BUTTE COLLEGE
COURSE OUTLINE

I. **CATALOG DESCRIPTION**

MATH 217 - Pre-Algebra **4 Unit(s)**

Prerequisite(s): MATH 216 or Math Level II
Recommended Prep: Reading Level III

Transfer Status: NT
68 hours Lecture

This course introduces elements of algebra and reinforces skills needed for operations with real numbers. The topics include operations on integers, fractions, mixed numbers and decimals, ratio, proportion and percents, algebraic expressions and equations, measurement and geometry, exponents, graphing linear equations in two variables, and a variety of applications.

II. **OBJECTIVES**

Upon successful completion of this course, the student will be able to:

A. Perform the four basic arithmetic operations of addition, subtraction, multiplication, and division with fractions, decimals, and integers.
B. Solve applications involving ratios, proportions, and percents and acquire proficiency in their use.
C. Solve a variety of applications involving perimeter, area, and volume.
D. Evaluate, simplify, add, subtract, multiply and divide basic algebraic expressions.
E. Calculate with whole number exponents and basic square roots.
F. Translate English sentences into mathematical expressions and equations.
G. Solve linear equations and related applications.
H. Convert within and between the US and Metric systems of measurement.
I. Graph points and lines in the rectangular coordinate system.

III. **COURSE CONTENT**

A. **Unit Titles/Suggested Time Schedule**

	Lecture
Topics	Hours
1. Whole Numbers, Rounding, and Order of Operations	4.00
2. Integers	7.00
3. Introduction to Algebraic Expressions, Evaluating and Translating	4.00
4. Fractions	8.00
5. Simplifying Algebraic Expressions	8.00
6. Decimals	5.00
7. Ratio, Proportion, and Percents	5.00
8. Solving Equations and Problem Solving	8.00
9. Geometry and Measurement	6.00
10. Adding, Subtracting, Multiplying and Dividing Algebraic Expressions	7.00
11. Linear Equations in Two Variables and Graphing	6.00
Total Hours	68.00

IV. **METHODS OF INSTRUCTION**

A. Lecture
B. Collaborative Group Work
C. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
D. Discussion
E. Board Work

V. **METHODS OF EVALUATION**

A. Exams/Tests
B. Quizzes
C. Class Assignments and Class Response
D. Daily Homework Assignments, where the student will demonstrate problem-solving skills

VI. **EXAMPLES OF ASSIGNMENTS**

A. Reading Assignments
   1. Read the section in the textbook on Integers and be able to define integers, place integers on a number line, and find the opposite and absolute value of an integer.
   2. Read the section in the textbook on Solving Equations and be able to recognize when to use the distributive property, addition property of equality, and multiplicative property of equality.

B. Writing Assignments
   1. Describe in words the process you would go through to solve the equation $5(2x+1)-7=28$. Assume you are teaching it to someone for the first time and write a detailed explanation.
   2. Describe in words how to locate an accurate representation of the number -3 3/4 on a number line. Assume you are teaching it to someone for the first time and write a detailed explanation.

C. Out-of-Class Assignments
   1. Review the section on solving equations and solve the problems in the Section Exercises assigned by the instructor showing each step.
   2. Review the section on Integers and solve the problems in the Section Exercises assigned by the instructor.

VII. **RECOMMENDED MATERIALS OF INSTRUCTION**

Textbooks:

A. Martin-Gay, E. Prealgebra & Introductory Algebra. 3rd Edition. Pearson/Prentice Hall, 2011.

Materials Other Than Textbooks:

A. MyMathLab, a computer web-based learning system

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Date: 02/22/2016