EL CAMINO COLLEGE
COURSE OUTLINE OF RECORD

I. COURSE DESCRIPTION

Course Title and Number: Mathematics 12

Descriptive Title: Basic Arithmetic Skills

Discipline: Mathematics

Division: Mathematical Sciences

Course Length: ☒ Full Term ☐ Other (specify): _____

Hours Lecture: 4 Hours Laboratory: _____ Course Units: 3

Grading Method: ☒ Letter ☐ Credit/No Credit ☐ Both ☐ No Grade

Course Type: ☐ Credit, Degree Applicable ☒ Credit, Not Degree Applicable ☐ Non-Credit

Transfer CSU: ☐ Yes Effective Date _____ ☒ No

Transfer UC: ☐ Yes Approval Date _____ ☐ Pending ☒ No

Conditions of Enrollment:
Specify Prerequisite Corequisite, Recommended Preparation, Enrollment Limitation or None.

None

Catalog Description:

This introductory arithmetic course is designed to develop number and operation sense using whole numbers, fractions, decimals, and percents, as well as develop problem-solving skills. Topics include writing whole numbers and decimals in various forms, estimation, ratios, proportions, and applications.

Note: Students enrolled in this course are required to participate in individual and group activities.

II. COURSE OBJECTIVES

List the major objectives of the course. These must be stated in behaviorally measurable terms.

1. Read and write whole numbers and decimal numbers in standard, expanded, and written form.
2. Order a given set of numbers.
3. Use the order of operations to add, subtract, multiply and exponentiate whole numbers, fractions and decimals.
4. Use rounding techniques to estimate results of operations on whole numbers, fractions and decimals.
5. Use divisibility tests and prime factorization to reduce fractions to lowest terms and perform operations on fractions.
6. Convert rational numbers into decimals, fractions and percentages.
7. Solve various application problems requiring the use of ratios, proportions, and percentages.

III. OUTLINE OF SUBJECT MATTER

The topics should be detailed enough to enable an instructor to determine the major areas that should be covered and so that the course may have consistency from instructor to instructor and semester to semester.

Approximate Time in Hours	Major Topics
16	I. Whole numbers a. Place value system including expressing whole numbers in standard, expanded and written form b. Addition of whole numbers c. Subtraction of whole numbers d. Multiplication of whole numbers e. Division of whole numbers f. Rounding and estimation of whole numbers g. Powers and order of operations and ordering of whole numbers h. Applications of whole numbers
20	II. Fractions a. Divisibility tests of whole numbers b. Prime factorization of whole numbers c. Greatest common factor of whole numbers d. Converting between mixed numbers and improper fractions e. Simplifying fractions f. Multiplication of fractions g. Division of fractions h. Least common multiple of whole numbers i. Powers, order of operations and ordering of fractions j. Addition and subtraction of fractions k. Rounding and estimation of fractions l. Applications of fractions
16	III. Decimals a. Place value system including expressing decimals in standard and written forms b. Addition, subtractions, multiplication and division of decimals c. Rounding and estimation of decimals d. Powers, order of operations and ordering of decimals e. Converting between decimals and fractions f. Applications
20	IV. Ratios, proportions and percents a. Writing ratios and unit rates b. Solving proportions c. Conversions among percentages, fractions and decimals d. Solving percent problems of the type A = RB where A is the amount, R is the rate and B is the base e. Applications
Total: 72	

IV . METHODS OF EVALUATION

A. CREDIT, DEGREE APPLICABLE AND CREDIT, NOT DEGREE APPLICABLE COURSES

Check the PRIMARY method of evaluation for this course.

- ☐ Substantial writing assignments
- ☒ Problem solving demonstrations (computational or non-computational)
- ☐ Skills demonstrations

A minimum of one response in the categories 1, 2, or 3 below, as applicable, is required. However, you may check all that apply.

