



ANTELOPE VALLEY COLLEGE

Academic Affairs Office  
Course Outline of Record

**COURSE SUBJECT & NUMBER:** MATH 050

**COURSE NAME:** Arithmetic

**COURSE UNITS:** 4

**COURSE HOURS:** 4

**COURSE REQUISITES:** *(Follow format of similar courses found in the college catalog.)*

Advisory: Eligibility for MATH 050 and READ 099

**COURSE DESCRIPTION:** *(Write a short paragraph providing an overview of topics covered. Be sure to identify target audience--transfer, major, GE, degree/certificate, etc. If repeatable, state the number of times at end of description).*

This course is for students who need preparation for college level courses and programs. The course covers addition, subtraction, multiplication, and division with whole numbers, fractions, decimals, and integers. It also covers setting up ratios, solving proportions, conversions between fractions, decimals, and percents, the solving of percent applications, rounding of whole numbers and decimals, order of operations, finding perimeter, area and volume of some geometric figures. Students are taught how to do measurements and to read and create simple graphs and pie charts.

**COURSE OBJECTIVES:** *(Should be stated as performance-based, measurable expected student outcomes. Use Bloom's taxonomy to formulate clear and concise objectives. These objectives are common to all students; they must be clearly related to course content, assignments, and methods of evaluation.)*

**Upon completion of course, the successful student will be able to:**

1. Perform the operations of addition, subtraction, multiplication and division on whole numbers, fractions, decimals, integers.
2. Solve application problems related to arithmetic operations on whole numbers, fractions and decimals.
3. Formulate and simplify ratios.
4. Solve proportions and application problems about proportions.
5. Perform conversions between fractions, decimals, and percents.
6. Solve percent applications.
7. Employ both English and metric units of measurement.
8. Analyze and create simple graphs and pie charts.

**COURSE CONTENT:** *(Proved course content in terms of specific topics or a specific body of knowledge that each instructor must cover. Put topics in outline form with major and minor headings. Title 5 requires that each instructor covers all material listed here. )*

1. Operations on Whole Numbers
  - a. The decimal place value system.
  - b. Addition, subtraction, multiplication, division
  - c. Exponential notation and order of operations
  - d. Applications with rectangles
2. Multiplying and Dividing Fractions
  - a. Prime numbers, divisibility, factoring
  - b. Fraction basics
  - c. Multiplying and dividing fractions
3. Adding and Subtracting Fractions
  - a. Adding and subtracting like denominators
  - b. Common Multiples
  - c. Adding and subtracting unlike denominators, and mixed numbers.
4. Decimals
  - a. Place value and rounding
  - b. Adding and subtracting decimals
  - c. Multiplying and dividing decimals
  - d. Converting fractions to decimals, and decimals to fractions.
  - e. Applications with circle.
5. Ratios and Proportions
  - a. Forming and simplifying ratios
  - b. Setting up solving proportions including applications
6. Percents
  - a. Conversion between fractions, decimals and percents
  - b. Solving percent applications
7. Geometry and Measure
  - a. English measurement units
  - b. Metric measurement units
  - c. Lines, angles, and triangles
8. Data Analysis and Statistics
  - a. Mean, median, and mode
  - b. Tables, graphs, charts
9. The Real Number System
  - a. The operations of arithmetic on signed numbers

**TYPICAL READING, WRITING, AND COMPUTATIONAL ASSIGNMENTS**

*This material is necessary for all credit courses. Assignments should be clearly related to course objectives, content, and methods of evaluation. (See sample of a "Model Outline" in the AP&P Standards & Practices handbook.) Provide a minimum of three examples for each item completed.*

**1. Describe nature and frequency of required reading assignments if applicable:**

Students read 5-10 pages of the textbook to prepare for and follow-up each lecture period.

**2. Describe nature and frequency of required writing assignments if applicable:**

Students may be asked to give short answers or explanations relating to some of the application problems.

**3. Describe nature and frequency of required computational assignments if applicable:**

Students will have computational assignments after every class meeting.

**4. If course is degree applicable/transfer, describe those critical thinking skills that are required and how they will be evaluated: (Title 5 requirements can be found in the AP&P Standards and Practices book.)**

N/A

**5. Describe other types of assignments that may be required of students:**

Students may perform assignment on the computer to provide reinforcement.

**6. Using the Carnegie formula (i.e. 1 hr. lecture = 2 hrs. homework; 2 hrs. lecture = 4 hrs. homework; 3 hrs. lecture = 6 hrs. homework; etc.) describe estimated time per week it would take a student to complete typical out-of-class assignments(for each type above):**

Approximately 8 hours per week: Reading-4 hours; Computation-4 hours; Computer-4 hours (in computer-aided classes only).

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**METHODS OF INSTRUCTION:** *(Methods must be consistent with content and appropriate to objectives; state in terms of what instructor will be doing in order to present course content.)*

These may include but are not limited to: lecture, discussion, demonstration, boardwork, use of computer software or web-based activities.

**METHODS OF EVALUATION:** *(Be sure these are clearly related to course content, assignments, and objectives, as well as Title 5 requirements when applicable. Describe what instructor will be looking for when evaluating assignments and tests in order to determine whether students have met course objectives. Grades must be based on demonstrated proficiency in subject matter and determined, where appropriate, by essays, objective and essay tests, research papers, problem solving exercises, or skills' demonstrations.)*

Methods of evaluation may include but are not limited to:

1. Regular homework assignments to reinforce concepts taught in class.
2. Quizzes to encourage short-term retention of material.
3. Periodic in-class (or online in the case of computer assisted classes) examinations, to encourage long term retention of material.

**Suggested Texts or other Instructional Materials** *(include title, author, publisher, date, and edition):*

Basic Mathematic Skills with Geometry, by Streeter, Hutchison, Bergman & Hoelzle, 6<sup>th</sup> Edition, McGraw-Hill

**Effective Date:** \_\_\_\_\_

(date course can first be offered to be filled in by Office of Academic Affairs)