Subject:	MATH
Course Number:	500
Descriptive Title:	Math Essentials I: Arithmetic: Integers, Fractions, and Decimals
Division:	Mathematical Sciences
Department:	Mathematics
Course Disciplines:	Mathematics
Catalog Description:	This introductory noncredit arithmetic course is designed to develop number and operation sense using whole numbers, fractions, decimals, and percent, as well as develop problem-solving skills. Topics include writing whole numbers and decimals in various forms, estimation, ratios, proportions, and applications.
Prerequisite:	
Co-requisite:	
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	.22
Hours Laboratory (per week):	0
Outside Study Hours:	8
Total Course Hours:	4
Course Units:	0
Grading Method:	Pass/No Pass/SP
Credit Status:	Noncredit
Transfer CSU:	No
Effective Date:	
Transfer UC:	No
Effective Date:	
General Education ECC:	
Term:	
Other:	
CSU GE:	
Term:	
Other:	
IGETC:	
Term:	
Other:	

Student Learning Outcomes:	Upon completion of this course, students will be able to: 1. recognize addition, subtraction, multiplication, division, exponentiation, factoring and order of operations in a given context (word problem, data, diagram, etc.) involving non-negative real numbers to write corresponding mathematical expressions and solve authentic, real-world application problems. 2. use numerical and symbolic representations to correctly perform operations (addition, subtraction, multiplication, division, exponentiation, factoring, and order of operations) on non-negative real numbers to simplify expressions. 3. use visual and graphical methods to represent and analyze information and to solve problems using non negative real numbers, including demonstrating correct ordering of values and testing reasonableness of solutions. 4. articulate (orally and/or in written form) the mathematical reasoning they used to solve a problem or analyze a situation.
Course Objectives:	1. Read and write whole numbers and decimal numbers in standard, expanded, and written form. 2. Order a given set of numbers. 3. Use the order of operations to add, subtract, multiply and exponentiate whole numbers, fractions and decimals. 4. Use rounding techniques to estimate results of operations on whole numbers, fractions and decimals. 5. Use divisibility tests and prime factorization to reduce fractions to lowest terms and perform operations on fractions. 6. Convert rational numbers into decimals, fractions and percentages. 7. Solve various application problems requiring the use of ratios, proportions, and percentages.
Major Topics:	I. Simplifying, operations, and applications II. Scientific notation III. Relative size of numbers IV. Percent
Total Lecture Hours:	4
Total Laboratory Hours:	0
Total Hours:	4
Primary Method of Evaluation:	2) Problem solving demonstrations (computational or non-computational)

Typical Assignment Using Primary Method of Evaluation:	Place the following numbers in order from the smallest to largest: 0.4, 1/2, 55/100, 0.49, 43% Then, write a sentence or two justifying your final ordering.
Critical Thinking Assignment 1:	Gold jewelry comes in various colors. Three typical colors are yellow, rose and white. Use the table at the right (not included here, the table shows the composition of gold, copper, silver, palladium, nickel and zinc needed to produce each of these three colors) to figure out how many grams of each element is needed to produce 10 grams of gold of each of the three colors.
Critical Thinking Assignment 2:	Ratios can be extended to include more than two numbers. For instance, the ratio of the sides of the right triangle in the diagram below (not included here, but the length of the hypotenuse is labeled H=5 and the lengths of the other sides are labeled A=3 and B=4) can be written as 3:4:5, where the length of the side of the triangle across from the right angle is 5 units, and the lengths of the other two sides are 3 units and 4 units. The triple ratio for any right triangle, A:B:H has the additional property that A2+B2=H2. (a) Find all possible triple ratios for right triangles, where the lengths of each side of the triangle is a whole numbers and the length of one of the sides is 5 (the side does not need to be the hypotenuse). (b) Find all possible triple ratios for right triangles, where the lengths of each side of the triangle is a whole numbers and the length of one of the sides is 7 (the side does not need to be the hypotenuse).
Other Evaluation Methods:	Homework Problems, Objective Exam, Quizzes
If Other:	
Instructional Methods:	Demonstration, Discussion, Group Activities, Lecture, Multimedia presentations
If other:	
Work Outside of Class:	Answer questions, Problem solving activity, Skill practice, Study
If Other:	
Up-To-Date Representative Texts:	Teacher-generated materials
Alternative Texts:	
Required Supplementary Readings:	
Other Required Materials:	
Requisite	
Category	
Requisite course:	
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	

Requisite Skill:	
Requisite Skill and Matching skill(s): Bold the requisite skill(s). if applicable	
Requisite course:	
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Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Matthew Kline
Date:	04/29/2024
Original Board Approval Date:	04/28/2025
Effective Term:	FA 2026