NEW COURSE PROPOSAL (MATH 53)

Course Title:	Essential Topics from Algebra
Number of Units:	2 units
Proposed Effective Term:	Fall 2018
Maximum Class Size:	36
Method of Instruction:	Lecture
Grading Method:	Letter Grade Only
Co-requisite:	Intermediate Algebra or Transfer-Level Math Course

Catalog Description: This course is intended to be paired with a corresponding math lecture section. Just-in-time support will focus on essential algebra prerequisite skills needed for success in the co-requisite course. Appropriate for STEM majors who are concurrently enrolled in Intermediate Algebra (Math 71) or a transfer-level math course. Algebra review topics include real numbers and their properties, simplifying algebraic expressions, simplifying integer and rational exponents, solving a variety of equations, graphing techniques, writing equations of lines, introduction to functions and relations, complex fractions, simplifying polynomial, rational, and radical expressions, expanding binomials, and applications.

Class Schedule Description: A support course designed to supplement algebra topics needed for success in the paired class.

Course Measurable Objectives (minimum of five):

1. Use integer exponent rules and rational exponents to simplify expressions.
2. Write equations of lines given specific information about the line.
3. Simplify and perform operations on polynomial, rational, and radical expressions.
4. Solve a variety of equations and inequalities in one variable.
5. Solve equations with more than one variable for an indicated variable.
6. Construct, interpret, and analyze graphs.
7. Demonstrate understanding of functions, function notation, and relations.
8. Expand binomials.
9. Communicate effectively in mathematical language.
10. Improve in overall mathematical understanding and ability in paired lecture course.

Course Outline:	Content will align with the prerequisite algebra topics of the paired lecture course.
Representative Text:	Only required for CSU transferable courses. [same text as paired course]

Sample Assignments:

1. Simplify. $\left(\frac{-2x^4y^{-2}}{x^{-1}y^3}\right)^{-4}$

2. Simplify. $10\sqrt[3]{4m^7} - 3m\sqrt[3]{32m^4}$

3. Expand. $(2a-b)^4$

4. Use the function $f(x)=2x^2-x+3$ to find $f(a-2)$

5. Solve for x. $\frac{x}{x-2}+\frac{8}{x^2-4}=\frac{x}{x+2}$

6. Solve for x. $\sqrt{2x+1}=x-7$

7. The function $F(x)=\frac{250x}{100-x}$ models the cost, $F(x)$, in millions of dollars, to remove $x\%$ of a river's pollutants. If the government commits $750 million for this project, what percentage of pollutants can be removed from the river?

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