Mathematics SLO to PLO Alignment(No Results)_February 2017

CAN Program - Math

Students will use mathematical reasoning to solve problems and a generalized problem solving process to solve real-world problems.

CAN Dept - Mathematics

CAN MATH 110 : Elementary Algebra

Applying and Solving Quadratic and Rational Equations: 4. Construct and solve quadratic equations to model a given application.
a. Apply factoring techniques to solve quadratic equations.
b. Verify that solutions comply with any constraints in the model.

CAN MATH 110 : Elementary Algebra

Systems of Equations: 5. Solve a two by two system of linear equations.
a. Identify the different types of systems and their graphical interpretations.
b. Use different methods to solve a system of two linear equations.

CAN MATH 111 : Elementary Algebra I

Apply and Solve linear Equations: 1. Solve linear algebraic equations and inequalities that model a given application.
a. Translate a statement into an appropriate one-variable linear equation or inequality.
b. Use appropriate strategies to find the solutions.
c. Model and solve word problems whose solutions require formulating one variable linear equations.

CAN MATH 111 : Elementary Algebra I

Linear Graphs: 2. Construct and analyze a linear graph in a Cartesian coordinate system.
a. Use different methods to graph a two-variable linear equation.
b. Interpret the graph.

CAN MATH 112 : Elementary Algebra II

Students will use mathematical reasoning to solve problems and a generalized problem solving process to solve real-world problems.

CAN MATH 112 : Elementary Algebra II

Apply and Solve Quadratic and Rational Equations: 2. Construct and solve quadratic and rational equations to model a given application.
a. Apply factoring techniques to solve quadratic equations.
b. Use appropriate methods to solve rational equations.
c. Verify that solutions comply with any constraints in the model.
d. Model and solve word problems whose solutions require formulating one variable quadratic or rational equations.

CAN MATH 112 : Elementary Algebra II

Systems of Equations: 3. Solve a two by two system of linear equations.
a. Identify the different types of systems and their graphical interpretations.
b. Use different methods to solve a system of two linear equations.

CAN MATH 115 : Geometry

Proof: Complete a two column proof, a proof using inductive reasoning, or a proof by contradiction

CAN MATH 115 : Geometry

Volumes and areas: Calculate the volumes or areas for geometric solids or plan figures

CAN MATH 120 : Intermediate Algebra

Using equations to model: 1: Write and solve linear, quadratic, exponential, and logarithmic equations and inequalities that model a given application.

CAN MATH 120 : Intermediate Algebra

Analyze and solve equations: Analyze and solve quadratic, exponential, and logarithmic equations.

CAN MATH 120 : Intermediate Algebra

Graph and analyze functions: Graph and analyze linear, quadratic, exponential, and logarithmic functions.

CAN MATH 122 : Intermediate Algebra I

Solve Equations: Write and solve linear, exponential, and logarithmic equations and inequalities that model a given application.

CAN MATH 122 : Intermediate Algebra I

Exponential and logarithmic equations: Analyze and solve exponential and logarithmic equations

CAN MATH 122 : Intermediate Algebra I

Graph: Graph and analyze linear, exponential, and logarithmic functions.

CAN MATH 123 : Intermediate Algebra II

Solve proportion and variation problems: Solve and interpret applications involving proportions and variation

CAN MATH 125 : Elementary Finite Mathematics

Students will use mathematical reasoning to solve problems and a generalized problem solving process to solve real-world problems.

CAN MATH 125 : Elementary Finite Mathematics

Simplex method: Use the simplex method to solve a standard maximization problem

CAN MATH 125 : Elementary Finite Mathematics

Financial: Use the simple interest, compound interest, future value, and present value formulas to solve financial problems

CAN MATH 125 : Elementary Finite Mathematics

Probability: Find expected values of a random variable

CAN MATH 130 : Analytical Trigonometry

Modeling periodic behavior: Use Trigonometric functions to model periodic behavior.

