

Sweet Home School District New Course/Program Proposal

Course/Program Name: College Mathematics, Erie Community College Course MT 125
Year: 2022-23

I. Description of Program/Course: Include a summary of content/skills to be taught including major topics/concepts as well as an instructional timeframe (ie. How long does the course/program run). Attach a separate sheet if necessary.

Timeframe:

Full year course

Summary:

- Introductory course from a 2-part college sequence that prepares students for an introductory or survey level of calculus.
- Basic algebra skills are reviewed and extended.
- Functions, in general, and their inverses are studied along with the properties, graphs and transformations of linear, quadratic, absolute value, radical, rational, logarithmic and exponential functions.
- Equations of the above functions as well as linear systems of equations and linear and absolute value inequalities are solved.
- Related application problems are incorporated throughout.

II. Rationale: What needs does this course/program fulfill? How does this course connect to other courses? How does it reflect the mission and vision of the School District?

Fulfills: This course fulfills a 4th year mathematics course for high school seniors seeking more experience with college level mathematics topics.

School district vision: This course provides the opportunity for Seniors to earn college credit in an introductory college level mathematics course through a local college. It also provides students an additional mathematics class option for their 4th year in high school.

III. Standards Reference: What New York State Standards and Key Ideas will be addressed by this course/program?

Topic N: Number and Quantity

Subtopic N.RN: Real Number System

Subtopic N.CN: Complex Number System

Topic A: Algebra

Subtopic A.SSE: Structure in Expressions

Subtopic A.APR: Arithmetic with Polynomials and Rational Expressions

Subtopic A.CED: Creating Equations that describe numbers or

relationships Subtopic A.REI: Reasoning with Equations and Inequalities

Topic F: Functions

Subtopic F.IF: Interpreting Functions

Subtopic F.BF: Building Functions

Subtopic F.LE: Linear, Quadratic, Exponential Functions

IV. Course Overview/ Overarching Understandings/Essential Questions

Enduring Understandings/ Big Ideas	Essential Questions
apply the concepts of the real number system and the properties of real numbers	What are the real numbers?
simplify and perform the fundamental operations (addition, subtraction, multiplication, and division) on real numbers, polynomials, and radical expressions; and simplify complex fractions	How do you perform basic operations on polynomials and radical expressions?
solve linear, quadratic, (including imaginary roots), absolute value, radical, exponential and logarithmic equations; solve linear and absolute value inequalities: interpret, set up and solve problems involving direct, inverse and joint variation	How do you solve equations using algebra and/or graphing?
define function and determine whether a given relation is a function; evaluate a given function, use function notation, perform operations on functions, and the composition of functions; ascertain when a function has an inverse and be able to compute the inverse when it exists	What is a function?

graph, interpret the graph of functions and transformation of functions-including linear, absolute value, quadratic, cubic, radical, simple rational, exponential and logarithmic	What do the different types of graphs of functions look like?
solve systems of equations in two (2) and three (3) variables	How do you solve a system of equations algebraically and graphically?
interpret and apply the properties of exponential and logarithmic functions	How are exponential and logarithmic functions related?
solve word problems that involve the use of linear, quadratic, exponential and logarithmic functions and systems of linear equations.	What are the properties of exponential and logarithmic functions?
	How do you apply your algebraic knowledge to real world problems?

V. Course Overview/ Assessment: Outline anticipated assessment strategies/instruments to be used.

Assessment:

- Daily checks as one or two questions to encourage staying up to date
- Weekly checks as quizzes to assess short term understandings
- Bi Weekly checks as open notes quizzes to encourage interpreting notes
- Groups assessments to encourage discussions
- Individual assessments to assess long term understandings and the ability to integrate the topics together

Technology used:

- Ipad
- TI-84 plus calculator
- Schoology platform
- Think Tech teaching and learning tool
- more as needed

**VI. Resources: What Resources are anticipated to begin/maintain the course/program?
Will the implementation of the course demand additional resources?**

Area	Start-Up (Year 1)	Maintenance
Staffing	1 Teacher to begin the course in year 1	Department Planning with Algebra 2 and Pre-calculus teachers
Instructional Supplies/ Curriculum Development	Work with ECC for supplies and curriculum and technology recommendations	Meet with ECC professors during the school year, every year

VII. Rigor: How will this course/program provide a rigorous learning experience suitable for the target student sample?

This course is rigorous due to the fact that it is a college level course for college credit. The teacher at Sweet Home will work with the professors at the college to create the high school course curriculum.

The culmination of the course provides a college level exam for college credit.

VIII. Other Considerations: What considerations have been made to issues related to course content/delivery that might require a balanced approach or instructional sensitivity?

In addition to the main course's materials and assignments and resources, the Schoology platform allows for extra review folders or privately assigned student folders in order to provide encouragement and enrichment instruction via practice activities (Think Tech is excellent for this), videos, or documents. Also, extra time to meet during or after the school day will be provided.

IX. Implementation Plan: When Is This Course Scheduled To Begin? When/How Often Will It Be Offered?

Begin: September 2022

Offered: Every school year

Course Proposed By: Mathematics Department 2021-22

Reviewed By:

BLT Representative Melissa Skurzewski

Principal Antonio Perry

Date _____

Teacher Mary Jo Giufre

Office of Instruction _____

Date _____

Teacher _____ Teacher

_____ Date Submitted:
