Syllabus
University of New Mexico Valencia Campus
Math 215: Mathematics for Elementary and Middle School Teachers III
Spring 2013

Instructor: Julie DePree, Ph.D. **Office: Academic Center 142C**
Phone Number: 925-8607 **E-Mail: jdepree@unm.edu**
Office Hours: T&TH 11:30-1:30 **Website: www.unm.edu/~jdepree**
W 10:30-12:00 & 1:15-3:00 or by appointment

Course Description: Algebra from the viewpoint of the elementary curriculum with emphasis on proportional and linear relationships. Also included: topics from probability and statistics with connections to other topics in the elementary curriculum. Problem solving is emphasized throughout.

Prerequisite: C or better in Math 111and Math 112

Textbook/Materials: Beckman, Sybilla, *Mathematics for Elementary Teachers*, 3rd edition, scientific calculator, graph paper, and ruler

Student Learning Outcomes:
Course Goal #1: Communication
Addresses UNM core area 2/ HED area II: Mathematics (Other College-Level Mathematics)
SLO 1: Students will be able to communicate mathematical ideas and concepts in oral form
SLO 2: Students will be able to communicate mathematical ideas and concepts in written form
SLO 3: Students will use mathematically correct terminology and notation
SLO 4: Students will be able to collect, organize, interpret, and present information relevant to the mathematics teaching field
Course Goal #2: Understand Ratios and Proportion
Addresses UNM core area 2/ HED area II: Mathematics (Other College-Level Mathematics)
SLO 1: Students will be able to identify relationships that are proportional
SLO 2: Students will be able to represent ratios in multiple ways such as pictures or diagrams, equations, and graphs
SLO 3: Students will be able to understand percent as a specific kind of ratio
SLO 4: Students will use ratio and proportionality to solve a variety of applied problems, e.g. percent, discount, and interest problems
Course Goal #3: Understand Algebraic Concepts of the K-8 Curriculum
Addresses UNM core area 2/ HED area II: Mathematics (Other College-Level Mathematics)
SLO 1: Students will be able to represent problem situations with algebraic expressions and equations
SLO 2: Students will understand and interpret slope as a rate-of-change
SLO 3: Students will be able to translate among verbal, tabular, graphical, and algebraic representations of linear functions and describe how slope and intercepts appear in different representations
SLO 4: Students will be able to use systems of equations to solve applied problems
Course Goal #4: Represent and Interpret Data
Addresses UNM core area 2/ HED area II: Mathematics (Other College-Level Mathematics)
SLO 1: Students will be able to represent data in different ways such as tables and bar graphs or histograms, line graphs, circle graphs, and box-and-whisker plots
SLO 2: Students will use descriptive statistics including mean, median and range to summarize and compare data sets
SLO 3: Students will be able to use proportions to make estimates related to a population on the basis of a sample
Course Goal #5: Understand the Basic Concepts of probability
SLO 1: Students will be able to distinguish between theoretical and experimental probability
SLO 2: Students will use theoretical probability and proportions to make approximate predictions

SLO 3: students will be able to make and identify connections between the concept of ratio and the concepts of probability

Attendance Policy: Students are expected to attend class regularly. Being absent 15% of the total class hours is considered excessive. A record of attendance will be kept by the instructor. One or more group projects will be done each class. The benefit of working with a group and learning from group members with hands-on materials is hard to simulate outside of class. Therefore, **no late work will be accepted**; however, at least one project grade will be dropped before computing your final grade.

Grading Policy: Grades will be based on the following:

Exams	50%	91 - 100	A
Group Projects and HW	15%	81 - 90	B
Portfolio*	10%	71 - 80	C
Final Exam	25%	61 - 70	D
		0 - 60	F

- If you have no absences, you may be excused from doing the portfolio.

Requirements:

1. **Attend class and participate**. The goal of this class is to understand the mathematical concepts. Many different pedagogical approaches will be used to help you understand the mathematical content. Calculators, computers and manipulatives will be used extensively. You will participate in numerous group projects and exploratory lessons.

2. Homework assignments will be given from the textbook to reinforce the concepts learned in class. The assigned exercises are considered the minimum requirement for each section. Textbook assignments are meant to be self-checking. Students are expected to attempt all problems. Students will have the opportunity to meet with classmates each class to discuss homework and selected problems will be done in class. Students should also seek assistance if necessary from the instructor, other students, or a tutor in the Enrichment Center. All homework assignments should be completed at the time of the exam. Homework will be collected the day of the exam.

3. **All exams must be taken on the date scheduled.** Arrangements must be made with the instructor if an emergency situation arises which prohibits you from taking a scheduled exam.

4. Keep an organized notebook that includes all notes, journal entries, assignments and projects.

5. Stay current on all assignments. The schedule is tentative and additions or deletions may be made in class. (Note: You may find it helpful to exchange phone numbers with a classmate in case you miss a class.)

***** Students with special needs please see me as soon as possible to ensure that needs are met in a timely manner.

Tentative Course Outline

Week	**Chapter**
1 1/14 – 1/16	Chapter 9 Algebra
2 1/21 – 1/23	Chapter 9 Algebra Group Project: Algebra Tile Explorations **1/21 Martin Luther King, Jr. Day Holiday** **1/25 Last day to add courses or change sections**
3 1/28 – 1/30	Chapter 9 Functions and Algebra Group Project: Solving Equations **2/1 Last Day to Drop with a Refund**

4 2/4 – 2/6	Chapter 9 Algebra Group Project: Exploring Sequences and Series **2/1 Last day to change grading options**
5 2/11 – 2/13	Chapter 9 Algebra Group Project: Graphs: Walk the Walk Group Project: Chalk Board Globs Game
6 2/18 – 2/20	Chapter 7 Proportional Reasoning Explorations
7 2/25 – 2/27	Review for Test **EXAM 1**
8 3/4 – 3/6	Chapter 15 Statistics Group Project: Monday Blues Random Sampling Activity **Homework: Watch cartoons** **3/10-3/17 SPRING BREAK**
9 3/18 – 3/20	Chapter 15 Statistics Group Project: Interpreting Graphs and Data Abuse Group Project: Cartoon Graphs
10 3/25 – 3/27	Chapter 15 Statistics Project: How Long is Your Name? Group Project:Using calculators to explore averages and standard deviation
11 4/1 – 4/3	**EXAM 2** Chapter 16 Probability Group Project: Happy Birthday Exploration Group Project: Exploring Probability with M&M's
12 4/8 – 4/10	Chapter 16 Probability Group Project: Two Dice Sum Game Group Project: Rock, Paper, Scissors **4/ 12 Last day to withdraw without approval**
13 4/15 - 4/17	Chapter 16 Probability
14 4/22 – 4/25	**EXAM 3**
15 4/29 – 5/1	Presentations and Review for Final
16 5/6 – 5/9	**FINAL EXAM Monday, May 6, 2:30-4:30**