I. **OVERVIEW**

The following information will appear in the 2009 - 2010 catalog

MATH 47  **Skills for Success in Non-transfer Level Courses**  0.5 Unit

**Formerly listed as:** MATH - 47: Skills for Success in Elementary Algebra

Designed to provide practice in basic mathematical skills needed for success in non-transfer level math courses. Particularly useful for those who are weak in prerequisite skills or who have struggled in other non-transfer level mathematics courses. NOTE: MATH 47 DOES NOT serve as a prerequisite to any mathematics course.

Four maximum completions.

Field trips are not required. **Units/Hours:** 0.50 Units: Lab - 27.00 hours

**Grading:** P/NP Only

II. **LEARNING CONTEXT**

Given the following learning context, the student who satisfactorily completes this course should be able to achieve the goals specified in Section III, Desired Learning:

A. **COURSE CONTENT**

1. **Required Content:**

   Note - This course has only lab hours. All course content is described within the Lab Content section.

2. **Required Lab Content:**

   a. Integers
      i. Arithmetic Operations with Integers
      ii. Order of Operations
      iii. Applications

   b. Fractions
      i. Arithmetic Operations with Fractions
      ii. Applications

   c. Equations: Solving Linear Equations and Checking Solutions

   d. Formulas
      i. Evaluate formulas for given values
      ii. Solve a formula for a variable
      iii. Applications

   e. Applied Geometry
i. Perimeter

ii. Area

iii. Volume

iv. Angles

v. Pythagorean Theorem

f. Graphing
   i. Plotting Points
   ii. Graphing Lines

g. Factoring
   i. Factor Out the Greatest Common Factor
   ii. Factor by Grouping
   iii. Factoring Trinomials
   iv. Factor Differences of Squares and Sums and Differences of Cubes

h. Properties and Operations of Real Numbers
   i. Linear Equations, Graphing, and Inequalities

j. Simplifying Expressions

k. Solving Equations

l. Solving and Graphing Inequalities

m. Exponents and Radicals
   i. Simplifying Expressions
   ii. Solving Equations with Radicals
   iii. Rationalizing Denominators

n. Polynomials
   i. Arithmetic Operations
   ii. Factoring
   iii. Solving Equations Using the Factoring Method

o. Rational Expressions
   i. Arithmetic Operations
   ii. Complex Fractions
   iii. Solving Equations with Rational Expressions
iv. Applied Problems

p. Linear Equations in Two Variables
   i. Graphing Lines
   ii. Slope of a Line
   iii. Write and Equation of a Line
   iv. Graph Linear Inequalities

q. Systems of Linear Equations
   i. Solve by Graphing
   ii. Solve by the Substitution Method
   iii. Solve by the Addition/Elimination Method
   iv. Applied Problems

r. Quadratic Equations
   i. Solve by the Square Root Method
   ii. Solve by Completing the Square
   iii. Solve by the Quadratic Formula

B. HOURS AND UNITS

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C. METHODS OF INSTRUCTION (TYPICAL)

Instructors of the course might conduct the course using the following method:

1. Initial orientation meeting.
2. Students will be evaluated and assigned topics for review by the computer program.
3. Computer software will present content, demonstrate correct techniques, and lead students through a collection of on-line exercises.
4. Work through assigned content material on-line.
5. Students navigate learning paths based on their level of readiness.
6. Periodic meetings to evaluate student's progress.
D. ASSIGNMENTS (TYPICAL)

1. EVIDENCE OF APPROPRIATE WORKLOAD FOR COURSE UNITS
   Time spent on coursework in addition to hours of instruction (lecture hours)
   Each module within each category takes approximately 8 - 10 hours to complete. Each student will need to complete three modules to receive credit for the course.

2. EVIDENCE OF CRITICAL THINKING
   Assignments require the appropriate level of critical thinking
   These modules are designed to help students learn to think critically so that they can succeed in courses in the primary sequence.

E. TEXTS AND OTHER READINGS (TYPICAL)

1. Other: ALEKS: (Assessment and LEarning in Knowledge Spaces) (an artificial intelligence-based system for individualized math learning available via the World Wide Web) McGraw Hill Publisher

III. DESIRED LEARNING

A. COURSE GOAL
   As a result of satisfactory completion of this course, the student should be prepared to:
   achieve greater success in the non-transfer level math course(s) needed to meet career and/or academic goals.

B. STUDENT LEARNING GOALS
   Mastery of the following learning goals will enable the student to achieve the overall course goal.

1. Required Learning Goals
   Upon satisfactory completion of this course, the student will be able to:

2. Lab Learning Goals
   Upon satisfactory completion of the lab portion of this course, the student will be able to:
   a. Add, subtract, multiply, divide, round, and find the prime factorization of whole numbers
   b. Add, subtract, multiply, divide, and reduce fractions and mixed numbers
   c. Add, subtract, multiply, divide, and round decimals
   d. Convert between decimals, percents, fractions, and mixed numbers
   e. Use rules of exponents to simplify expressions
   f. Use scientific notation to represent large and small numbers
   g. Find the perimeter, area, or volume of a given simple two or three-dimensional figure
   h. identify and describe properties of real numbers
   i. graph linear equations and inequalities in one variable
   j. add, subtract, multiply, divide and factor polynomials
   k. simplify expressions and solve equations involving rational expressions
   l. solve applications using the Pythagorean Theorem
m. add, subtract and multiply complex numbers
n. solve quadratic equations using various methods

IV. METHODS OF ASSESSMENT (TYPICAL)

A. FORMATIVE ASSESSMENT
   1. Continuous computerized assessment after student completes each problem

B. SUMMATIVE ASSESSMENT
   1. Satisfactory completion of each module requires correct answers on a minimum of 70\% of the problems assigned within the module. Student must satisfactorily complete three modules to earn each 1/2 unit of credit.