

College of San Mateo
Official Course Outline

1. **COURSE ID:** MATH 811 **TITLE:** Arithmetic Review with Pre Algebra
Units: 3.0 units **Hours/Semester:** 32.0-36.0 Lecture hours; and 48.0-54.0 Lab hours
Method of Grading: P/NP Only
Recommended Preparation:
ENGL 828, ESL 828
2. **COURSE DESIGNATION:**
Non-Degree Credit
Transfer credit: none
3. **COURSE DESCRIPTIONS:**
Catalog Description:
Basic arithmetic involving whole numbers, signed numbers, fractions, decimals, and percents; estimation, number sense, order of operation, area and volume and other applications. (Units do not apply toward AA/AS degree)
4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**
Upon successful completion of this course, a student will meet the following outcomes:
 1. Perform operations with integers.
 2. Perform operations with fractions
 3. Perform operations with decimals.
 4. Perform operations with percentages.
 5. Solve application problems requiring operations with whole numbers, fractions, decimals, and/or percentages.
 6. Apply rules of order of operation to simplify numerical expressions.
5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**
Upon successful completion of this course, a student will be able to:
 1. Perform operations with whole numbers
 2. Perform operations with fractions
 3. Perform operations with decimals
 4. Perform operations with Percentages
 5. Solve application problems requiring operations with whole numbers, fractions, decimals, and/or percentages
 6. Apply rules of order of order of operation to simplify numerical expressions.
6. **COURSE CONTENT:**
Lecture Content:
 1. Whole Numbers and Integers- addition, subtraction, rounding, multiplication, division, exponents, order of operations, greatest common factor, least common multiple, factorization, divisibility, problem solving
 2. Fractions - equivalent fractions, multiplication, division, addition, subtraction, mixed numerals, order of operations, problem solving with fractions
 3. Decimals - order, rounding, addition, subtraction, multiplication, division, conversion to and from fractions, percent notation, conversion to and from percents, solving problems with percents and decimals
 4. Applications – a variety of application problems such as: areas and perimeters of geometric shapes (circle, square, rectangle), measurement conversion, reading and making simple charts and graphs.**Lab Content:**
 1. Perform operations with integers.
 2. Perform operations with fractions
 3. Perform operations with decimals.
 4. Perform operations with percentages.
 5. Solve application problems requiring operations with whole numbers, fractions, decimals, and/or percentages.
 6. Apply rules of order of operation to simplify numerical expressions.
7. **REPRESENTATIVE METHODS OF INSTRUCTION:**

Typical methods of instruction may include:

- A. Lecture
- B. Discussion
- C. Other (Specify): a. Out-of-class assignments: students will need to complete assigned problems and projects. b. Reading assignments: Instructor will assign text readings for discussion of a topic in class. c. Writing assignments: Students will submit written homework assignments. d. Critical thinking: Students will practice critical thinking in small group problem solving. e. Resources available on CD and the internet may be used to augment the text.

8. REPRESENTATIVE ASSIGNMENTS

Representative assignments in this course may include, but are not limited to the following:

Writing Assignments:

- A. Instructor carefully chooses or creates relevant out-of-class exercises to be completed either on-line or in written form.
- B. Instructor creates or uses already created in-class assignments for students to do with the help of other students and the instructor.
- C. Instructor may create longer written assignments for students to complete in essay form; these assignments are meant to incorporate mathematical modeling or exposition of applications of mathematics.

Reading Assignments:

Instructor will assign text readings for discussion of a topic in class.

Other Outside Assignments:

Students may submit homework assignments on web based homework systems.

9. REPRESENTATIVE METHODS OF EVALUATION

Representative methods of evaluation may include:

- A. Class Participation
- B. Exams/Tests
- C. Oral Presentation
- D. Quizzes
- E. Written examination
- F. Written individual assignments and/or journal- to demonstrate individual student progress toward objectives. Small group presentations to demonstrate individual student progress toward objectives. There will be a minimum of five cumulative tests, not counting the cumulative final exam. Students are evaluated to show competency with operations without use of calculators.

10. REPRESENTATIVE TEXT(S):

Possible textbooks include:

- A. Arnold, David and Wagner, Bruce. *Pre Algebra*, ed. <http://mathrev.redwoods.edu/PreAlgText/>: College of the Redwoods, 2011
- B. McKeague, Charles P. *Basic mathematics with Early Integers*, 1 ed. San Luis Obispo, CA: XYZ Textbooks, 2011

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Course Originator: Cheryl Gregory