MA 151 Mathematics for the Elementary School Teacher II

Winter Semester 2006 M-W-R-F 9:00-9:50 WS 3616

Prerequisites: Successful completion of MA 150 (grade of C or better)

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Office Hours: M & Th. 12:00–2:00; W & F 10:30–12:00
Other times by appointment

Course Overview: This is the second course in the mathematics sequence for prospective elementary school teachers. The focus this semester is on geometry, measurement, statistics, and probability. The goal of the course is to examine topics of elementary mathematics from an advanced standpoint with emphasis on conceptual understanding as well as mathematical proficiency.

Required Materials:

- **Text:** Rick Billstein, Shlomo Libeskind, and Johnny Lott. *A Problem-Solving Approach to Mathematics for Elementary School Teachers*. Eighth edition, 2004.
- **Calculator:** You should have a calculator with you at all times. Minimum features that your calculator should have are a square-root key and the ability to add, subtract, and store numbers in memory. More-sophisticated calculators are both acceptable and encouraged.
- **Mathematics "tool kit":** There are a number of tools of the mathematical trade that you will need to use frequently. Gather the items listed below into a kit that you bring to class with you every day. You will also need these things when you are studying, working on problems, and taking tests. Include the following items in your tool kit:

  ruler marked in both inches and centimeters
  protractor (for measuring angles)
  compass (for drawing circles)
  scissors (for cutting paper)
  colored pencils
  eraser

  (Optional)--You also may find it convenient to have a template of a right triangle.
- **Manipulatives:** There are a number of manipulatives that we will use for various hands-on activities, and some of these you will be expected to make for yourself. Directions will be given in class.
- **Paper:** For various activities, you will need graph paper (also called grid paper) and/or dot paper. Graph paper is readily available wherever you get school supplies. In class you will be given templates for dot paper that you can copy. You also may find it convenient to have a supply of scrap paper (clean on one side) to use for various paper-folding and paper-cutting activities.

Course Requirements and Expectations:

- Attend every class and participate actively in class discussions and activities. Roll will be taken daily, and absences will negatively impact your grade.
- Complete all assignments on time. Homework assignments will be recorded. Selected assignments or parts of assignments will be graded. Missed or late assignments will not be credited.
- Read and study all of the assigned material. You will be responsible for material covered in assigned readings, even if it is not directly addressed in class. If you do not understand something in the reading, it is your responsibility to ask questions and get clarification. Questions are always welcome in class as well as in the office or by e-mail.
- As you read the book, you will find examples and problems interspersed throughout the text. When you encounter these, you should cover the answer and take the time to think about and solve the problem yourself before moving ahead. Answers are given, and it may be tempting to simply read the question and the answer/explanation, but you will never know if you truly understand the concepts unless you first reflect on and answer the question yourself, before comparing your solution to the given one.

- Working with other students and discussing the ideas with them can be very beneficial. Even though you are required to write your own solutions in your own words when completing assignments, you are also encouraged to study and discuss ideas with others. Much can be learned from explaining ideas to a peer.
- When writing up homework problems, it is essential that you give complete explanations and explain your thinking (how you got the answer). A "naked answer" (like "12" or "rectangle") will not receive credit. Acceptable responses will be of the form "the answer is _____ **because** . . ."

Assessment: Assessment of your progress will take place through graded assignments, quizzes, tests, examinations, and class participation.

Quizzes may be given at any time and will usually be unannounced. Missed quizzes cannot be made up. The lowest quiz score will be eliminated from the final grade; all other quizzes will be counted. (Quizzes will likely total between 100 and 150 points.)

Mid-term exam will be given on **Friday, March 3**. This is the last class before the winter semester break. There will be **NO DEVIATIONS** to this schedule. The mid-term exam will be over all of the geometry and measurement units covered to date. (Mid-term exam: 100 points.)

Final exam will be given according to the published NMU exam schedule (Monday, May 1, 8:00–9:50). It will be a comprehensive exam covering the entire course. (Final exam: 200 points.)

Two other tests will be given, one before the mid-term exam and one between the mid-term and final. Dates and further details will be given in class approximately one week before the respective tests. (These tests: 100 points each.)

Homework assignments will be recorded. Selected assignments or parts of assignments will be graded. Missed or late assignments will not be credited. The lowest homework grade will be eliminated from the final grade; all others will be counted. (Homework will likely total approximately 200 points.)

Class attendance and active class participation will be weighed into the final grade. (A maximum of 100 points can be earned for perfect attendance and active class participation. Points will be deducted for classes missed, for late arrivals, and for lack of participation.)

Grading: Points will be assigned for quizzes, tests and examinations, homework, and class participation. Your grade will be determined by the percentage of the total possible points that you earn, as follows:

A=93-100%; A-=90-92%; B+=88-89%; B=83-87%; B-=80-82%; C+=78-79%; C=73-77%; C-=70-72%; D=60-69%; F=below 60%

If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Disability Services Office at 2001 C. B. Hedgcock (227-1700; TTY 227-1543). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state and University guidelines.