

## Math 125 Lab Component

COURSE CONTENT AND SCOPE - <b>Lab:</b> Outline the topics included in the lecture portion of the course ( <i>Outline reflects course description, all topics covered in class.</i> )	Hours Per Topic	COURSE OBJECTIVES – <b>Lab:</b> Upon successful completion of this course, the student will be able to...(Use action verbs – see <a href="#">Bloom's Taxonomy</a> for 'action verbs requiring cognitive outcomes.')
Foundations of algebra: Number sets and the structure of algebra, fractions, and adding and subtracting real numbers. Properties of real numbers, multiplying and dividing real numbers, exponents, roots, and order of operations. Translating word phrases to expressions and evaluating and rewriting expressions.	3	Understand the foundations of algebra, apply the basic operations of arithmetic to real numbers using the order of operations, translate word phrases into expressions, evaluate, and rewrite expressions.
Solving linear equations and inequalities: Equations, formulas, and the problem-solving process. The addition principle, the multiplication principle, and applying the principles to formulas. Translating word sentences to equations and solving linear inequalities.	4	Solve linear equations and inequalities using the addition and multiplication principles, apply those principles to formulas, translate word sentences to equations.
Problem solving: Ratios and proportions, percents, problems with two or more unknowns, rates, investment, and mixture.	3	Solve problems involving ratios and proportions, percents, two unknowns, rates, investments, or mixtures.
Graphing linear equations and inequalities: The rectangular coordinate system, graphing linear equations, graphing using intercepts, slope-intercept form, point-slope form, and graphing linear inequalities.	5	Graph linear equations and inequalities, understand the rectangular coordinate system, graph linear equations using intercepts, graph linear equations given in slope-intercept form, graph linear equations given in point-slope form, graph linear inequalities.
Systems of equations in two variables: Solving systems of linear equations graphically, solving systems of linear equations by substitution, and solving systems of linear equations by elimination.	4	Solve systems of equations in two variables graphically, by the substitution method, or by the elimination method.
Polynomials: Exponents and scientific notation, introduction to polynomials, adding and subtracting polynomials, exponent rules and multiplying monomials, multiplying polynomials. Special products, exponent rules, and dividing polynomials.	5	Understand exponents and scientific notation, understand what a polynomial is, add, subtract, multiply and divide polynomials, recognize special products.
Factoring: Greatest common factor and factoring by grouping. Factoring trinomials of the form $x^2 + bx + c$ , factoring trinomials of the form $ax^2 + bx + c$ , where $a$ is not 1, factoring special products, strategies for factoring, solving quadratic equations by factoring, radical expressions, simplifying radicals, and solving quadratic equations using the quadratic formula.	6	Find the greatest common factor, factor by grouping, factor trinomials, factor special products, learn strategies for factoring, solve quadratic equations by factoring, work with radical expressions, solve quadratic equations using the quadratic formula.
Rational expressions and equations: Simplifying rational expressions, multiplying and dividing rational expressions, adding and subtracting rational expressions with the same denominator, adding and subtracting rational expressions with different denominators, complex rational expressions, solving equations containing rational expressions, and applications with rational expressions.	6	Simplify rational expressions, multiply, divide, add and subtract rational expressions, simplify complex rational expressions, solve equations involving rational expressions, use rational expressions in applications.