Math 251: Probability and Statistics for the Elementary School Teacher
Fall Semester, 2014
M,W,Th,F 10:00 – 11:00 in WS 3806

<table>
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<tr>
<th>Course Instructor:</th>
<th>Dr. David Buhl</th>
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<tbody>
<tr>
<td>Office:</td>
<td>2220 Jamrich</td>
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<td>Office Phone:</td>
<td>906 227-2089</td>
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<td>E-mail:</td>
<td><a href="mailto:dbuhl@nmu.edu">dbuhl@nmu.edu</a></td>
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<tr>
<td>Office Hours:</td>
<td>M,W,F 9:00 - 10:00</td>
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<td>M,W 12:00 - 1:00</td>
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I am in my office many hours besides the ones that are listed. If you are interested in chatting, just drop me an email to set up an appointment and I will be happy to meet with you. (I also teach at 11:00 - 12:00 M,W,Th,F and 4:00 - 5:30 T,Th and tend to have meetings on Tuesday.

**Brief Description of the Course:**
The course concentrates on the role of statistics and probability in society and how this impacts elementary school curriculum.

**Prerequisite:** An earned grade of “C” or better in MA 151

**Text/Materials:**
2. [http://onlinestatbook.com/2/index.html](http://onlinestatbook.com/2/index.html). We will be using this online text as a reference. We will not be covering every chapter (so please don’t print the whole book). Many additional activities and problems/solutions will be provided in class.

**Course Objectives:**
The course is designed to provide a background in quantitative literacy for elementary mathematics majors and minors. The relationship between probability and statistics in organizing, quantifying, analyzing, and predicting in relation to natural phenomena will be developed.

**Student Learning Outcomes:**
After successful completion of this course, the student will be able to:

1. Interpret frequency distributions and histograms.
2. Evaluate measures of central tendency.
3. Evaluate measures of dispersion.
4. Compute the probability of simple and compound events.
5. Compute the value of a probability using the addition and multiplication rules of probability.
6. Compute probabilities using complementary events.
7. Compute the values of permutations and combinations and interpret the meaning of each.
8. Compute probabilities for applications involving normal distributions.
9. Compute standardized scores and percentiles.
10. Estimate the value of a parameter using confidence intervals.

11. Perform tests of hypothesis involving means and proportions.
12. Interpret the meaning of a least squares.

**Assessment:**
Some form of assessment will take place most every week. Forms of assessment include:
collected homework, announced/pop quizzes, a project, and tests.

It is anticipated there will be three (3) in-class tests and cumulative final. The finale is a two
hour cumulative exam and will be on Wednesday, December 11 from 10:00 – 11:50 AM.

You will also be graded on classroom participation. A participant not only attends class every
day (and arrives on time), but is prepared and actively contributes to learning activities. It is
your responsibility to notify me in advance if you are unable to attend.

*No make-ups or late work on Homework or Quizzes will be allowed. A make-up for a
missed test will be given only under exceptional circumstances and with my prior approval.*

**Evaluation:** (Tentative)

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<tr>
<th>Item</th>
<th>Points</th>
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<tbody>
<tr>
<td>Homework</td>
<td>100 pts</td>
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<tr>
<td>3 Tests (100 pts ea)</td>
<td>300 pts</td>
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<tr>
<td>Cumulative Final</td>
<td>100 pts</td>
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<tr>
<td>Participation/project</td>
<td>50 pts</td>
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It is anticipated will be using the familiar 60-70-80-90 percent grading scale.

**ADA Statement**
If you have a need for disability-related accommodations or services, please inform the
Coordinator of Disability Services in the Dean of Students Office at 2001 C. B. Hedgcock
Building (227-1700). 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.