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**Course Outline for MATH 100**  
**PRE-ALGEBRA & ALGEBRA REVIEW**  
**Effective: Fall 2010**

**I. CATALOG DESCRIPTION:**

MATH 100 — PRE-ALGEBRA & ALGEBRA REVIEW — 1.00 units

Review basic mathematics and algebra content prior to taking the assessment exam for placement into a mathematics course or as a refresher prior to taking a mathematics course after a significant amount of time has passed since taking the prerequisite course or assessment. The course will consist of small group lecture and/or independent study using a computer program to review and refine those concepts as needed by each student.

1.00 Units Lab

**Grading Methods:**

Pass/No Pass

**Discipline:**

	<b>MIN</b>
<b>Lab Hours:</b>	54.00
<b>Total Hours:</b>	54.00

**II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 2**

**III. PREREQUISITE AND/OR ADVISORY SKILLS:**

**IV. MEASURABLE OBJECTIVES:**

**Upon completion of this course, the student should be able to:**

- A. Perform accurate computations with real numbers without a calculator;
- B. Solve linear equations with multiple steps;
- C. Apply algebraic methods to solve word problems;
- D. Simplify and evaluate algebraic expressions;
- E. Apply the properties of real number exponents in simplifying expressions;
- F. Graph equations;
- G. Perform mathematical operations on polynomials.

**V. CONTENT:**

Based on an initial computer assessment of the student's mathematical knowledge some subset of the following content will be covered. Each student is expected to begin with a pre-algebra assessment and progress as able through pre-algebra, elementary algebra and intermediate algebra concepts.

- A. Percent-computations and applications
- B. The English and metric systems
- C. Geometric figures and formulas-computations and applications
- D. Interpret graphs
- E. Use order of operations, rules of exponents and properties of real numbers to simplify numeric expressions
- F. Algebraic Expressions-simplify
- G. Linear Equations in One Variable-solve and use in applications
- H. Linear Inequalities in One Variable-solve and graph
  - I. Linear Equations in Two Variables-graph, interpret and use in modeling
- J. Systems of Linear Equations in Two Variables-solve and use in applications
- K. Linear Inequalities in Two Variables and Systems of Linear Inequalities
- L. Add, subtract, multiply and divide polynomials
- M. Factoring Polynomials
- N. Solving Quadratic and Higher Degree Polynomials by Factoring
- O. Applications of Quadratic Equations
- P. Add, subtract, multiply and divide rational Expressions-use in application problems
- Q. Functions-domain range-composition-operations with and inverses
  - 1. Types of Functions
    - a. Linear functions
    - b. Absolute value functions
    - c. Polynomial functions
    - d. Rational functions
    - e. Radical functions
    - f. Exponential functions

- g. Logarithmic functions
- R. Complex Numbers-definition and computations

VI. METHODS OF INSTRUCTION:

- A. Small group instruction in selected topics
- B. Computer assisted instruction designed to assess each student's strengths and weaknesses in algebra

VII. TYPICAL ASSIGNMENTS:

A. Complete a software-based assessment for pre-algebra/elementary algebra/intermediate algebra 1. Based on your assessment score participate in selected small group lecture/activities 2. Complete work in the software-based program to master concepts missed in the preliminary assessment B. Complete a worksheet of practice problems focusing on specific topics that have been identified as needing remediation.

VIII. EVALUATION:

A. **Methods**

- 1. Group Projects
- 2. Class Participation
- 3. Other:
  - a. Methods
    - 1. Time logged into the computer program
    - 2. Completion of remediation worksheets
    - 3. Participation in small group activities

B. **Frequency**

- 1. Frequency
  - a. Attendance and progress toward course completion can be monitored daily with independent study computer program
  - b. Required to participate in at least 5 small group activities
  - c. 5-10 worksheets each semester

IX. TYPICAL TEXTS:

- 1. Rich, Barnett, and Philip Schmidt *Schaum's Outline of Elementary Algebra*. 3rd ed., McGraw-Hill, 2009.
- 2. Bobrow, Jerry *CliffsQuick Review Algebra I*. 1st ed., Wiley, 2001.
- 3. White, Jonathan J., and Searcy Scott, Stimmel, Teri, Lutz, Danielle *CliffsNotes Basic Math and Pre-Algebra Practice Pack*. 1st ed., Wiley, 2010.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. Computer software program access code
- B. Scientific Calculator