Math 297 - Intermediate Topics in Elementary Mathematics  Fall 2001
Instructor:  Leslie Hogben
Office: 488 Carver  Office Phone: 294-8168 (voice mail)
Office Hours:  will be announced by Sept. 4
Many other times are available by appointment.
e-mail: lhogben@iastate.edu (you are required to have an e-mail address)
Class website:
http://www.math.iastate.edu/lhogben/classes/math297.html
Texts: required:
• Mathematics for Elementary School Teachers by Tom Bassarear, either 1st or 2nd edition. If 1st edition is used, 2nd Edition packet is also required.
• Mathematics for Elementary School Teachers: Explorations for Iowa State University (gray)
• Math 297 Packet
Course Supplies: Students are required to bring to every class the Math 297 packet(s) and Explorations manual, washable transparency marker (Vis-a-vis), rubber bands, graph paper, ruler, protractor, scissors, and calculator. During periods of use students must also bring their model spheres, circular protractors, micromiras and computer disks. We will be using TI graphing calculators for part of the course and some TI-73 calculators will be available for loan. A model sphere and micromira will also be loaned to each student, and one transparency circular protractor will be given to each student.
Course Goals: Develop the mathematics appropriate for elementary and middle school teachers using discussion, labs, lecture, small groups, discovery learning, technology and elementary classroom aids. This is a mathematics course, and students are expected to learn terminology, definitions, and concepts. Topics covered will be approached from both a practical and theoretical standpoint, with an emphasis on understanding using concrete examples.
The two primary foci of the course are for students to: 1) improve mathematical reasoning by exploring new ways of thinking mathematically and developing mathematical judgment, and 2) learn to use technology effectively to learn and teach mathematics.
Policies
Class activities and homework: Students are expected to attend class regularly, participate in and complete all activities, and share in the discussion. It is frequently impossible to make up missed activities (these activities are part of the laboratory portion of the course). You will be responsible for everything covered in class, whether or not it is in a text. Some activities done in class will be collected in class and graded. Homework will be assigned regularly and collected frequently. Bring all homework subsequent to the last collected assignment to class every day. Homework assignments will not be accepted late. Grading of class activities
and homework will emphasize effort rather than mastery. In-class activities, quizzes, and homework assignments will total approximately 100 points.

**Projects:** There are two technology-based projects. These will be announced in advance. Any assignment accepted late will be marked 10% off for each day late. Projects will total 100 points.

**Tests:** Three in-class tests and a comprehensive final will be administered during the term. Tests will be announced at least one week in advance e-mail, on the website and in class. No make-up tests will be given. Students missing a test with an approved excuse will have the results from their comprehensive final weighted more heavily in determination of their final grade, with an emphasis on the material pertaining to the missed test. Approved excuses include illness sufficient to warrant a visit to a doctor or inclement weather (other than heat) sufficient to close the public schools in Ames or where you live (if you commute). Consult your instructor at least one class meeting in advance if you have a University sanctioned excuse. Each of the three in-class tests will be worth 100 points, and the comprehensive final will total 150 points.

**Grading** There will be a total of approximately 650 points for the course.

Course grades will be assigned so that your grade will not be worse than that obtained according to the following scale:

- A+, A, A- 90 - 100
- B+, B, B- 80 - 89
- C+, C, C- 70 - 79
- D+, D, D- 60 - 69
- F  < 60

**Tentative Syllabus**

<table>
<thead>
<tr>
<th>time</th>
<th>content</th>
<th>assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4 wks</td>
<td>functions and graphs, number systems, patterns, algebraic reasoning, inductive and deductive reasoning</td>
</tr>
<tr>
<td>2</td>
<td>5 wks</td>
<td>spherical and plane geometry, including lines, angles, triangles</td>
</tr>
<tr>
<td>3</td>
<td>4 wks</td>
<td>probability simulations</td>
</tr>
<tr>
<td>4</td>
<td>2 wks</td>
<td>transformation geometry, including similarity</td>
</tr>
</tbody>
</table>

If you need any help in the course, please do not hesitate to ask! I am available at times other than the set office hours. You may also communicate electronically.