



Los Angeles Community College District

COURSE OUTLINE

SECTION I: BASIC COURSE INFORMATION

- 1. COLLEGE: Pierce
2. SUBJECT (DISCIPLINE) NAME (40 characters, no abbreviations): Math
3. COURSE NUMBER: 215
4. COURSE TITLE: Principles of Mathematics I
5. UNITS: 3.00
6. CATALOG COURSE DESCRIPTION -- Provide a description of the course, including an overview of the topics covered:

Includes problem solving, functions, systems of numeration and number concepts; whole numbers, integers, rational and real numbers, together with their algorithms; use of manipulatives; techniques/strategies employed by children to accomplish arithmetic tasks. For prospective elementary or junior high school teachers.

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

Includes problem solving, functions, systems of numeration and number concepts; whole numbers, integers, rational and real numbers, together with their algorithms; use of manipulatives; techniques/strategies employed by children to accomplish arithmetic tasks. For prospective elementary or junior high school teachers.

8. COLLEGE APPROVAL DATE:

9. UPDATES (check all applicable boxes):

- Content Last Update: Jan. 17, 2005
Objectives Last Update: Jan. 17, 2005
College Specific Course Attributes/Data Elements Last Update:
Districtwide Course Attributes/Data Elements Last Update:
Other (describe) Last Update:

10. CLASS HOURS:

Table with 4 columns: Activity, Hours per week (based on 18 weeks), Total Hours per term (hrs per week x 18), Units. Rows include Lecture, Lab/activity (w/ homework), Lab/activity (w/o homework), and Total.

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.

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

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	120	Plane Geometry	5	
Math	125	Intermediate Algebra	5	
Math	126	Intermediate Algebra and Trigonometry	6	

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)

11. 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. Problem types (e.g. Join, Separate, Part-Part-Whole, and Compare for addition/subtraction)	8	Upon completion of this course, the student will be able to:
2. Algorithms for arithmetic	8	
3. Systems of numeration	7	
4. Elementary number theory	8	
5. Addition/Subtraction strategies that children use	8	
6. Multiplication/Division strategies that children use	8	
7. Use of manipulatives	7	
This course may also include		
1. Non-standard or non-US algorithms for arithmetic		1. Work with our number system and alternate number systems 2. Perform basic operations using hand-held calculators and/or computers 3. Explain and demonstrate techniques/strategies that will assist in the teaching of basic arithmetic algorithms 4. Recognize the different problem types (e.g. partitive division vs measurement division) and appraise the difficulty of different arithmetic word problems based on problem type
2. Tessellations		
3. Logic		
Total lecture hours*	54	

*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:

Math for Elementary School Teachers, Bassarear
Math for Elementary School Teachers, Billstein
Math for Elementary School Teachers, Musser/Burger
Math for Elementary School Teachers, Sonnabend
Number Power 1, Kriegler
Number and Number Sense, Sowder

3. SUPPLEMENTARY READINGS:

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

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:

Researching how a textbook currently used explains a topic

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: "Select one of the multiplication algorithms from around the world. Explain how it works and why it works."

7. METHODS OF EVALUATION:

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." Methods of evaluation may include, but are not limited to the following (please note that evaluation should measure the outcomes detailed "Course Objectives" at the beginning of Section II):

Methods of evaluation may include, but are not limited to, quizzes and exams, including a final exam; homework; computer projects; portfolios or journals

8. METHODS OF INSTRUCTION:

Methods of instruction may include, but are not limited to the following:

- Lecture
- Discussion
- Laboratory
- Activity
- Field Experience
- Independent Study
- Other (explain)

student presentations,
group work, computer labs
or computer-aided
instruction, videos

9. SUPPLIES:

List of supplies the student must provide.

Scientific or graphing calculators

10. COMPUTER COMPETENCY:

If applicable, explain how computer competency is included in the course.