



COURSE OUTLINE

SECTION I: BASIC COURSE INFORMATION

- COLLEGE:** Pierce
- SUBJECT (DISCIPLINE) NAME**¹ (40 characters, no abbreviations): Math
- COURSE NUMBER:** 125
- COURSE TITLE:** Intermediate Algebra
- UNITS:** 5.00
- CATALOG COURSE DESCRIPTION** -- Provide a description of the course, including an overview of the topics covered:

Linear equations and inequalities, systems of linear equations and Gaussian elimination, quadratic equations, polynomials and rational expressions, exponents and radicals. Functions and their graphs, including linear, quadratic and exponential functions; logarithms, polynomials and algebraic fractions. Modeling and problem solving. Sequences, conic sections, and complex numbers.

- CLASS SCHEDULE COURSE DESCRIPTION** -- Provide a brief description of the course, including an overview of the topics covered:

Linear equations and inequalities, systems of linear equations and Gaussian elimination, quadratic equations, polynomials and rational expressions, exponents and radicals. Functions and their graphs, including linear, quadratic and exponential functions; logarithms, polynomials and algebraic fractions. Modeling and problem solving. Sequences, conic sections, and complex numbers.

- COLLEGE APPROVAL DATE:**

- UPDATES** (check all applicable boxes):

- | | |
|--|-----------------------------------|
| <input checked="" type="checkbox"/> Content | Last Update: Jan. 17, 2005 |
| <input checked="" type="checkbox"/> Objectives | Last Update: Jan. 17, 2005 |
| <input type="checkbox"/> College Specific Course Attributes/Data Elements | Last Update: |
| <input type="checkbox"/> Districtwide Course Attributes/Data Elements | Last Update: |
| <input type="checkbox"/> Other (describe) | Last Update: |

- CLASS HOURS:**

	Hours per week (based on 18 weeks)	Total Hours per term (hrs per week x 18)	Units
Lecture:	5.00	90.00	5.00
Lab/activity (w/ homework):			
Lab/activity (w/o homework):			
Total:	5.00	90.00	5.00

¹ Underlined course attributes are the same for the course throughout the LACCD; all other course attributes are college specific.

Note: The Carnegie Rule and Title 5, section 55002 sets forth the following minimum standards: 1 unit = 1 hour lecture per week, 2 hours homework per week; **OR** 2 hours per week of lab with homework; **OR** 3 hours of lab per week without homework. The hours per week are based on a standard 18-week calendar. Lecture also includes discussion and/or demonstration hours, laboratory includes activity and/or studio hours.

11. PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT

Note: The LACCD's *Policy on Prerequisites, Corequisites and Advisories* requires that the curriculum committee take a separate action verifying that a course's prerequisite, corequisite or advisory is an "appropriate and rational measure of a student's readiness to enter the course or program" and that the prerequisite, corequisite or advisory meets the level of scrutiny delineated in the policy.

Prerequisites: **Yes** (If yes, complete information below)

Subject	Number	Course Title	Units	Validation Approval Date (for official use only)
Math	115	Elementary Algebra	5	

Corequisite: **None** (If yes, complete information below)

Subject	Number	Course Title	Units	Validation Approval Date (for official use only)

Advisories: **None** (If yes, complete information below)

Subject	Number	Course Title	Units	Validation Approval Date (for official use only)

12. OTHER LIMITATIONS ON ENROLLMENT (see Title 5, section 58106 and Board Rule 6803 for policy on allowable limitations. Other appropriate statutory or regulatory requirements may also apply):

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SECTION II: COURSE CONTENT AND OBJECTIVES

1. COURSE CONTENT AND OBJECTIVES:

COURSE CONTENT AND SCOPE – Lecture: If applicable, 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 - Lecture (<i>If applicable</i>): upon successful completion of this course, the student will be able to... (<i>Use action verbs – see Bloom’s Taxonomy below for “action verbs requiring cognitive outcomes.”</i>)
1. Review of Algebra Topics a. Solving linear equations and inequalities b. Factoring c. Cartesian coordinate system	2	Upon successful completion of this course, the student will be able to:
2. Linear Equations and Inequalities a. Linear models b. Graphing linear equations c. Slope d. Parallel and perpendicular lines e. Systems of linear inequalities	15	1. Solve linear equations and inequalities 2. Write an equation for a linear model 3. Graph linear equations 4. Interpret the parameters of a linear model, including slope 5. Solve problems involving parallel and perpendicular lines
3. Linear Systems a. Solving 2x2 systems graphically and algebraically b. Dependent and inconsistent systems c. 3x3 systems and Gaussian elimination d. Applications to problem solving	8	6. Graph the solutions to a system of linear inequalities and find the vertices of the solution set 7. Solve 2x2 and 3x3 systems of linear equations
4. Quadratic Equations a. Quadratic models b. Solving quadratic equations c. Completing the square d. Graphing quadratic equations e. Quadratic inequalities f. Complex numbers	15	8. Solve applied problems using systems of equations 9. Write an equation for a quadratic model 10. Solve quadratic equations and inequalities
5. Functions a. Definition and notation b. Graphs of functions c. Direct and inverse variation d. Modeling with functions	10	11. Graph quadratic equations 12. Recognize whether a table of values, a graph, an equation, or a verbal description represents a function 13. Describe variable relationships with function notation
6. Exponential and Logarithmic Functions a. Exponential growth and decay b. Graphs of exponential functions c. Exponential equations and logarithms d. Properties of logarithms e. Applications	10	14. Read and interpret function values from a graph 15. Model direct and inverse variation 16. Model exponential growth and decay
7. Powers and Roots a. Integer and rational exponents b. Power functions c. Distance and midpoint formulas d. Simplifying radical expressions e. Radical equations	10	17. Graph exponential functions 18. Solve exponential and logarithmic equations 19. Simplify expressions using the properties of logarithms
8. Polynomial and Rational Functions a. Operations on polynomials	10	20. Use logarithmic models in applications

