



ANTELOPE VALLEY COLLEGE

Academic Affairs  
Course Outline of Record

Academic Affairs Only

- New Course
- COR Revision
- COR Update 2 / 8 / 2007
- Pre Req/Advisories
- Other Changes
- Effective Date

**COURSE SUBJECT & NUMBER:** MATH 050B

**COURSE NAME:** Arithmetic-Second Half With SAS

**COURSE UNITS:** 2 **COURSE HOURS:** 4

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

Prerequisite: Completion of MATH 050A

Advisory: Eligibility for 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 designed for students who need preparation for college level courses and programs. It can benefit students with math anxiety, students who wish to learn at a slower pace, as well as students with identified learning disabilities for math. It covers addition, subtraction, multiplication, and division with decimal, and percents; ratios, proportions, and measurements; line and bar graphs, pie charts; and introduction to algebra (signed number operations, algebraic expressions and solving simple equations). MATH 050B will include the use of math software and videotape as well as collaborative learning in a small assembly setting. This course together with MATH 050A is equivalent to MATH 050. Credit is allowed in either MATH 050 or the MATH 050A - MATH 050B combination. Concurrent enrollment in MATH 050 and MATH 050B is not permitted. Note: No grade will be given for this class; student will receive "credit" or "no-credit" only. (Credit course not applicable to the associate degree and certificate programs.)

**COURSE OBJECTIVES:** *(Use Bloom's taxonomy to formulate concise, performance-based measurable objectives common to all students. Objectives must be closely aligned with course content, assignments, and methods of evaluation.)*

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

1. Convert a percent to both fraction and decimal
2. Convert both fraction and decimal to a percent
3. Classify the rate, base, and amount in a given statement or question.
4. Set-up the percent problem using the rate, base, and amount.
5. Solve the application problems involving percent.
6. Demonstrate skills for measurement using different units of measures.
7. Create pictographs, pie charts, and bar graphs.
8. Compute the means, medians, and modes.
9. Apply the Pythagorean Theorem on a closed right triangle.
10. Demonstrate skills for solving word problems involving operations with decimals, percent, and signed numbers.
11. Evaluate and simplify algebraic expressions.
12. Translate language of algebra to mathematical symbols.

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**COURSE CONTENT:** *(Enter 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 must cover all material listed below.)*

**I. Percent**

- A. Changing a Percent to a Fraction or a Decimal
- B. Changing a Decimal or Fraction to a Percent
- C. Identifying the Rate, Base, and Amount
- D. Solving Percent Applications

**II. Measure**

- A. The Units of the English System
- B. Metric Units of Length
- C. Metric Units of Weight and Volume
- D. Converting Between the English and Metric Systems
- E. Pythagorean Theorem for a Closed Right Triangle

**III. Data Analysis and Statistics**

- A. Means, Medians, and Modes
- B. Tables, Pictographs, and Bar Graphs
- C. Creating Bar Graphs and Pie Graphs

**IV. The Real Number System**

- A. Real Numbers and Order
- B. Adding Real Numbers
- C. Subtracting Real Numbers
- D. Multiplying Real Numbers
- E. Dividing Real Numbers

**V. Introduction to Algebra**

- A. From Arithmetic to Algebra
- B. Evaluating Algebraic Expressions
- C. Adding and Subtracting Algebraic Expressions

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**TYPICAL HOMEWORK ASSIGNMENTS: READING, WRITING, COMPUTATIONAL, OTHER**

*This information is necessary for all credit courses. Assignments should be closely related to course objectives, content, and methods of evaluation. (See sample of a "Model Outline" in the AP&P Standards & Practices handbook.) Include a range of assignments (minimum of three) from which faculty may choose when designing their syllabus.*

**1. Describe nature and frequency of typical reading assignments if applicable; note if any are required:**

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

**2. Describe nature and frequency of typical writing assignments if applicable; note if any are required:**

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

**3. Describe nature and frequency of typical computational assignments if applicable; note if any are required:**

Students will have computational assignments after every class meeting.

**4. Describe other types of homework assignments that students may be asked to complete; note if any are required:**

Students may perform assignments on the computer to provide reinforcement.

**5. Describe those critical thinking skills that are derived from assignments listed above; be sure that they reflect course objectives.**

Students will analyze problems and select appropriate methods of solution, construct the basic set-up, and evaluate their work as to completeness and accuracy. Students must correctly recognize the applicability/non-applicability of properties of whole and fraction numbers by determining whether the conditions of the properties have been met.

**6. For categories 1-4, describe the estimated time per week it would take a student to complete homework assignments. Title 5 uses the Carnegie formula for establishing units using a 2:1 ratio as follows: 1 hr. lecture = 2 hrs. homework; 2 hrs. lecture = 4 hrs. homework; etc. For example: reading textbook—2 hours; writing reports—3 hours.**

**Reading:** 2 hours

**Writing:** 0.5 hour

**Computational:** 5 hours

**Other:** 0.5 hour

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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 to students: for example, lecture, demonstration, facilitate group work, etc. Do not list specific instructional equipment.)*

Methods of instruction may include, but are not limited to, lecture, discussion, demonstration, boardwork, and use of technological resources.

**METHODS OF EVALUATION:** *(These must be clearly related to course content, assignments, and objectives in order to comply with Title 5 requirements. Describe what instructor will be looking for when evaluating various 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 or projects, problem solving exercises, or skills' demonstrations.)*

Methods of evaluation critique both problem-solving methodology and accuracy and may include, but are not limited to:

1. Grading of examinations and a comprehensive final exam that assess students' abilities to:
  - a) assimilate and recognize the applicability of the formulas, definitions, properties algorithms,
  - b) convert percent to fraction or decimal
  - c) convert fraction or decimal to percent,
  - d) classify the rate, base, and amount in a percent statement,
  - e) solve percent applications,
  - f) convert the unit of measurement between English and Metric Systems,
  - g) perform the four operations of Real Numbers,
  - h) apply Pythagorean for a closed right triangle,
  - i) compute the means, medians, and modes,
  - j) evaluate algebraic expressions,
  - k) translate language of algebra to mathematical symbols.
2. Grading of quizzes that assess students' initial comprehension of concepts that will be developed further.
3. Grading of homework assignments that assess students' math preparation and study habits

**Suggested Texts or other Instructional Materials** *(list several when possible; include title, author, publisher, date, and latest edition.)*

Basic Mathematic Skills with Geometry, by Streeter, Hutchison, Bergman & Hoelzle, McGraw-Hill, 2006, 7<sup>th</sup> Edition.