Date: February 1, 2011

I. Course Prefix and Number: GST 142
   Course Name: Fundamental Mathematics & Algebra Skills
   Credit Hours and Contact Hours: 3 Credit Hours, 3 Contact Hours

Catalog Description including pre- and co-requisites:
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 and inequalities, applied problems, polynomials, factoring, coordinate plane, and 2 variable linear equations. This course is used for general elective credit only. Prerequisite: Placement into Math Level 1

II. Course Outcomes and Objectives

Student Learning Outcomes:

Upon completion of the course the participant will be able to:
1. Use the language and notation of algebra.
2. Perform the four fundamental operations of mathematics involving integers.
3. Evaluate expressions by using the order of operations.
4. Simplify algebraic expressions.
5. Solve one variable, first degree equations.
6. Solve one variable, first degree inequalities.
7. Solving applied problems using one variable, first degree equations and inequalities.
8. Identify polynomials by number of terms and degree.
9. Perform operations with polynomials.
10. Factor polynomials.
11. Solve two variable linear equations.

Relationship to Academic Programs and Curriculum:

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

College Learning Outcomes Addressed by the Course:

☐ writing ☐ ethics/values
☐ oral communications ☐ citizenship
☒ reading ☐ global concerns
☒ mathematics ☐ information resources
☒ problem-solving ☐ professional competency
☐ computer literacy
III. 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

IV. Assessment Measures (Summarize how the college and student learning outcomes will be assessed):

Student Learning Outcomes will be assessed through a variety of activities. The Mathematics department believes that each instructor should determine the grading system and evaluation methods that will be used in their sections of the course. Any grading system used in the course must be consistent with the College Catalog. These methods must be communicated to students the first week of the semester in writing. Possible evaluation methods 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. Course policies with respect to attendance, late work, plagiarism, etc. must be communicated to the student.

V. General Outline of Topics Covered:

1. Real Numbers
   Operations of Addition, Subtraction, Multiplication and Division
   Order of Operations with Integers
   Exponents

2. Algebraic Expressions
   Variables, Constants and Exponents
   Algebraic Substitution
   Distributive Property
   Combining Like Terms
   Simplifying Algebraic Expressions
   Exponent Rules (with integer exponents)

3. One Variable, First Degree Equations
   Properties of Equality
   Solving One Variable, First Degree Equations
   Solving Applied Problems
4. One Variable, First Degree Inequalities (optional)

   Properties of Inequalities
   Solving One Variable, First Degree Inequalities
   Solving Applied Problems.

5. Polynomials

   Introduction to polynomials
   Operations with Polynomials

6. Factoring Polynomials.

7. Introduction to Linear Equations in Two Variables

   Cartesian Coordinate System
   Linear Equations in Two Variables