Subject:	MATH
Course Number:	503
Descriptive Title:	Math Essentials for STEM: Rational Expressions
Division:	Mathematical Sciences
Department:	Mathematics
Course Disciplines:	Mathematics
Catalog Description:	This noncredit course introduces how to simplify rational expressions. This course bridges the topic of factoring to conducting operations with rational expressions, such as multiplication, division, addition and subtraction. This course then transitions into characteristics of basic rational functions along with their graphs.
Prerequisite:	
Co-requisite:	
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	.22
Hours Laboratory (per week):	0
Outside Study Hours:	.44
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. understand and practice factoring to simplify and perform operations of rational expressions. 2. apply and use rational expressions to and functions to solve real-life problems. 3. articulate (orally and/or in written form) the mathematical reasoning they used to express a reasonable solution of a rational function.
Course Objectives:	1. Simplify rational expressions by factoring. 2. Perform multiplication and division on rational expressions. 3. Perform addition and subtraction on rational expressions with like and unlike denominators. 4. Simplify complex rational expressions. 5. Apply rational expressions to real-life problems. 6. Graph basic rational functions.
Major Topics:	I. Simipifying rational expressions II. Operations A. Add and subtract B. Multiply C. Divide III. Domain, graph, and asymptotes
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:	Simplify: x−1/x^2-4 - 1/x-2
Critical Thinking Assignment 1:	How do you explain rational expressions? Why do we need to factor rational expressions before simplifying?
Critical Thinking Assignment 2:	Simplify the complex fraction. For which values of x is the expression undefined? x^2-4/x^2+x-2/x^2-2x/9x-9
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	
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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