

Mathematics Assessment Plan  
Rev. 2/5/2021

Mathematics	16-17	17-18	18-19	19-20	20-21	21-22
<b>MATHB1A - Precalculus I</b>						
• 1. Upon successful completion of the course, the student will translate and solve application problems including exponential, linear, quadratic and optimization problems. Be able to interpret solutions.			C			P
• 2. Upon successful completion of the course, the student will classify various functions, and apply an appropriate algorithm to find solutions, both algebraically and by using the graph of the function.				C		
• 3. Upon successful completion of the course, the student will describe the behavior of various functions. Formulate conjectures on the nature of the roots of polynomials.					P	
<b>MATHB1AC - Precalculus 1 Co-Requisite</b>						
• 1. Upon successful completion of the course, the student will be able to translate and solve application problems including exponential, linear, quadratic and optimization problems. Be able to interpret solutions.						P
• 2. Upon successful completion of the course, the student will be able to classify various functions, and apply an appropriate algorithm to find solutions, both algebraically and by using the graph of the function.						P
• 3. Upon successful completion of the course, the student will be able to describe the behavior of various functions and formulate conjectures on the nature of the roots of polynomials.					P	
<b>MATHB1AL - Precalculus I with Lab</b>						
• 1. Upon successful completion of the course, the student will be able to translate and solve application problems including exponential, linear, quadratic and optimization problems. Be able to interpret solutions.						P
• 2. Upon successful completion of the course, the student will be able to categorize various functions, and apply an appropriate algorithm to find solutions, both algebraically and by using the graph of the function.				C		
• 3. Upon successful completion of the course, the student will be able to interpret the behavior of various functions and write conjectures on the nature of the roots of polynomials.				C	P	
<b>MATHB1B - Precalculus II</b>						
• 1. Upon completion of the course, the student will translate applications of distance, angle and wave behaviors by identifying and applying appropriate trigonometric formulas, and then solve and interpret solutions.						P
• 2. Upon completion of the course, the student will classify trigonometric functions. Apply appropriate identities and formulas to evaluate, simplify and solve equations.				C		
• 3. Upon completion of the course, the student will demonstrate mathematical knowledge by clearly communicating concepts in written, verbal and graphing forms, including proofs.					P	
<b>MATHB2 - Basic Functions and Calculus for Business</b>						
• Upon completion the student will be able to: Translate application problems such as revenue, profit and cost, and then solve using calculus.		C	C			P
• Apply appropriate algorithms to evaluate limits, derivatives, and integrals to formulate solutions to business applications.	C					
• Demonstrate the concepts of business calculus by communicating in written, verbal and graphical form.					P	
<b>MATHB4A - Mathematics for Elementary School Teaching</b>						
• Upon completion the student will be able to: Use multiple problem-solving strategies and approaches to solve real-world application problems, and to develop problems for all contexts of basic number operations using whole numbers, integers, rational numbers, sets, functions, and logic.			C			P
• Identify patterns and relationships between operations involving whole numbers, integers, and rational numbers, and to develop the real number system to introduce algebraic concepts within the real number system.	C			C		
• Develop mathematical vocabulary for use in the mathematics elementary school classroom.		C			P	
<b>MATHB6A - Analytic Geometry/Calculus I</b>						
• Upon completion student will be able to: Translate application problems, such as related rates, optimization, and velocity-displacement. Solve and interpret solutions using calculus.			C			P
• Apply appropriate algorithms to evaluate limits, derivatives, and integrals to formulate solutions.	C			C		
• Demonstrate the concepts of calculus by communicating in written, verbal and graphical form.		C			P	