CAN MATH 130 : Analytical Trigonometry

Solve Triangles: Solve triangles using the definitions of the trigonometric functions, the law of sines, or the law of cosines.

CAN MATH 140 : Math For Gen Education

problem solving: Apply mathematical principles and techniques to solve problems in areas such as systems of numeration, algebraic modeling, basic trigonometry, probability, statistics, and math of finance.

CAN MATH 140 : Math For Gen Education

Prabability and Statistics: Demonstrate a knowledge of probability and statistics by solving a variety of counting problems, by calculating the probability of games of chance, and by analyzing statistical data.

CAN MATH 200 : Elem Probability & Statistics

Central tendency and variation: Compute measures of central tendency and variation

CAN MATH 200 : Elem Probability & Statistics

Plots: Plot histogram, scatter plot, box plot

CAN MATH 200 : Elem Probability & Statistics

Probability: Identify and apply the basic laws of probability such as complements, independence, and the role of probability in statistics

CAN MATH 200 : Elem Probability & Statistics

Hypothesis testing: Given an inferential statistics problem, identify the appropriate hypothesis test, perform the hypothesis test, and interpret the results.

CAN MATH 222 : Pre-Calculus Col Algebra/Trig

polynomial and rational functions: Describe the short run and long run behavior of polynomial and rational functions.

CAN MATH 241 : Applied Calculus I

Derivatives: Find and interpret the derivatives of polynomial, rational, piecewise defined, exponential, and logarithmic functions including those requiring the product, quotient, and chain rules

CAN MATH 241 : Applied Calculus I

Students will use mathematical reasoning to solve problems and a generalized problem solving process to solve real-world problems.

CAN MATH 241 : Applied Calculus I

Extrema and optimization: Find and apply relative extema, absolute extrema, and points of inflection.

CAN MATH 241 : Applied Calculus I

Related Rates: Solve related rates problems

CAN MATH 241 : Applied Calculus I

Antiderivatives: Find and apply the antiderivative of a function

CAN MATH 241 : Applied Calculus I

Integrals: Evaluate and apply definite integrals

CAN MATH 242 : Applied Calculus II

Numerical methods of integration: Use a graphing calculator and numerical methods (left hand sum, right hand sum, midpoint rule, trapezoid rule, and Simpson?s rule) to approximate integrals.

CAN MATH 242 : Applied Calculus II

Partial Derivatives: Find and Interpret partial derivatives

CAN MATH 242 : Applied Calculus II

Optimization: Use the second derivative test for 2 variables and Lagrange multipliers to optimize functions of 2 or more variables.

CAN MATH 242 : Applied Calculus II

Calculus with Trig functions: Evaluate and apply the derivatives and integrals involving the sine and cosine functions.

CAN MATH 242 : Applied Calculus II

Differential Equations: Solve separable and first order linear differential equations

CAN MATH 251 : Calculus/Analytic Geometry I

define/interprete derivatives: Interpret derivatives of functions from a numerical, graphical, and symbolic point of view.

CAN MATH 251 : Calculus/Analytic Geometry I

apply derivatives: Apply derivatives to related rates and optimization problems.

CAN MATH 252 : Calculus/Analytic Geometry II

integrals: Relate Integrals to anti-derivatives, limits of the Riemann sums, and areas under a curve.

CAN MATH 253 : Calculus/Analytic Geometry III

partial derivatives: Compute derivatives of multivariable functions and apply to geometry and optimization problems.

CAN MATH 253 : Calculus/Analytic Geometry III

Students will use mathematical reasoning to solve problems and a generalized problem solving process to solve real-world problems.

CAN MATH 253 : Calculus/Analytic Geometry III

vectors-valued functions: Model motion using vectors valued functions.

CAN MATH 253 : Calculus/Analytic Geometry III

integrals: Identify and compute the different types of integrals.

CAN MATH 253 : Calculus/Analytic Geometry III

ftoc: Recognize and apply the fundamental theorem of calculus.

