Wyoming Department of Education Required Virtual Education Course Syllabus

Niobrara County School District # 1

Program Name	Wyoming Virtual Academy	Content Area	MA
Course ID	D-MTH-433BV2-AVT	Grade Level	9-12
Course Name	Summit Calculus-Semester 2	# of Credits	0.5
SCED Code	02121E0.5022	Curriculum Type	K12 Inc

COURSE DESCRIPTION

Generally offered second semester. This course provides a comprehensive survey of differential and integral calculus concepts, including limits, derivative and integral computation, linearization, Riemann sums, the fundamental theorem of calculus, and differential equations. Content is presented in 10 units and covers various applications, including graph analysis, linear motion, average value, area, volume, and growth and decay models. In this course students use an online textbook, which supplements the instruction they receive and provides additional opportunities to practice using the content they've learned. Students will use an embedded graphing calculator applet (GCalc) for their work on this course; the software for the applet can be downloaded at no charge.

WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD #	BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
F.BF.1a	Factor a quadratic expression to reveal the zeros of the function it defines.*
N.Q.1a	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.*

SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Antidifferentiation- 7.01 Antiderivatives and Indefinite Integrals Quiz		Understand the concepts of the antiderivative and indefinite integral. Find the antiderivative of a variety of functions using integration rules. Create and use slope fields for a given differential equation. Solve initial value problems.
Antidifferentiation- 7.02 Writing Assignment: Slope Fields		Understand the concepts of the antiderivative and indefinite integral. Find the antiderivative of a variety of functions using integration rules. Create and use slope fields for a given differential equation. Solve initial value problems.

Antidifferentiation- 7.02 Slope Fields Quiz		Understand the concepts of the antiderivative and indefinite integral. Find the antiderivative of a variety of functions using integration rules. Create and use slope fields for a given differential equation. Solve initial value problems.
Antidifferentiation- 7.03 Basic Computation Rules Quiz		Understand the concepts of the antiderivative and indefinite integral. Find the antiderivative of a variety of functions using integration rules. Create and use slope fields for a given differential equation. Solve initial value problems.
Antidifferentiation- 7.04 Writing Assignment: Substitution Rule		Understand the concepts of the antiderivative and indefinite integral. Find the antiderivative of a variety of functions using integration rules. Create and use slope fields for a given differential equation. Solve initial value problems.
Antidifferentiation- 7.04 Substitution Rule Quiz		Understand the concepts of the antiderivative and indefinite integral. Find the antiderivative of a variety of functions using integration rules. Create and use slope fields for a given differential equation. Solve initial value problems.
Antidifferentiation- 7.05 Writing Assignment: Initial Value Problems		Understand the concepts of the antiderivative and indefinite integral. Find the antiderivative of a variety of functions using integration rules. Create and use slope fields for a given differential equation. Solve initial value problems.
Antidifferentiation- 7.05 Initial Value Problems Quiz		Understand the concepts of the antiderivative and indefinite integral. Find the antiderivative of a variety of functions using integration rules. Create and use slope fields for a given differential equation. Solve initial value problems.
Antidifferentiation- 7.06 Antidifferentiation Unit Exam	N.Q.1a, F.BF.1a	Understand the concepts of the antiderivative and indefinite integral.

		Find the antiderivative of a variety of functions using integration rules. Create and use slope fields for a given differential equation. Solve initial value problems.
The Definite Integral- 8.01 Area and Riemann Sums Quiz		Understand the relationship between area and Riemann sums Approximate definite integrals Evaluate definite integrals Understand and use the Fundamental Theorem of Calculus
The Definite Integral- 8.02 Writing Assignment: Approximation Methods		Understand the relationship between area and Riemann sums Approximate definite integrals Evaluate definite integrals Understand and use the Fundamental Theorem of Calculus
The Definite Integral- 8.02 Approximation Methods Quiz		Understand the relationship between area and Riemann sums Approximate definite integrals Evaluate definite integrals Understand and use the Fundamental Theorem of Calculus
The Definite Integral- 8.03 Fundamental Theorem of Calculus, Part 1 Quiz		Understand the relationship between area and Riemann sums Approximate definite integrals Evaluate definite integrals Understand and use the Fundamental Theorem of Calculus
The Definite Integral- 8.04 Writing Assignment: Computation of Definite Integrals		Understand the relationship between area and Riemann sums Approximate definite integrals Evaluate definite integrals Understand and use the Fundamental Theorem of Calculus
The Definite Integral- 8.04 Computation of Definite Integrals Quiz		Understand the relationship between area and Riemann sums Approximate definite integrals Evaluate definite integrals Understand and use the Fundamental Theorem of Calculus
The Definite Integral- 8.05 Writing Assignment: Fundamental Theorem of Calculus, Part 2		Understand the relationship between area and Riemann sums Approximate definite integrals Evaluate definite integrals Understand and use the Fundamental Theorem of Calculus
The Definite Integral- 8.05 Fundamental Theorem of Calculus, Part 2 Quiz		Understand the relationship between area and Riemann sums Approximate definite integrals Evaluate definite integrals