1. Indicate the types of writing assignments used as primary or secondary methods of evaluation for this course.
   - ☐ Essay exams
   - ☐ Written homework
   - ☐ Term or other papers
   - ☐ Reading reports
   - ☐ Laboratory reports
   - ☐ Other (specify)

2. Indicate the types of problem-solving demonstrations used as primary or secondary methods of evaluation for this course.
   - ☒ Exams
   - ☐ Laboratory reports
   - ☒ Quizzes
   - ☒ Homework problems
   - ☐ Fieldwork
   - ☒ Other (specify) individual and group activities

3. Indicate the types of skill demonstrations used as primary or secondary methods of evaluation for this course.
   - ☐ Class performance
   - ☐ Performance exams
   - ☐ Fieldwork
   - ☐ Other (specify)

4. If objective exams are also used, check all that apply.
   - ☐ Multiple choice
   - ☐ Completion
   - ☐ Matching items
   - ☐ True/false
   - ☐ Other (specify)

B. NON-CREDIT COURSE

Indicate the methods of evaluation that will be used to determine that stated objectives have been met.

V. COURSEWORK

A. TYPICAL ASSIGNMENT

Provide an example of a typical assignment. This assignment must correspond to the PRIMARY method of evaluation indicated in Section IV, Methods of Evaluation. That is, it must be a writing assignment or, if more appropriate, an assignment involving problem solving or skill demonstration.

Place the numbers in order from smallest to largest. Write a sentence or two justifying your final ordering.

$$0.4,\ \frac{1}{2},\ \frac{55}{100},\ 0.49$$

B. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS

Cite two specific assignments that demonstrate college-level critical thinking. (Required for degree applicable courses only.)

C. WORK OUTSIDE OF CLASS

Two hours work outside of class are required for each hour of lecture or equivalent. Each student in this course will be required to participate in the following work outside of class time. Check all that apply.

- ☒ Study
- ☒ Answer questions
- ☒ Skill practice
- ☒ Required reading
- ☒ Problem solving activity
- ☐ Written work (such as essay/composition/report/analysis/research)
- ☐ Journal (done on a continuing basis throughout the semester)
- ☐ Observation of or participation in an activity related to course content (such as theatre event, museum, concert, debate, meeting)
- ☐ Course is lab only - minimum required hours satisfied by scheduled lab time
- ☒ Other (specify) **complete group and individual activities begun in class**

VI. INSTRUCTIONAL METHODOLOGY

A. Check all planned instructional activities that apply:

☒ Lecture	☒ Group Activities
☐ Lab	☐ Role play/simulation
☒ Discussion	☐ Guest Speakers
☐ Multimedia presentations	☐ Field trips
☐ Demonstration	☐ Other (specify)

Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instructional delivery shall provide access, full inclusion, and effective communication for students with disabilities.

VII. TEXTS AND MATERIALS

If multiple selection is offered, only representative texts need be listed. An up-to-date list of required and recommended materials is maintained in the division office.

A. REQUIRED TEXTS (title, author, publisher, year)

Basic Mathematical Skills, 6th Edition, Hutchison, et al., McGraw-Hill, 2004

B. REQUIRED SUPPLEMENTARY READINGS

C. OTHER REQUIRED MATERIALS

VIII. CONDITIONS OF ENROLLMENT

If this course has a Prerequisite or Corequisite, complete section A. If this course has an Enrollment Limitation complete section B.

A. PREREQUISITE AND/OR COREQUISITE

1. Indicate if this course has a prerequisite or corequisite or both.
   ☐Prerequisite ☐Corequisite ☐Both

2. Indicate Type. Check all that apply.

   ☐Sequential ☐Computational/Communication Skills
   ☐Health and Safety ☐Non-Course
   ☐Standard (If this is a Standard prerequisite or corequisite, attach CCC Form D.)

3. Entrance Skills/Knowledge
   List the required skills and/or knowledge without which a student would be highly unlikely to receive a grade of A, B, C, or Credit (or for Health and Safety, would endanger self or others) in this course.

B. ENROLLMENT LIMITATION

1. Indicate the category which describes the Enrollment Limitation for this course.
   ☐Band/Orchestra
   ☐Theater
   ☐Speech
   ☐Chorus
   ☐Journalism
   ☐Dance
   ☐Intercollegiate Athletics
   ☐Honors Course
   ☐Blocks of Courses
   ☐Other (specify)

2. List Degree and/or Certificate requirements that are met by this course.
3. List all El Camino College courses that also satisfy the requirements listed above in Section B.2.

Originator: **Trudy Meyer** Submittal Date: **September, 2006**

BOARD APPROVAL DATE: _____

Reviewed and/or Revised by:

Trudy Meyer Date: May, 2007

_____ Date: _____

REQUIRED SIGNATURES FOR NON-CREDIT COURSE

College Curriculum Committee Chair

_____

Vice-President - Academic Affairs

_____