CAN MATH 270 : Linear Algebra

systems via matrices: Correctly solve a system of equations using matrices and Gaussian elimination.

CAN MATH 275 : Ordinary Differential Equation

Develop Models: Correctly develop a differential equation to model a particular situation.

CAN MATH 275 : Ordinary Differential Equation

Initial value problems: Use standard methods (integrating factors, undetermined coefficients, variation of parameters, Laplace Transforms, numerical methods, power series) to find a solution to an initial-value problem.

CAN MATH 811 : Pre-Algebra

proportions: Set up and solve proportion problems.

CAN MATH 811 : Pre-Algebra

percentages: Solve problems involving percentages.

CAN MATH 811 : Pre-Algebra

word problem: Translate verbal expressions into math and solve.

CAN MATH 818: Basic Mathematics for Health Science

units: Perform unit conversions

CAN MATH 818: Basic Mathematics for Health Science

stats: Compute basic descriptive statistics: Mean, Standard Deviation, and Coefficient of Variation

Students will demonstrate the ability to use symbolic, graphical, numerical, and written representations of mathematical ideas.

CAN Dept - Mathematics

CAN MATH 110 : Elementary Algebra

Solve Linear Equations: 1. Solve linear algebraic equations and inequalities that model a given application.
a. Translate a statement into an appropriate one-variable linear equation or inequality.
b. Use appropriate strategies to find the solutions.
c. Model and solve word problems whose solutions require formulating one variable linear equations.

CAN MATH 110 : Elementary Algebra

Simplify Polynomials and Rational Expressions: 2. Simplify polynomials, and rational expressions.
a. Use appropriate techniques to multiply, divide, add, and subtract polynomials and rational expressions.
b. Simplify expressions with integer exponents.

CAN MATH 110 : Elementary Algebra

Graphing Lines: 3. Construct and analyze a linear graph in a Cartesian coordinate system.
a. Use different methods to graph a two-variable linear equation.
b. Interpret the graph.

CAN MATH 110 : Elementary Algebra

Applying and Solving Quadratic and Rational Equations: 4. Construct and solve quadratic equations to model a given application.
a. Apply factoring techniques to solve quadratic equations.
b. Verify that solutions comply with any constraints in the model.

CAN MATH 110 : Elementary Algebra

Systems of Equations: 5. Solve a two by two system of linear equations.
a. Identify the different types of systems and their graphical interpretations.
b. Use different methods to solve a system of two linear equations.

CAN MATH 111 : Elementary Algebra I

Apply and Solve linear Equations: 1. Solve linear algebraic equations and inequalities that model a given application.
a. Translate a statement into an appropriate one-variable linear equation or inequality.
b. Use appropriate strategies to find the solutions.
c. Model and solve word problems whose solutions require formulating one variable linear equations.

Students will demonstrate the ability to use symbolic, graphical, numerical, and written representations of mathematical ideas.

CAN MATH 111 : Elementary Algebra I

Linear Graphs: 2. Construct and analyze a linear graph in a Cartesian coordinate system.
a. Use different methods to graph a two-variable linear equation.
b. Interpret the graph.

CAN MATH 112 : Elementary Algebra II

Simplify Polynomials and Rational Expressions: 1. Simplify polynomials, and rational expressions.
a. Use appropriate techniques to multiply, divide, add, and subtract polynomials and rational expressions.
b. Simplify expressions with integer exponents.

CAN MATH 112 : Elementary Algebra II

Apply and Solve Quadratic and Rational Equations: 2. Construct and solve quadratic and rational equations to model a given application.
a. Apply factoring techniques to solve quadratic equations.
b. Use appropriate methods to solve rational equations.
c. Verify that solutions comply with any constraints in the model.
d. Model and solve word problems whose solutions require formulating one variable quadratic or rational equations.

