feel free to explore, discuss, and learn mathematics in a small group situation. We try to insist that you do work in groups, not separately. We want you to experience working together in a small group situation --so hopefully you will later feel comfortable using this technique in your own classes.

The role of the instructor will be quite different from what you might have encountered in other math courses. In 302A/B the instructor acts primarily as a facilitator for your own exploration and learning. Frequently, a given question will have more than one possible answer; a problem may have no right method of solution. One answer or method might be better than another. We prefer that you discover this for yourself rather than just have us tell you. We believe that your own learning will be more powerful and long-lasting if it comes from you.

**Homework**

Homework is very important in this course. The assignments are involved, and we encourage you to begin working on them as soon as they are assigned. Get together with some of your classmates and work on the problems. However, you should each turn in your own personal write-up. We are interested in process, in how you explain your work. We do not want just answers on a page. In general, for most problems, you will have to show and explain your work. Who is your audience when you are writing the homework? Well, in reality it will be the instructor (or a grader). But for the purposes of what we are looking for, think of it as if you were writing for one of your peers, that is, an adult learner of mathematics. Hence, when we say that we

want you to explain your work, we mean for that audience, not for elementary school children. In general, except for some computational problems, you will need to explain your work. Your explanations may include diagrams, charts, an English paragraph, or any other format that conveys what you did and how you did it.

**Help Sessions**
Besides your instructor's office hours, you are encouraged to make use of the Math 302 Help Sessions. Most of these will be held in the Math East Lobby. There will be several help sessions every week, to be announced at the beginning of the semester. These hours are excellent occasions to get together with classmates to work on your homework and "talk math". During these Help Sessions, a Math 302 instructor will be available for questions and guidance.

**Attendance**
Class participation is very important, so attendance is a must. Attendance is taken daily. Excessive absences (over 3 for a MWF section or over 2 for a TR section) can cause your grade to be lowered or cause you to be dropped from the class.

**Withdrawal from course**
A student may withdraw from the course without a grade (class will not appear on transcript) through **Sunday, September 18, 2011**. A student may withdraw from the course with a grade of "W" (if passing) through **Friday, October 14, 2011**.

**Grading**
What follows is the grading scheme for all sections of Math 302A/B. It includes the different factors that will play a role in your grade.

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| In-Class Exams | 40% |
| Final Exam | 25% |
| Homework | 20% |
| Quizzes / Projects / Explorations / Other (Class Notes, participation, etc.) | 15% |

*Scale for Final Grade*
A: 90 % - 100%
B: 80% - 89%
C: 70% - 79%
D: 60% - 69%
E: 59% and below

**Students with Disabilities**
If you anticipate the need for reasonable accommodations to meet the requirements of this course, you must register with the Disability Resource Center and request that the DRC send your instructor official notification of your accommodation needs as soon as possible. Please plan to meet with your instructor to discuss accommodations and how the course requirements and activities may affect your ability to fully participate.

**Coordinators**
Chris Mikel is the coordinator for Math 302A (Math East 146B; E-mail: mikel@math.arizona.edu). Jennifer Eli is the coordinator for Math 302B (Math 511; E-mail: jeli@math.arizona.edu). Concerns about the course (grades, dropping the course, etc.) should be directed to your instructor first and then to the coordinator, if necessary.