MATH 115

Learning Objectives and Prerequisites

At the end of MATH 115 students should

Understand and Implement Function Notation and Properties.
- Identify and apply the different types of function notation
- Apply properties of functions including: Even/Odd, Increasing/Decreasing/Constant Intervals, Min/Max
- Identify functions based on a graph
- Identify functions based on an equation
- Identify and apply transformations of functions
- Identify domain and range of functions
- Determine if a function is one-to-one
- Determine if a function is invertible and find inverses of invertible functions
- Calculate function values and expressions, including the difference quotient

Understand and Apply Exponential and Logarithmic Functions
- Identify exponential functions and apply their properties
- Identify logarithmic functions and apply their properties
- Evaluate exponential and logarithmic functions at specific values
- Analyze and graph exponential and logarithmic functions
- Solve exponential and logarithmic equations
- Understand and apply formulas for compound interest, exponential growth and decay

Understand and Apply Rational Functions
- Identify rational functions and apply their properties
- Graph rational functions, identifying any asymptotes
- Simplify and evaluate rational functions
- Solve rational equations

Understand and Apply Systems of Equations
- Solve systems of equations graphically and algebraically
- Solve systems of linear equations using Gaussian and Gauss-Jordan elimination
- Solve systems of equations using inverses of matrices
- Determine which matrices have inverses and calculate those inverses
- Calculate results of addition, subtraction, and multiplication of matrices
- Calculate determinants of matrices

- Solve non-linear systems of equations

Solve a variety of application problems in the above areas

Technology Tools Used
- Demonstrate proficient use of email, MyMathLab, and Blackboard technologies
- Use a scientific calculator proficiently

Prerequisite Skills and Knowledge
- Completion of MATH 035 with a C or better (see course objectives) or
- Appropriate score on math placement test (currently a 12 or above on the MapleTA)

NOTE: Students should take MATH 115 only if they are required to take a course that has MATH 115 as a prerequisite.