CAN MATH 112 : Elementary Algebra II

Systems of Equations: 3. Solve a two by two system of linear equations.
a. Identify the different types of systems and their graphical interpretations.
b. Use different methods to solve a system of two linear equations.

CAN MATH 115 : Geometry

Angles and Triangles: Solve problems using the theorems and postulates for angles and triangles

CAN MATH 115 : Geometry

Proof: Complete a two column proof, a proof using inductive reasoning, or a proof by contradiction

CAN MATH 115 : Geometry

Volumes and areas: Calculate the volumes or areas for geometric solids or plan figures

CAN MATH 120 : Intermediate Algebra

Using equations to model: 1: Write and solve linear, quadratic, exponential, and logarithmic equations and inequalities that model a given application.

CAN MATH 120 : Intermediate Algebra

Use and interpret function notation: Use and interpret function notation in algebraic, numerical, verbal, and graphical contexts.

CAN MATH 120 : Intermediate Algebra

Analyze and solve equations: Analyze and solve quadratic, exponential, and logarithmic equations.

Students will demonstrate the ability to use symbolic, graphical, numerical, and written representations of mathematical ideas.

CAN MATH 120 : Intermediate Algebra

Graph and analyze functions: Graph and analyze linear, quadratic, exponential, and logarithmic functions.

CAN MATH 122 : Intermediate Algebra I

Solve Equations: Write and solve linear, exponential, and logarithmic equations and inequalities that model a given application.

CAN MATH 122 : Intermediate Algebra I

Use and interpret function notation: Use and interpret function notation in algebraic, numerical, verbal, and graphical contexts.

CAN MATH 122 : Intermediate Algebra I

Exponential and logarithmic equations: Analyze and solve exponential and logarithmic equations

CAN MATH 122 : Intermediate Algebra I

Graph: Graph and analyze linear, exponential, and logarithmic functions.

CAN MATH 123 : Intermediate Algebra II

Solve equations: Solve rational, radical, and absolute value equations

CAN MATH 123 : Intermediate Algebra II

Simplify expressions: Simplify and perform operations with rational and radical equations

CAN MATH 123 : Intermediate Algebra II

Solve proportion and variation problems: Solve and interpret applications involving proportions and variation

CAN MATH 125 : Elementary Finite Mathematics

Matrices: Solve a system of equations using matrices and row operations

CAN MATH 125 : Elementary Finite Mathematics

Simplex method: Use the simplex method to solve a standard maximization problem

CAN MATH 125 : Elementary Finite Mathematics

Financial: Use the simple interest, compound interest, future value, and present value formulas to solve financial problems

CAN MATH 125 : Elementary Finite Mathematics

Counting: Use counting methods to solve probability problems

CAN MATH 125 : Elementary Finite Mathematics

Probability: Find expected values of a random variable

CAN MATH 130 : Analytical Trigonometry

Six Trig functions: State and apply correctly the various definitions, values for key angles, and basic identities for the six trigonometric functions.

CAN MATH 130 : Analytical Trigonometry

Graphs: Produce and interpret graphs of the six trigonometric functions including transformations

Students will demonstrate the ability to use symbolic, graphical, numerical, and written representations of mathematical ideas.

CAN MATH 130 : Analytical Trigonometry

Trig equations: Use algebra and identities to solve trigonometric equations.

CAN MATH 130 : Analytical Trigonometry

Modeling periodic behavior: Use Trigonometric functions to model periodic behavior.

CAN MATH 130 : Analytical Trigonometry

Solve Triangles: Solve triangles using the definitions of the trigonometric functions, the law of sines, or the law of cosines.

CAN MATH 130 : Analytical Trigonometry

Identities: Use algebra and identities to derive or verify identities.

CAN MATH 140 : Math For Gen Education

problem solving: Apply mathematical principles and techniques to solve problems in areas such as systems of numeration, algebraic modeling, basic trigonometry, probability, statistics, and math of finance.

CAN MATH 140 : Math For Gen Education

Logic: Use critical thinking to arrive at conclusions from Venn Diagrams, syllogistic forms, and truth tables.

