Course Syllabus

Department: Mathematics

Date: October 23, 2014

I. Course Prefix and Number: MAT 095

   Course Name: Fundamental Mathematics & Algebra Skills

   Credit Hours and Contact Hours: 0 Credit Hours, 3 Contact Hours, 3 Imputed Credits

   Catalog Description including pre- and co-requisites: supporting data required for grade prerequisite of ‘C’ or higher.

A beginning course in mathematics designed to prepare the student for further pursuits in algebra or statistics. This is an introductory course in algebra for the student that has no algebra or minimal algebra skills.

Topics include integers, algebraic expressions, exponents, one variable first-degree equations, applied problems, algebraic fractions with whole number denominators, exponent rules, graphing lines and slope of a line.

This course carries imputed (financial aid) credit. It does not fulfill FLCC’s Mathematics or general elective requirements.

Prerequisite: Placement into Math Level 0

   Relationship to Academic Programs and Curriculum including SUNY Gen Ed designation if applicable:

This course is a developmental course that prepares the student for introductory college level mathematics/science courses needed for many programs

II. Course Student Learning Outcomes: State the student learning outcome(s) for the course (e.g. Student will be able to identify…)

Upon completion of the course the participant will be able to:

   1. Use the language and notation of algebra.
   2. Add/subtract/multiply/divide integers.
   3. Evaluate expressions by using the order of operations.
   4. Solve one variable, first degree equations.
   5. Solve applied problems using one variable, first degree equations.
   6. Add/Subtract/Multiply/Divide algebraic fractions with whole number denominators.
   7. Solve first degree equations that contain algebraic fractions with whole number denominators.
   8. Simplify algebraic expressions by using exponent rules
   9. Simplify algebraic expressions by combining like terms.
   10. Add/subtract/multiply expressions of more than one term.
   11. Draw a graph of a linear equation.
   12. Find the x and y intercepts of a linear equation
13. Find the slope of a line given two points
14. Interpret the practical meaning of the slope of a line for applied problems.

**College Learning Outcomes Addressed by the Course:** (check each College Learning Outcome addressed by the Student Learning Outcomes)

N/A

**III. Assessment Measures (Summarize how the college and student learning outcomes will be assessed):** *For each identified outcome checked, please provide the specific assessment measure.*

Student Learning Outcomes will be assessed through a variety of activities. Possible activities include quizzes, tests, portfolios, collected assignments, group activities, et. al. Such evaluations and related assignments will develop a student’s ability to read problems carefully, perform mathematics and use problem-solving techniques.

**IV. Instructional Materials and Methods**

**Types of Course Materials:**
- **Textbook:** As designated by department
- **Calculator:** Scientific Calculator required. TI-30X IIS or TI-30X IIB recommended

**Methods of Instruction (e.g. Lecture, Lab, Seminar …):**
1. Lectures
2. Discussions
3. Demonstrations
4. Group activities

**V. General Outline of Topics Covered:**
1) **Real Numbers**
   a) Addition, subtraction, multiplication and division of integers
   b) Evaluating expressions containing exponents
   c) Order of operations with integers
   d) Algebraic substitution (including applied problems)

2) **One Variable, First Degree Equations**
   a) Solving first degree equations
   b) Solving applied problems (given the equation)
   c) Solve for one variable in terms of another

3) **Algebraic Fractions with whole number denominators**
   a) Adding/subtracting algebraic fractions
   b) Multiplying/dividing algebraic fractions
   c) Using the distributive property to rewrite algebraic fractions
   d) Solving equations that contain algebraic fractions.
4) Exponents
   a) Definitions of terms: coefficient, variable, term
   b) Exponent rules with whole number exponents
   c) Combining like terms
   d) Distributive property
      i) Multiplying a polynomial by a monomial
      ii) Multiplying polynomials
         (Note: the terms “polynomial” and “monomial” should not be used in the course.)
   e) Simplifying algebraic expressions

5) Linear Equations in Two Variables
   a) Cartesian coordinate system
   b) Graphing, by hand, a given linear equation
   c) Horizontal and vertical lines
   d) Finding x and y intercepts algebraically and graphically
   e) Finding the slope of a line given two points
   f) Interpreting slope-intercept form graphically and for applied problems.
   g) Converting a two variable linear equation into slope intercept form