



COURSE OUTLINE

SECTION I: BASIC COURSE INFORMATION

1. **COLLEGE:** Pierce
2. **SUBJECT (DISCIPLINE) NAME**¹ (40 characters, no abbreviations): Math
3. **COURSE NUMBER:** 115
4. **COURSE TITLE:** Elementary Algebra
5. **UNITS:** 5.00
6. **CATALOG COURSE DESCRIPTION** -- Provide a description of the course, including an overview of the topics covered:

Includes operations with algebraic expressions, solution of linear equations and inequalities, systems of linear equations, quadratic equations, graphs of lines and simple parabolas. No credit given for students who have completed Mathematics 116.

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

Includes operations with algebraic expressions, solutions of linear equations and inequalities, systems of linear equations, quadratic equations, graphs of lines and simple parabolas. No credit given for students who have completed Mathematics 116.

8. **COLLEGE APPROVAL DATE:**

9. **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: |

10. **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	110	Introduction to Algebraic Concepts	5	
Math	112	Prealgebra	3	
Prealgebra placement test				

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 (If applicable): 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. Real numbers a. Signed numbers b. Order of operations c. Absolute value	5	Upon successful completion of this course, the student will be able to:
2. Algebraic expressions a. Simplifying expressions b. Evaluating by substitution	5	1. Calculate with signed numbers, order of operations and absolute value
3. Equations and inequalities a. Solving linear equations and inequalities b. Modeling with equations	10	2. Perform operations with algebraic expressions 3. Model problems and solve linear equations and inequalities in one variable
4. Polynomials and exponents a. Laws of exponents b. Negative exponents c. Scientific notation d. Addition and multiplication of polynomials	10	4. Write ratios and solve proportions 5. Solve formulas for one variable 6. Factor polynomials
5. Rational expressions a. Operations with rational expressions b. Equations involving rational expressions c. Ratio and proportion	10	7. Add and multiply polynomials 8. Simplify expressions involving exponents 9. Convert between standard and scientific notation
6. Linear equations in two variables a. Slope b. Slope-intercept and point-slope forms c. Graphing, reading graphs	10	10. Perform operations with algebraic fractions 11. Solve equations involving algebraic fractions 12. Model and solve quadratic equations in one variable
7. Systems of equations a. Solution by graphing b. Substitution method c. Elimination method d. Word problems	10	13. Apply the Pythagorean theorem to solve problems 14. Graph simple parabolas 15. Model and solve a 2x2 system of linear equations
8. Factoring techniques a. Common factors b. Difference of squares c. Quadratic trinomials	10	16. Graph linear equations and inequalities in two variables 17. Read and interpret information from graphs 18. Calculate and interpret slope
9. Quadratic equations a. Solving quadratic equations by factoring and by the quadratic formula b. Graphing simple parabolas c. Pythagorean theorem	10	19. Perform operations with radicals

10. Roots and radicals a. Simplifying radical expressions b. Extraction of roots This course may also include: 1. Complex fractions 2. Factoring by grouping 3. Completing the square	10	
Total lecture hours*	90	

*Total lecture and laboratory hours (which includes the final examination) must equal totals on page 1.

2. REQUIRED TEXTS:

Provide a representative list of textbooks and other required reading; include author, title and date of publication:

Introductory Algebra Equations and Graphs, Katherine & Bruce Yoshiwara;
Beginning Algebra, Lial/Hornsby;
Beginning Algebra, Elayn Martin-Gay

3. SUPPLEMENTARY READINGS:

Reading assignments may include, but are not limited to the following:

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4. WRITING ASSIGNMENTS:

Title 5, section 55002 requires grades to be "based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students." Writing assignments in this course may include, but are not limited to the following:

Writing assignments in this course include, but are not limited to, problem solving exercises.

5. REPRESENTATIVE OUTSIDE ASSIGNMENTS:

Out of class assignments may include, but are not limited to the following:

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6. REPRESENTATIVE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING:

Title 5, section 55002(a) requires that a degree applicable course have a level of rigor that includes "critical thinking and the understanding and application of concepts determined by the curriculum committee to be at college level". Critical thinking may include, but is not limited to analysis, synthesis, and evaluation. Provide examples of assignments that demonstrate critical thinking.

Writing assignments involve problem solving and analysis. For example: "Two hikers are 11 miles apart and walking toward each other. They meet in 2 hours. Find the rate of each hiker if one hiker walks 1.1 mph faster than the other."