CAN MATH 140 : Math For Gen Education

Prabability and Statistics: Demonstrate a knowledge of probability and statistics by solving a variety of counting problems, by calculating the probability of games of chance, and by analyzing statistical data.

CAN MATH 140 : Math For Gen Education

History: Relate a knowledge of the people, history and uses of mathematics through research papers, projects, presentations, and class discussions.

CAN MATH 200 : Elem Probability & Statistics

Terminology: Define statistical terms.

CAN MATH 200 : Elem Probability & Statistics

Central tendency and variation: Compute measures of central tendency and variation

CAN MATH 200 : Elem Probability & Statistics

Plots: Plot histogram, scatter plot, box plot

CAN MATH 200 : Elem Probability & Statistics

Probability: Identify and apply the basic laws of probability such as complements, independence, and the role of probability in statistics

CAN MATH 200 : Elem Probability & Statistics

Hypothesis testing: Given an inferential statistics problem, identify the appropriate hypothesis test, perform the hypothesis test, and interpret the results.

CAN MATH 222 : Pre-Calculus Col Algebra/Trig

recognize functions: Recognize and classify a function from an equation, graph, or table

CAN MATH 222 : Pre-Calculus Col Algebra/Trig

Students will demonstrate the ability to use symbolic, graphical, numerical, and written representations of mathematical ideas.

CAN MATH 222 : Pre-Calculus Col Algebra/Trig

transformations: Identify and apply transformations to functions and graphs, including vertical and horizontal shifts, reflections, and scaling.

CAN MATH 222 : Pre-Calculus Col Algebra/Trig

polynomial and rational functions: Describe the short run and long run behavior of polynomial and rational functions.

CAN MATH 241 : Applied Calculus I

Functions and notations: State and apply correctly the definitions of a function, the domain, and the range for equations, tables, or graphs representing polynomial, rational, piecewise defined, exponential, and logarithmic functions

CAN MATH 241 : Applied Calculus I

Derivatives: Find and interpret the derivatives of polynomial, rational, piecewise defined, exponential, and logarithmic functions including those requiring the product, quotient, and chain rules

CAN MATH 241 : Applied Calculus I

Extrema and optimization: Find and apply relative extema, absolute extrema, and points of inflection.

CAN MATH 241 : Applied Calculus I

Related Rates: Solve related rates problems

CAN MATH 241 : Applied Calculus I

Antiderivatives: Find and apply the antiderivative of a function

CAN MATH 241 : Applied Calculus I

Integrals: Evaluate and apply definite integrals

CAN MATH 242 : Applied Calculus II

Techniques of integration: Apply the techniques of substitution, integration by parts, and integration tables to evaluate integrals

CAN MATH 242 : Applied Calculus II

Numerical methods of integration: Use a graphing calculator and numerical methods (left hand sum, right hand sum, midpoint rule, trapezoid rule, and Simpson?s rule) to approximate integrals.

CAN MATH 242 : Applied Calculus II

Partial Derivatives: Find and Interpret partial derivatives

CAN MATH 242 : Applied Calculus II

Optimization: Use the second derivative test for 2 variables and Lagrange multipliers to optimize functions of 2 or more variables.

CAN MATH 242 : Applied Calculus II

Calculus with Trig functions: Evaluate and apply the derivatives and integrals involving the sine and cosine functions.

CAN MATH 242 : Applied Calculus II

Differential Equations: Solve separable and first order linear differential equations

Students will demonstrate the ability to use symbolic, graphical, numerical, and written representations of mathematical ideas.

CAN MATH 251 : Calculus/Analytic Geometry I

define/interprete derivatives: Interpret derivatives of functions from a numerical, graphical, and symbolic point of view.

CAN MATH 251 : Calculus/Analytic Geometry I

compute derivatives: Compute derivatives numerically, graphically, and symbolically for explicitly defined functions.

