MATH A082N: MATH JAM FOR STEM PATHWAY NONCREDIT

Item	Value
Curriculum Committee Approval Date	12/02/2020
Top Code	170200 - Mathematics Skills
Units	0 Total Units
Hours	36 Total Hours (Lecture Hours 36)
Total Outside of Class Hours	0
Course Credit Status	Noncredit: Support Course (U)
Material Fee	No
Basic Skills	Basic Skills (B)
Repeatable	Yes; Repeat Limit 99
Grading Policy	P/NP/SP Non-Credit (D)

Course Description

This is a preparation course designed to review prerequisite topics necessary for success in MATH A115 or MATH A120 covering operations with real numbers, relations and functions, systems of linear equations, factoring, rational expressions, radical equations, quadratic equations, exponential and logarithmic equations, conic sections, and basic geometry. Noncredit. NOT DEGREE APPLICABLE. Not Transferable.

Course Level Student Learning Outcome(s)

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

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 Operations with radical expressions Simplify radical expressions including nth root Addition, subtraction, multiplication, and division with radical expressions Quadratic equations Solve quadratic equations by completing the square and by the quadratic formula Exponential and logarithmic functions Introduction to exponential and logarithmic functions. Properties of exponential and logarithmic functions. Solving equations involving exponential and logarithmic terms. Introduction to Conic sectio ns 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

- Enhanced NC Lect (NC1)
- Online Enhanced NC Lect (NC5)
- Live Online Enhanced NC Lect (NC9)
- DE Delayed Enhanced NC Lect (NCD)

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.

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.

Required Writing, Problem Solving, Skills Demonstration

Group work, quizzes, written tests.

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 Michael Sullivan, III. Corequisite Support for College Algebra: Concepts through Functions, 4 ed. Pearson, 2019

Other Resources

1. Other appropriate textbook or software as chosen by fulltime faculty.