

Math 125 Course Content and Objectives

| | Hours Per Topic | _____ |
|---|-----------------------|---|
| <p>Review of expressions.</p> <p>Review of solving linear equations.</p> <p>Review of graphing linear equations.</p> <p>Review of polynomials.</p> <p>Review of factoring.</p> | 7 | <p>Evaluate an expression. Apply the distributive property. Combine like terms. Verify solutions to equations.</p> <p>Solve linear equations using the addition principle. Solve linear equations using the multiplication principle. Solve equations using both the addition and multiplication principles. Plot points in the coordinate plane. Find solutions for equations in two unknowns.</p> <p>Graph linear equations by plotting solutions. Graph linear equations using intercepts. Graph vertical and horizontal lines.</p> <p>Add and subtract polynomials. Multiply polynomials. Divide polynomials. Write a polynomial as a product of a monomial greatest common factor (GCF) and a polynomial.</p> <p>Factor by grouping. Factor trinomials of the form $x^2 + bx + c$. Factor trinomials of the form $ax^2 + bx + c$, where a is not equal to 1. Factor special products.</p> |
| <p>Functions and graphs.</p> <p>Introduction to functions, function notation, and function operations.</p> | 9 | <p>Identify the domain and range of a relation and determine if the relation is a function. Identify functions and their domain and range. Find the value of a function. Graph linear functions.</p> <p>Add or subtract functions, multiply functions, and divide functions.</p> |
| <p>Systems of linear equations and problem solving.</p> <p>Review of solving systems of linear equations in two variables graphically.</p> <p>Review of solving systems of linear equations in two variables by substitution.</p> | 11 | <p>Determine if an ordered pair is a solution for a system of equations. Solve a system of linear equations graphically. Classify systems of linear equations in two unknowns.</p> <p>Solve systems of linear equations using substitution. Solve applications involving two unknowns using a system of equations.</p> <p>Solve systems of linear equations using elimination. Solve applications using elimination.</p> |

| | | |
|---|-----------|---|
| <p>Radical equations and problem solving.</p> <p>Complex numbers.</p> | | <p>difference with a square root term. Rationalize numerators.</p> <p>Use the power rule to solve radical equations.</p> <p>Write imaginary numbers using i. Perform arithmetic operations with complex numbers. Raise i to powers.</p> |
| <p>Quadratic functions and equations. Completing the square.</p> <p>Solving quadratic equations using the quadratic formula.</p> <p>Solving equations that are quadratic in form.</p> <p>Graphing quadratic equations.</p> <p>Solving nonlinear inequalities.</p> | <p>13</p> | <p>Use the square root principle to solve quadratic equations. Solve quadratic equations by completing the square.</p> <p>Solve quadratic equations using the quadratic formula. Use the discriminant to determine the number of real solutions that a quadratic equation will have. Find the x- and y- intercepts of a quadratic function. Solve applications using the quadratic formula.</p> <p>Solve equations by rewriting them in quadratic form. Solve equations that are quadratic in form by using substitution. Solve applications problems using equations that are quadratic in form.</p> <p>Graph quadratic functions of the form $f(x) = ax^2$. Graph quadratic functions of the form $f(x) = ax^2 + k$. Graph quadratic functions of the form $f(x) = a(x-h)^2$. Graph quadratic functions of the form $f(x) = a(x-h)^2 + k$. Graph quadratic functions of the form $f(x) = ax^2 + bx + c$. Solve applications involving parabolas.</p> <p>Solve quadratic and other inequalities. Solve rational inequalities.</p> |

| | | |
|--------------------|---|--|
| | | theorem. Find a particular term of a binomial expansion. |
| Final examination. | 2 | Final examination. |
| | | |