Mathematics For Elementary Teachers I (MATH 112)
Fall Quarter, 2003

Time/Place: MWF 11:00-11:50 a.m. SMH 302

Instructor: Jonathan Duncan (duncjo@wwc.edu)
Office: Kretchmar Hall 330, phone: 527-2097
Office Hours: 10:00 T, 11:00 R, 1:00 MWF, or by appointment

Text: Mathematics for Elementary Teachers via Problem Solving,
Student Resource Handbook and Student Activity Manual,

Webpage: http://math.wwc.edu/courses/112/

This course covers topics in mathematics, including number theory, geometry, numeration, number systems, graphs, algebra, statistics, measurements, and computer programming. We will cover selected sections from chapters 1-5 in your texts. The deadline for withdrawing from the course is Tuesday, 18 November and the final will be given on Monday, 15 December.

Topics

1. Sets, Logic and Problem Solving:
   Problem solving techniques, reasoning methods, basic set terminology and operations
2. Numeration:
   Early numeration systems, place value in base 10, bases other than 10
3. Operations on Natural Numbers and Integers:
   addition, subtraction, multiplication, and division operations and algorithms
4. Number Theory:
   primes, factoring, divisibility, gcd’s and lcm’s, and modular arithmetic
5. Data and Chance:
   probability, counting principals, experiments, statistics, and sampling

Objectives

Upon completion of this course, students will have

1. developed an adult-level understanding of elementary mathematics.
2. successfully engaged in mathematical thinking, reasoning, and problem solving.
3. developed the ability to present elementary mathematics using different approaches and techniques.

The following requirements encourage and measure the successful completion of these objectives.

Attendance (O2)

This course places great emphasis on in-class group work. It is therefore impossible to substitute outside class reading for attendance. Because of this, there will be no excused absences. You are allowed 2 absences without penalty. Each additional absence will lower your final grade by 1.5%.

Punctuality and participation are also important. Therefore, three tardys (defined as not being in the class room at the official start of class) or non-participation warnings (the definition of which is left to the instructor) make up one absence.
Peer Evaluations (O2)
A sizable portion of your class time will be spent in small groups. To encourage productive group work, a small portion of your grade will be tied to group evaluations. Group members will evaluate each other based on attitude, willingness to contribute, and other desirable characteristics.

Homework (O1,O2,O3)
**Mathematics is not a spectator sport.** Assignments will be given during the course of each week. All assigned problems and activities for the previous week are to be turned in at the beginning of class on Monday. To receive credit for a homework assignment, you must score at least 80%. If you score less than 80%, the assignment will be returned for you to redo. Your score on redone assignments will be the average of the scores received each time the assignment is submitted.

Please observe the following guidelines when preparing your homework. Papers which do not meet these criteria may not be accepted.

1. Use letter (8.5 \times 11) sized paper with clean edges (not torn out of a notebook).
2. Typed homework is preferable, but legible handwritten work will be accepted.
3. Multi-page assignments must be stapled or paper-clipped together.
4. Fold the assignment lengthwise like a book and write your name, the course number, and assignment number(s) on the front cover.
5. Assignments must be well organized, coherent, and use proper syntax and grammar.

Exams (O1,O2)
There will be three exams during the course of the quarter, including the two-hour comprehensive final. Each exam will consist of two parts: a group exam which will be given as a take-home and is worth 15% of the total score, and an individual portion taken in class and worth the remaining 85% of the total score.

The first two exam dates are subject to in-class change, and will be announced at least one week in advance. You may request alternative exam dates in advance and only for appropriate and verifiable reasons. The final exam may only be taken out of schedule after consultation with the Associate Academic Dean.

Exam I Chapters 1 and 2 20 October
Exam II Chapters 3 and 4 21 November
Final Chapters 1-5, emphasis on 5 Mon, 15 Dec 2:00 p.m.

Grades
Your final letter grade will be based on your quarter average as shown below. Your quarter average is made up of five scores: your homework average, peer evaluations, and three exam scores. Weights for each of these are given below. Appropriate (to your instructor) modifications of the final letter grades may be made in individual cases for progress, unusual circumstances, etc.

<table>
<thead>
<tr>
<th>Score Weights</th>
<th>Letter Grades (lowest percent)</th>
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<tbody>
<tr>
<td>Final 29%</td>
<td>A+ 98% B+ 87% C+ 76% D+ 65%</td>
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<tr>
<td>Exams I,II 2\times 23%</td>
<td>A 91% B 80% C 69% D 58% F 0%</td>
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<tr>
<td>Homework 20%</td>
<td>A- 89% B- 78% C- 67% D- 56%</td>
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<td>Evaluations 5%</td>
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Disabilities
Students with a physical and/or learning disability who require accommodations should contact the instructor or Disability Support Services at 527-2366. This syllabus is available in alternative formats upon request.