CAN MATH 251 : Calculus/Analytic Geometry I

apply derivatives: Apply derivatives to related rates and optimization problems.

CAN MATH 252 : Calculus/Analytic Geometry II

integrals: Relate Integrals to anti-derivatives, limits of the Riemann sums, and areas under a curve.

CAN MATH 252 : Calculus/Analytic Geometry II

integration techniques: Use different techniques of integration to evaluate indefinite and definite integrals

CAN MATH 252 : Calculus/Analytic Geometry II

convegence of improper integrals: Analyze the convergence of improper integrals and evaluate them where possible.

CAN MATH 252 : Calculus/Analytic Geometry II

convegence of series: Analyze the convergence of series evaluate them where possible.

CAN MATH 253 : Calculus/Analytic Geometry III

partial derivatives: Compute derivatives of multivariable functions and apply to geometry and optimization problems.

CAN MATH 253 : Calculus/Analytic Geometry III

vectors-valued functions: Model motion using vectors valued functions.

CAN MATH 253 : Calculus/Analytic Geometry III

integrals: Identify and compute the different types of integrals.

CAN MATH 253 : Calculus/Analytic Geometry III

ftoc: Recognize and apply the fundamental theorem of calculus.

CAN MATH 270 : Linear Algebra

vectors: Correctly use vectors to solve a problem.

CAN MATH 270 : Linear Algebra

systems via matrices: Correctly solve a system of equations using matrices and Gaussian elimination.

CAN MATH 270 : Linear Algebra

eigenvectors and eigenvalues: Correctly find the eigenvectors and eigenvalues of a matrix.

Students will demonstrate the ability to use symbolic, graphical, numerical, and written representations of mathematical ideas.

CAN MATH 275 : Ordinary Differential Equation

Classify Differential Equations: Correctly classify differential equations by degree (first-order, second-order, ...), linear or nonlinear, ordinary or partial, homogeneous or driven.

CAN MATH 275 : Ordinary Differential Equation

Develop Models: Correctly develop a differential equation to model a particular situation.

CAN MATH 275 : Ordinary Differential Equation

Validate Solutions: Correctly determine whether a given function is a solution to a differential equation.

CAN MATH 275 : Ordinary Differential Equation

Direction Fields: Correctly use a direction field to describe the behavior of the solution to a first-order differential equation given an initial condition.

CAN MATH 275 : Ordinary Differential Equation

Solve Differential Equations: Correctly determine whether a solution to a differential equation exists and whether or not it is unique.

CAN MATH 275 : Ordinary Differential Equation

Initial value problems: Use standard methods (integrating factors, undetermined coefficients, variation of parameters, Laplace Transforms, numerical methods, power series) to find a solution to an initial-value problem.

CAN MATH 811 : Pre-Algebra

operations: Simplify numeric expressions using mathematical operations using order of operations.

CAN MATH 811 : Pre-Algebra

fractions: Simplify numeric expressions involving fractions.

CAN MATH 811 : Pre-Algebra

proportions: Set up and solve proportion problems.

CAN MATH 811 : Pre-Algebra

percentages: Solve problems involving percentages.

CAN MATH 811 : Pre-Algebra

signed numbers: Perform mathematical operations using signed numbers.

CAN MATH 811 : Pre-Algebra

word problem: Translate verbal expressions into math and solve.

CAN MATH 818: Basic Mathematics for Health Science

arithmetic: Perform basic mathematical operation on whole numbers, fractions, and decimals.

CAN MATH 818: Basic Mathematics for Health Science

percent: Set up and solve a proportions and percent problem.

Students will demonstrate the ability to use symbolic, graphical, numerical, and written representations of mathematical ideas.

CAN MATH 818: Basic Mathematics for Health Science

units: Perform unit conversions

CAN MATH 818: Basic Mathematics for Health Science

stats: Compute basic descriptive statistics: Mean, Standard Deviation, and Coefficient of Variation