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<b>MATHB6B - Analytic Geometry/Calculus II</b>						
• 1. Upon successful completion of the course, the student will be able to: Apply various integration techniques to evaluate integrals, including exponential and logarithmic functions.						P
• 2. Upon successful completion of the course, the student will be able to: Apply differentiation and integration methods to parametric and polar functions, when applicable.				C		
• 3. Upon successful completion of the course, the student will be able to: Distinguish, understand, and able to apply mathematical knowledge of series and sequences.					P	
<b>MATHB6C - Calculus III</b>						
• Upon completion the student will be able to: 1. Perform vector operations;			C			P
• 2. Determine equations of lines and planes;	C			C		
• Apply Greens Stokes', and divergence theorems.						P
• 3. Find the limit of a function at a point;					P	
• 4. Evaluate derivatives and write the equation of a tangent plane at a point;		C				P
• 5. Determine differentiability;						P
• 6. Find local extrema and test for saddle points;						P
• 7. Solve constraint problems using Lagrange multipliers;						P
• 8. Compute arc length and find the divergence and curl of a vector field;						P
• 9. Evaluate two and three dimensional integrals;						P
• 10. Apply Green's, Stokes', and divergence theorems.				C		
<b>MATHB6D - Ordinary Differential Equations</b>						
• 1. Upon successful completion of the course, the student will be able to generate application problems by composing an appropriate differential equation and determine the solution using various methods such as separable, numerical, and undetermined coefficients and analyze the solution.						P
• 2. Upon successful completion of the course, the student will be able to classify various initial value problems and choose the appropriate method of solution.				C		
• 3. Upon successful completion of the course, the student will be able to associate the knowledge of the criteria for the existence of a unique solution to an initial value problem by clearly defending concepts in written and verbal form.					P	
<b>MATHB6E - Elementary Linear Algebra</b>						
• Upon completion the student will be able to: Find solutions of systems of equations using various methods appropriate to lower division linear algebra;					P	
• Upon completion the student will be able to: Use bases and orthonormal bases to solve problems in linear algebra;	C			C		P
• Upon completion the student will be able to: Find the dimension of spaces such as those associated with matrices and linear transformations;		C				
• Upon completion the student will be able to: Find eigenvalues and eigenvectors and use them in applications; and			C			
• Upon completion the student will be able to: Prove basic results in linear algebra using appropriate proof-writing techniques such as linear independence of vectors; properties of subspaces; linearity, injectivity and surjectivity of functions; and properties of eigenvectors and eigenvalues.				C		
<b>MATHB21 - Special Projects in Mathematics</b>						
• Upon completion the student will be able to: The student will demonstrate their knowledge of mathematics and its application in various settings.	C	C			P	P
<b>MATHB22 - Elementary Probability and Statistics</b>						
• Upon completion the student will be able to: Translate application problems by using inferential data analysis techniques. Analyze and interpret solutions.		C	C			P
• Upon completion the student will be able to: Apply appropriate techniques of probability and probability distributions to solve problems.	C			C		
• Upon completion the student will be able to: Demonstrate statistical knowledge of descriptive statistics by clearly communicating concepts in written or verbal form.		C			P	

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<b>MATHB22L - Elementary Probability and Statistics with Lab</b>						
• 1. Upon successful completion of the course, the student will be able to translate application problems by using inferential data analysis techniques as well as analyze and interpret solutions.						P
• 2. Upon successful completion of the course, the student will be able to apply appropriate techniques of probability and probability distributions to solve problems.				C		
• 3. Upon successful completion of the course, the student will be able to demonstrate working knowledge of descriptive statistics by clearly communicating concepts in written and verbal form.					P	
<b>MATHB23 - Finite Mathematics</b>						
• Upon completion the student will be able to: Translate application problems related to linear programming, finance, business and economics. Solve and interpret solutions.		C	C			P
• Upon completion the student will be able to: Distinguish and apply appropriate formulas to solve problems involving in finance, combinatorics, and sets.	C	C		C		
• Upon completion the student will be able to: Distinguish between approaches related to linear programming, finance, and combinatorics in written or verbal form.		C			P	
<b>MATHB50 - Modern College Arithmetic and Pre-Algebra</b>						
• Upon completion the student will be able to: Demonstrate the ability to add, subtract, multiply, and divide whole numbers, integers, fractions, mixed numbers, and decimals.						P
• Upon completion the student will be able to: Solve Linear Equations by: a) Using the Addition/Subtraction property of equality, b) Using the Multiplication/Division property of equality.						P
• Upon completion the student will be able to: Translate English sentences to algebraic equations.	C					P
• Upon completion the student will be able to: Simplify mathematical statements using the correct order of operations.						P
• Upon completion the student will be able to: Calculate the perimeter and area of rectangles and triangles. Calculate the area and circumference of a circle.						P
• Upon completion the student will be able to: Find equivalent forms of numbers (i.e. change fractions to decimals, change percents to fractions, change fractions to percents, change decimals to fractions, change decimals to percents, change percents to decimals, change mixed numbers to improper fractions, change improper fractions to mixed numbers).						P
• Upon completion the student will be able to: Round whole numbers and decimals appropriately as directed.						P
• Upon completion the student will be able to: Apply the concept of percent to real-world applications such as sales tax, discount, and simple interest.						P
• Upon completion the student will be able to: Make conversions in the US Customary System of measurements, as well as in the Metric System.						P
<b>MATHB51NC - Interesting Integers and Functional Fractions</b>						
• 1. Upon successful completion of the course, the student will be able to demonstrate operations on integers and fractions as well as improve their understanding of the concepts of fractions.						P
• 2. Upon successful completion of the course, the student will increase their number sense through the work with integers and fractions on the number line and in real-world applications.						P
• 3. Upon successful completion of the course, the student will be able to simplify mathematical statements by performing the correct order of operations.						P
<b>MATHB52NC - Perfect Percents and Devious Decimals</b>						
• 1. Upon successful completion of the course, the student will be able to perform operations on and improve their understanding of the concepts of fractions.						P
• 2. Upon successful completion of the course, the student will increase their number sense and be able to find equivalent forms of numbers: fraction, mixed fractions, decimals, percent.						P
• 3. Upon successful completion of the course, the student will be able to apply the concept of fractions, unit conversion, and percent to real-world applications.						P

