MA202:004 Mathematical problem solving — Spring 1999

CB349 — TR12:30–1:45

1. **Instructor:** Russell Brown
2. **Office:** POT 741
3. **Telephone and email:** 257-3951, rbrown@ms.uky.edu
4. **Office hours:** M2–3, W11–12, F11–12 and by appointment.
5. **Prerequisites:** The Basic Math Skills requirement of the University Studies Program and MA 201. If your grade in MA 201 was less than a C, then you will almost certainly do no better in MA 202.
6. **Textbook:** *Mathematical Reasoning for Elementary Teachers*, by Calvin Long and Duane DeTemple, Harper Collins.
7. **Format :** The emphasis is on problem solving, with problems taken from the material related to topics covered in the text.

   Problem sets will be distributed each week. In class we will have discussion of strategies, mathematical background, presentation of solutions and some time to begin working on problem sets.

   You will form groups of three or four, with at most two groups of four. (Problem: Is this always possible?)

   It is intended that homework be done in groups. This can be both in class and outside of class. A minimum time expectation for a C or better is 6 hours of outside work each week.

   You will be expected to keep a notebook or folder with solutions to every problem that is assigned. These will be collected regularly and audited. I do not expect to be able to read every solution, but I plan to grade a selection of your problems. You are encouraged to work problems in groups, but in the end you should write up a solution that you understand.

   Tests will consist of problems that are taken from the homework problems, with perhaps minor modifications.

   Student presentations of problems will be made on a regular basis.

8. **MathExcel:** As many of you know, an additional workshop known as MathExcel for MA202 is available. This will require a substantial time commitment, but it should help you to do much better in this course.

9. **Grading:** The test scores (including the final) will make up 50 percent of the grade, the homework 40 percent and the remaining 10 percent will be based half on on readiness to present solutions.

10. **Outline of sections, topics and tests:**

    January 14 - 26. Beginning discussion of problem solving techniques and problems assigned from Chapter 1, or related problems.

    January 28 - Feb 4. Problems related to material in Chapter 4, including modular arithmetic problems.

    First test: February 9 .

    February 11 - March 4. Problems related to Chapters 6,7 and 9. Problems dealing with fractions, decimals and probability.

    Second Test: March 9.

    March 11 - April 2 This includes spring break. Graph theory and network problems of the sort in Chapter 10. Similarity problems as from Chapter 11. Surface area and volume problems based on Chapter 12. Coordinate geometry as in Chapter 14.

    Third test: April 20.

    April 8 - April 23. More coordinate geometry.

    Final exam: 8:00–10:00am on Monday, 3 May 1999