**MATH 182: Fundamentals of Mathematics II: Algebra, Probability, and Data Analysis**  
Spring Semester 2010  
MWF 11:15 - 12:05  
Location: Ross Hall 2270

**Instructor:** Lee Roberson  
**Email:** lee.roberson@unco.edu  
**Office:** Ross Hall 2246  
**Office Hours:** MWF 10:00 - 11:00


**Prerequisites:** Completion of Math 181 with a C or better

**Catalog Description:** This is the second of the three course sequence pertinent to prospective elementary teachers. The class involves algebra, probability, and data analysis. The primary emphasis is asking and answering questions intelligently about our world using algebra, probability, and data analysis. Explorations focus on representing, analyzing, generalizing, formalizing, and communicating patterns and the chances of future events. Mathematics content will be presented in a problem solving and exploratory context using appropriate instructional tools.

**Grading:** Overall grades will be determined by weighting your averages according to the following percentages:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Homework and Class Activities</td>
<td>10%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Project</td>
<td>10%</td>
</tr>
<tr>
<td>Exam 1</td>
<td>15%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>15%</td>
</tr>
<tr>
<td>Exam 3</td>
<td>15%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
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Letter grades will be determined by the following scale:

- 90 – 100% A
- 80 – 89% B
- 70 – 79% C
- 60 – 69% D
- Below 60% F

- After averaging all grades for the semester, I will round up all grades 0.5 and higher and round down all grades below 0.5. (i.e. 89.5% rounds to a 90%, and 89.49% rounds down to an 89%)
Responsibility for Learning: I do not “give” grades. You earn your grade. A grade is intended to reflect your level of performance in a class under a specific set of circumstances. A course grade does not, nor is it intended to measure your overall worth as a human being, general level of intelligence, or your capacity to be a responsible and successful individual. I am here to provide guidance and direction, counsel, and coach you. However, ultimately the responsibility for learning in the class resides on you. It is your responsibility to actively pursue the educational environment that meets your individual needs.

Project
Information to come at a later time.

Homework and In-class Activities
There will be homework assigned each class. *You are responsible for the material in all of the problems assigned.* Homework is due at the beginning of class and will not be accepted late. Occasionally, in-class activities will need to be finished outside of class.

Quizzes
Quizzes are the opportunity to assess your developing understanding. Quizzes will happen every other week.

Exams
There will be four exams during the semester, including the final exam. The three in-class exams will each comprise 15% of your final grade in the course. The final exam is worth 25% of your final grade. Below are tentative dates for each in-class exam, these dates will be set as we progress through the semester with at least one weeks’ notice.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
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<tbody>
<tr>
<td>First Exam</td>
<td>Wednesday February 10th</td>
</tr>
<tr>
<td>Second Exam</td>
<td>Wednesday March 10th</td>
</tr>
<tr>
<td>Third Exam</td>
<td>Wednesday April 14th</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Monday May 3rd at 8:00 - 10:30am</td>
</tr>
</tbody>
</table>

Final Exam
The final exam is comprehensive for this course.

Important Dates:

<table>
<thead>
<tr>
<th>Date Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Course Add deadline</td>
<td>January 15</td>
</tr>
<tr>
<td>Martin Luther King Day (University Closed)</td>
<td>January 18</td>
</tr>
<tr>
<td>Course Drop deadline</td>
<td>January 25</td>
</tr>
<tr>
<td>Withdrawal deadline for individual 15-week courses</td>
<td>March 5</td>
</tr>
<tr>
<td>Spring Break (No Classes)</td>
<td>March 13 - 21</td>
</tr>
<tr>
<td>Complete schedule withdrawal deadline</td>
<td>April 9</td>
</tr>
</tbody>
</table>
Course Obligations: As part of the General Education Program, successful completion of MATH 181 and 182 satisfies the Category 2 Mathematics Skills Area requirement. The ultimate goal of this course sequence is to increase content knowledge, broaden teaching practices and foster confidence in teachers of elementary mathematics. MATH 182 course content involves:

- Use of mathematics to structure understanding of and investigate questions in the world around us.
- Treatment of mathematical content at an appropriate level.
- Use of numerical, graphical and algebraic representations.
- Interpretation of data, analysis of graphical information and communication of process and solutions in written and oral form.
- Use of mathematics to formulate and solve problems.
- Use of technology such as calculators and computers to support the use of mathematics.

Honor Code: All members of the University of Northern Colorado community are entrusted with the responsibility to uphold and promote five fundamental values: Honesty, Trust, Respect, Fairness, and Responsibility. These core elements foster an atmosphere, inside and outside of the classroom, which serves as a foundation and guides the UNC community’s academic, professional, and personal growth. Endorsement of these core elements by students, faculty, staff, administration, and trustees strengthens the integrity and value of our academic climate.

Cell Phones: Please extend courtesy to your instructor and fellow students by turning off your cell phones and pagers. Thank you for your cooperation.

Tutoring Services: There are two resources you can seek out for tutoring:

- The Math Lab, located in Ross Hall Room 1250, provides drop-in tutoring services for MATH 182. Available times will be posted on the door.
- Tutoring is also available at the Center for Human Enrichment in the basement of Michener. Appointments are necessary for each one hour appointment. To schedule an appointment, you need to go to the center. Sessions with a tutor are provided for one hour. An appointment has to be made for each tutoring session.

Accommodations for students with disabilities: Students with disabilities who believe that they may need accommodations in this class are encouraged to contact Disability Support Services at 970-351-2289 as soon as possible to ensure that reasonable accommodations are implemented in a timely fashion.

Academic Dishonesty: Consult your student handbook for university policies on student conduct in the classroom, cheating, plagiarism, and other academic expectations (http://www.unco.edu/dos/handbook/stuhndbk.htm#998283). You are expected to attend class and take responsibility for your own learning. UNC’s policies and recommendations for academic misconduct will be followed.

Changes: The instructor reserves the right to amend, adjust, or otherwise modify the outline and syllabus at any time during the course.
Course Objectives: Upon successful completion of this course, students will be able to:

- Solve mathematical problems involving algebra, probability, and data analysis using a variety of strategies.
- Reason about algebra, probability, and data analysis, including making and investigating mathematical conjectures and developing and evaluating mathematical arguments.
- Communicate clearly and precisely mathematical ideas in algebra, probability, and data analysis.
- See connections between mathematical ideas, especially among probability, data analysis, statistics, and algebra.
- Use representations to model and explore real-world phenomena, especially narrative, tabular, graphical, and algebraic representations and the translation between these forms.
- Evaluate and consider the reasonableness of mathematical solutions in the area of algebra, probability, and data analysis.
- Select appropriate tools for computation, whether mental computation, estimation, paper and pencil techniques, or technology based approaches.