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Course Outline for MATH 100

PRE-ALGEBRA & ALGEBRA REVIEW

Effective: Spring 2017

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:

	MIN
Lab Hours:	54.00
Total Hours:	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 an 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. Computer assisted instruction designed to assess each student's strengths and weaknesses in algebra

B. Small group instruction in selected topics

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