MATH C092: SUPPORT FOR TRIGONOMETRY

Item	Value
Curriculum Committee Approval Date	10/27/2023
Top Code	170100 - Mathematics, General
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	Not Basic Skills (N)
Repeatable	No
Grading Policy	Pass/No Pass (B)

Course Description

A concurrent support course designed to review prerequisite topics necessary for success in MATH C120, Trigonometry, covering operations with real numbers, relations and functions, systems of linear equations, factoring, rational expressions, quadratic equations, conic sections, and basic geometry. COREQUISITE: MATH C120. NOT DEGREE APPLICABLE. Not Transferable.

Course Level Student Learning Outcome(s)

1. Use proportions to set up and solve equations based on similar polygons.
2. Factor a trinomial with a leading coefficient other than 1.

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. Understand and use relations and functions to graph, state domain and range, and perform operations.
- 4. Solve systems of linear equations.
- 5. Factor and perform operations on polynomials.
- 6. Solve quadratic equations.
- 7. Perform operations on and solve equations involving rational expressions.
- 8. Identify and provide basic graphs of conic sections.
- 9. Understand and use proportions, area formulas, and the Pythagorean Theorem to solve problems in geometry.

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 Simplification of radicals Algebraic operations with radicals Rationalizing the denominator Graphs, relations, and functions Relations and functions Domain and range Function notation Algebra of functions addition, subtraction, multiplication, division, and composition Inverse functions Equations of lines Graphs of lines Systems of linear equations Solve systems of equations Polynomials and factoring Definition of a polynomial Operations with polynomials Addition, subtraction, multiplication, and division Factor quadratics and the sum and difference of cubes Solve factorable quadratic equations Rational expressions Combine and simplify rational expressions Solve equations involving rational expressions Simplify complex fractions Divide polynomials Quadratic equations Solve quadratic equations by completing the square and by the quadratic formula Introduction to Conic sections Identify and provide basic graphs of the parabola, circle, ellipse, and hyperbola Geometry Pythagorean Theorem, the coordinate plane, and the equation of a circle. Proportions from similar polygons and parts of circles. Areas of triangles, circles, and parallelograms.

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)

Instructional Techniques

The instructor shall deliver lectures of course content; assign homework and quizzes; deal with math anxiety by establishing a friendly, student-centered learning environment; relate material in the course to real life and the outside world; involve active learning; and require participation and regular, substantive interaction (RSI), including student-to-student and student-to-instructor interaction through the use of individual, small-group and whole-class discussion; apply and include technology to increase motivation such as graphing calculators, the Internet, and computer software; and include appropriate methods of summative assessment including midterm and final exams.

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.

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.

Demonstration of Critical Thinking

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

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 Dulgopolski, M. Trigonometry, 5th ed. Pearson, 2020

Other Resources

1. Coastline Library