NC 269: NINTH GRADE MATHEMATICS

Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2021
Credits:	0
Total Contact Hours:	80
Lecture Hours :	80
Lab Hours:	0
Hours Arranged:	0
Outside of Class Hours:	160
Transferable to CSU:	No
Transferable to UC:	No
Grading Method:	Non-Credit Course

Catalog Course Description

This is a four-week enrichment course designed to give students a strong foundation for grade nine and future mathematics courses. It reinforces and broadens the mathematics that students learned in previous grades. Students will explore topics such as the foundations of Algebra, solve equations and inequalities, an introduction to functions, contrast linear and exponential functions with each other, systems of equations and inequalities, exponents, polynomials and factoring, quadratic functions/ equations, radical expressions/equations, and apply linear models to data analysis and probability. Common Core standards are presented and reinforced as the student learns how to apply and relate the concepts in real-life situations. 80 lecture hours.

Course Objectives

- Extend the properties to rational exponents.
- Use properties of rational and irrational numbers.
- Reason quantitatively and use units to solve problems.
- Interpret the structure of expressions.
- Write expressions in equivalent forms to solve problems.
- Perform arithmetic operations on polynomials.
- Create equations that describe numbers or relationship.
- Understand solving equations as a process of reasoning and explain the reasoning.
- Solve equations and inequalities in one variable.
- Solve system of equations by graphing, substitution, and elimination methods.
- Represent and solve equations and inequalities graphically.
- Understand the concept of a function and use function notation.
- Interpret functions that arise in applications in terms of context.
- Analyze functions using different representations.
- Build a function that models a relationship between two quantities.
- Build new functions from existing functions.
- Construct and compare linear, quadratic, and exponential models and solve problems.
- Interpret expressions for functions in terms of the situation they model.
- Interpret linear models.\\n
- Summarize, represent, and interpret data on a single count measurement variable.

Major Course Content

1. Real Number System
2. Quantities
3. Expressions and Functions
4. Arithmetic with Polynomials and Rational Expressions
5. Creating Equations
6. Reasoning with Equations and Inequalities
7. Interpreting Functions
8. Building Functions
9. Linear, Quadratic, and Exponential Models
10. Interpreting Categorical and Quantitative Data

Suggested Reading Other Than Required Textbook

1. The Number Devil by Hans Magnus Enzensburger 2. The Math Curse by Jon Scieszka 3. The Anathem by Neal Stephenson

Examples of Required Writing Assignments

1. How are the independent and dependent variables different? 2. Compare and contrast linear and nonlinear functions. 3. Explain how to write an equation given the slope and the y-intercept.

Examples of Outside Assignments

How can you use areas and perimeters in real life?

Instruction Type(s)

Lecture, Online Education Lecture