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<b>MATHB60 - Beginning Algebra</b>						
• Upon completion the student will be able to: Translate application problems, such as distance, percent, and geometry by formatting an appropriate equation or inequality. Solve and interpret solutions.		C	C			P
• Upon completion the student will be able to: Classify linear, rational, and quadratic functions, and apply appropriate algorithms, including factoring, graphing, and symbolic representations to find solutions.	C					P
• Upon completion the student will be able to: Demonstrate mathematical knowledge by clearly communicating linear, exponent, and rational concepts in written or verbal form.		C				P
<b>MATHB65 - Intermediate Algebra for Statistics</b>						
• Upon completion the student will be able to: Translate application problems such as distance, percent, geometry, motion, mixture, and work by formatting an appropriate equation or inequality. Solve and interpret solutions.		C	C			P
• Upon completion the student will be able to: Classify linear, rational, exponential and logarithmic functions, and apply appropriate algorithms, including factoring, graphing, and symbolic representations to find solutions.	C					P
• Upon completion the student will be able to: Demonstrate mathematical knowledge by clearly communicating linear, exponent, rational, and exponential and logarithmic concepts in written or verbal form.		C				P
<b>MATHB70 - Intermediate Algebra</b>						
• Upon completion the student will be able to: Translate application problems involving motion, mixture and work by formulating appropriate equations, systems of equations or inequalities. Solve and interpret results.			C			P
• Upon completion the student will be able to: Classify linear and non-linear functions, including conic and logarithmic. Apply appropriate algorithms, including factoring, graphing, and symbolic representations to find solutions.		C				P
• Upon completion the student will be able to: Demonstrate mathematical knowledge by clearly communicating linear and non-linear concepts including radicals, exponential and logarithmic concepts in written or verbal form.		C				P
<b>MATHB71NC - Math Jam - Review of Critical Intermediate Algebra Skills</b>						
• 1. Upon successful completion of the course, the student will be able to demonstrate necessary math rules that underlie linear and non-linear equations.						P
• 2. Upon successful completion of the course, the student be able to solve linear, rational, quadratic equations.						P
• 3. Upon successful completion of the course, the student will be able to demonstrate mathematical knowledge by translating application problems and communicating in graphical form.						P
<b>MATHB72 - General Mathematics for Non-BSTEM majors</b>						
• 1. Upon successful completion of the course, the student will be able to use multiple problem-solving approaches to solve real-world application problems including linear and quadratic equations and functions.						P
• 2. Upon successful completion of the course, the student will be able to compare and contrast mathematical arguments in written or verbal form relating to sets and logic.				C		
• 3. Upon successful completion of the course, the student will be able to comprehend mathematical concepts of combinatorics, probability, and measures of central tendency.					P	
<b>MATHB75 - Fundamentals of Algebra for BSTEM majors</b>						
• 1. Upon successful completion of the course the student will be able to translate application problems involving motion, mixture and work by formulating appropriate equations, systems of equations or inequalities as well as solve and interpret results.						P
• 2. Upon successful completion of the course, the student will be able to classify linear and non-linear functions; apply appropriate algorithms, including factoring, graphing, and symbolic representations in order to find solutions.				C		
• 3. Upon successful completion of the course, the student will be able to demonstrate mathematical knowledge by clearly communicating linear and non-linear concepts in written or verbal form.					P	