		Understand and use the Fundamental Theorem of Calculus
The Definite Integral- 8.06 The Definite Integral Unit Exam	N.Q.1a, F.BF.1a	Understand the relationship between area and Riemann sums Approximate definite integrals Evaluate definite integrals Understand and use the Fundamental Theorem of Calculus
Integral Applications- 9.01 Writing Assignment: Total Change		Use integrals to find the total change in a quantity. Calculate the average value of a function. Use integral functions to define position. Calculate the displacement and distance traveled of an object.
Integral Applications- 9.01 Total Change Quiz		Use integrals to find the total change in a quantity. Calculate the average value of a function. Use integral functions to define position. Calculate the displacement and distance traveled of an object.
Integral Applications- 9.02 Writing Assignment: Average Value of a Function		Use integrals to find the total change in a quantity. Calculate the average value of a function. Use integral functions to define position. Calculate the displacement and distance traveled of an object.
Integral Applications- 9.02 Average Value of a Function Quiz		Use integrals to find the total change in a quantity. Calculate the average value of a function. Use integral functions to define position. Calculate the displacement and distance traveled of an object.
Integral Applications- 9.03 Writing Assignment: Motion Along a Line Revisited		Use integrals to find the total change in a quantity. Calculate the average value of a function. Use integral functions to define position. Calculate the displacement and distance traveled of an object.

Integral Applications- 9.03 Motion Along a Line Revisited Quiz		Use integrals to find the total change in a quantity. Calculate the average value of a function. Use integral functions to define position. Calculate the displacement and distance traveled of an object.
Integral Applications- 9.04 Integral Applications Unit Exam		Use integrals to find the total change in a quantity. Calculate the average value of a function. Use integral functions to define position. Calculate the displacement and distance traveled of an object.
Area and Volume- 10.01 Writing Assignment: Area Between Two Curves	N.Q.1a, F.BF.1a	Find the area bounded between two curves. Calculate the volume of a solid with defined cross-sections. Find the volume of a solid generated by revolving a region about an axis.
Area and Volume- 10.01 Area Between Two Curves Quiz		Find the area bounded between two curves.Calculate the volume of a solid with defined cross-sections.Find the volume of a solid generated by revolving a region about an axis.
Area and Volume- 10.02 Writing Assignment: Volume of Solids Using Cross Sections		Find the area bounded between two curves. Calculate the volume of a solid with defined cross-sections. Find the volume of a solid generated by revolving a region about an axis.
Area and Volume- 10.02 Volume of Solids Using Cross Sections Quiz		Find the area bounded between two curves. Calculate the volume of a solid with defined cross-sections. Find the volume of a solid generated by revolving a region about an axis.
Area and Volume- 10.03 Writing Assignment: Volume of Solids of Revolution		Find the area bounded between two curves. Calculate the volume of a solid with defined cross-sections. Find the volume of a solid generated by revolving a region about an axis.

Area and Volume- 10.03 Volume of Solids of Revolution Quiz		Find the area bounded between two curves. Calculate the volume of a solid with defined cross-sections. Find the volume of a solid generated by revolving a region about an axis.
Area and Volume- 10.04 Area and Volume Unit Exam	N.Q.1a, F.BF.1a	Find the area bounded between two curves. Calculate the volume of a solid with defined cross-sections. Find the volume of a solid generated by revolving a region about an axis.
Differential Equations and Their Applications- 11.01 Writing Assignment: Separable Differential Equations		Recognize and solve separable differential equations. Model and solve problems using differential equations, including those involving exponential growth and decay.
Differential Equations and Their Applications- 11.01 Separable Differential Equations Quiz		Recognize and solve separable differential equations. Model and solve problems using differential equations, including those involving exponential growth and decay.
Differential Equations and Their Applications- 11.02 Writing Assignment: Modeling Using Differential Equations		Recognize and solve separable differential equations. Model and solve problems using differential equations, including those involving exponential growth and decay.
Differential Equations and Their Applications- 11.02 Modeling Using Differential Equations Quiz		Recognize and solve separable differential equations. Model and solve problems using differential equations, including those involving exponential growth and decay.
Differential Equations and Their Applications- 11.03 Writing Assignment: Growth and Decay Models		Recognize and solve separable differential equations. Model and solve problems using differential equations, including those involving exponential growth and decay.
Differential Equations and Their Applications- 11.03 Growth and Decay Models Quiz		Recognize and solve separable differential equations. Model and solve problems using differential equations, including those involving exponential growth and decay.

Differential Equations and Their Applications- 11.04 Differential Equations and Their Applications Unit Exam		Recognize and solve separable differential equations. Model and solve problems using differential equations, including those involving exponential growth and decay.
- 12.00 Semester 2 Exam		