MATH A091: SUPPORT FOR COLLEGE ALGEBRA

Item	Value
Curriculum Committee Approval Date	09/21/2022
Top Code	170200 - Mathematics Skills
Units	2 Total Units
Hours	36 Total Hours (Lecture Hours 36)
Total Outside of Class Hours	0
Course Credit Status	Credit: Support Course - Non-Degree Applicable (S)
Material Fee	No
Basic Skills	Basic Skills (B)
Repeatable	No
Grading Policy	Pass/No Pass (B)

Course Description

A concurrent support course for MATH A115, College Algebra, designed to review prerequisite skills necessary for success. Topics include operations with real numbers, an introduction to polynomial, operations with rational and radical expressions, an introduction to polynomials, and solutions to linear equations and inequalities. COREQUISITE: MATH A115. NOT DEGREE APPLICABLE. Not Transferable.

Course Level Student Learning Outcome(s)

1. Perform operations on real numbers and algebraic expressions.
2. Graph a function and state its domain and range.

Course Objectives

- 1. Address the affective side of learning in order to provide students with the skills necessary to be successful in a transfer level math course.
- 2. Perform operations with real numbers.
- 3. Factor and perform operations on polynomials and solve equations involving first and second degree polynomials.
- 4. Understand and use relations and functions to graph, state domain and range, and perform operations.
- 5. Simplify expressions and solve equations containing rational and radical terms.
- 6. Solve systems of linear equations.

Lecture Content

Learning skills Study skills Time management Math anxiety Test taking skills Operations with real numbers Addition, subtraction, multiplication, and division of real numbers Order of operations Exponential notation Rules of exponents Introduction to polynomials Addition, subtraction, multiplication, and division with polynomials Factoring polynomials including the difference of squares and sum and difference of cubes. The quadratic formula and completing the square. Graph linear equations. Operations with rational expressions Addition, subtraction, multiplication, and division with rational expressions. Simplify complex fractions. Operations with radical expressions Simplify radical expressions including nth root Addition, subtraction, multiplication, and division with radical expressions Introduction to functions Function notation and evaluation Domain and range of a function given graphically and algebraically Algebra of functions: addition, subtraction, multiplication, division, and composition Solve equations and inequalities Solve linear and quadratic equations Solve equations involving rational expressions. Solve equations involving radical expressions. Solve linear inequalities in one variable and graph the solution set. Solving systems of linear equations. Exponential and logarithmic functions Introduction to exponential and logarithmic functions. Properties of exponential and logarithmic functions. Solving equations involving exponential and logarithmic terms.

Method(s) of Instruction

- Lecture (02)

Instructional Techniques

Lecture, discussion, collaborative learning

Reading Assignments

Students will spend approximately 1 hour per week reading from the assigned text.

Writing Assignments

Students will spend approximately 1 hour per week on writing assignments. Short-answer questions. Essay questions. Group and/or individual projects.

Out-of-class Assignments

Students will spend approximately 2 hours per week on out-of-class assignments including reading and written homework involving problem-solving exercises. Practice problem sets requiring application of course material Preparation assignments that require students to answer specific questions that will be discussed in an upcoming class meeting.

Demonstration of Critical Thinking

Group work, quizzes, written tests or comprehensive final exam, and application of skills in support of College Algebra.

Required Writing, Problem Solving, Skills Demonstration

Group work, quizzes, written tests, or comprehensive final exam.

Eligible Disciplines

Mathematics: Masters degree in mathematics or applied mathematics OR bachelors degree in either of the above AND masters degree in statistics, physics, or mathematics education OR the equivalent. Masters degree required.

Textbooks Resources

1. Required Miller, J and Gerken, D. College Algebra, 2nd ed. McGraw Hill, 2017 Rationale: -

Other Resources

1. Instructors may choose to use a software such as MML, ALEKS or Webassign. 2. Other appropriate textbook as chosen by fulltime faculty.