MATH A064N: MATH SKILLS FOR BUSINESS CALCULUS

Item	Value
Curriculum Committee Approval Date	12/04/2024
Top Code	170200 - Mathematics Skills
Units	0 Total Units
Hours	54 Total Hours (Lab Hours 54)
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
Open Entry/Open Exit	Yes
Grading Policy	P/NP/SP Non-Credit (D)

Course Description

This noncredit course will help students build various skills required in their Business Calculus course. These skills include factoring, solving equations, manipulating expressions, laws of exponents, and graphing. Students enrolled in this class should be concurrently enrolled in a transfer-level math class 100 level or higher. NOT DEGREE APPLICABLE. Not Transferable.

Course Level Student Learning Outcome(s)

1. Students will be able to demonstrate improvement in skills required for Business Calculus including factoring, solving, manipulating expressions, laws of exponents, logarithms, and graphing.

Course Objectives

- 1. Build skills related to operations with real numbers
- 2. Build skills related to linear functions
- 3. Build skills related to graphs
- 4. Build skills related to expressions
- 5. Build skills related to solving equations
- 6. Build skills related to functions
- 7. Build skills related to exponential and logarithmic functions
- 8. Build skills related to geometry
- 9. Build skills related to supporting topics in Business Calculus

Lecture Content

See Lab Content

Lab Content

Students will build skills in the following areas as needed: Operations with real numbers Order of operations Properties of exponents Calculator usage: rounding and evaluating expressions Linear Functions Find the slope and intercepts of a line Write the equation of a line in slope-intercept form given the slope and a point or two points Graph a line given its equation Graphs Find the domain Find the intercepts Graph quadratic functions and find the vertex Graph rational functions. Find vertical and horizontal asymptotes and determine if the graph crosses the horizontal asymptote. Expressions Perform operations on polynomials, including dividing a polynomial by a monomial Factor expressions, including rational exponents and factoring out expressions Simplifying and performing operations on rational and complex fractions, including simplifying rational expressions that require factoring out a multi-term GCF Equations Solve linear, quadratic (including quadratic formula) and cubic equations Solve equations with rational exponents using factoring Solve rational equations Functions Evaluate functions using function notation and simplify the difference quotient Graph functions, including quadratic, cubic, square root, cube root, rational, absolute value, and piece-wise defined. Find the domain and range of a function given its equation or its graph using set-builder notation and interval notation Exponential and logarithmic functions. Use exponent rules for rational and integer exponents Graph and evaluate exponential functions. Graph and evaluate logarithmic functions Use Logarithmic properties to rewrite expressions Solve exponential and logarithmic equations. Evaluate and solve compound interest problems Use geometry to find areas Find the area of rectangles, triangles, and circles Find the area formed by two or more shapes using addition or subtraction Support for Business Calculus in areas such as Limits Differentiation and integration Rates of change and tangent lines Optimization Curve sketching Applied problems

Method(s) of Instruction

- Enhanced NC Lab (NC2)

Instructional Techniques

DiscussionCollaborative LearningGuided Independent Study

Reading Assignments

N/A

Writing Assignments

Students will complete written assignments during lab hours

Out-of-class Assignments

N/A

Demonstration of Critical Thinking

Applications of skills to problem solving exercises

Required Writing, Problem Solving, Skills Demonstration

Problem solving exercises

Eligible Disciplines

Mathematics: Master's degree in mathematics or applied mathematics OR bachelor's degree in either of the above AND master's degree in statistics, physics, or mathematics education OR the equivalent. Master's degree required.

Textbooks Resources

1. Required Miller, J. College Algebra, 3rd ed. McGraw Hill, 2023