

COURSE OUTLINE **Basic Arithmetic**

Course Description

MA 010. Basic Arithmetic. 1 hour credit. Prerequisite: A score at a pre-determined level on a diagnostic and placement instrument. This course will enable the student to understand the operations of addition, subtraction, multiplication, division and place value of whole numbers.

Course Relevance

The principles learned in this course allow the student to use math skills in real life application problems and are essential for student success in more advanced math classes.

Required Materials

New Readers Press. (2003) *Math sense: whole numbers and money*. New York, NY: New Readers Press.

Learning Outcomes

The intention is for the student to be able to:

1. Demonstrate competence in the use of whole numbers in math computation and problem solving.

Learning PACT Skills that will be DEVELOPED and/or documented in this course

Through involvement in this course, the student will develop ability in the following PACT skill area(s):

Analytical Thinking Skills

1. Problem solving
 - Through application problems, the student will demonstrate ability to solve multi-step problems using whole numbers.

Major Summative Assessment Task(s)

These learning outcome(s) and the Learning PACT skill(s) will be demonstrated by

1. Completing of word/application problems involving multi-step problem-solving using whole numbers.

Course Content

- I. Skills/Competencies – Actions that are essential to achieve the course outcomes:
 - A. Add, subtract, multiply and divide whole numbers
 - B. Solve word problems involving the four basic operations
- II. Themes – Key recurring concepts that run throughout this course:
 - A. Problem solving: Use of multiple routes to reach a correct answer

- B. Value of math: personal value and the perceptions of others
- III. Issues – Key areas of conflict that must be understood in order to achieve the intended outcome:
 - A. Competency in math facts, particularly multiplication and division
 - B. General dislike for math along with the student’s belief that he/she “can’t get it”
- IV. Concepts – Key concepts that must be understood to address the issues:
 - A. Math as a language
 - B. Properties that govern math usage
 - C. Relationships among operations

Learning Units

- I. Numeracy
 - A. Identify and write whole numbers up to seven digits
 - B. Identify place value of whole numbers up to seven places
- II. Addition of whole numbers
 - A. Add whole numbers
 - B. Solve word/application problems involving addition of whole numbers
- III. Subtraction of whole numbers
 - A. Subtract whole numbers
 - B. Solve word/application problems involving subtraction of whole numbers
- IV. Multiplication of whole numbers
 - A. Multiply whole numbers
 - B. Solve word/application problems involving multiplication of whole numbers
- V. Division of whole numbers
 - A. Divide whole numbers
 - B. Solve word problems involving division of whole numbers

Learning Activities

Learning activities will be assigned to assist the student to achieve the intended course outcome through student-Instructor interaction, text materials, computerized instruction, web resources and other activities at the discretion of the instructor.

Grade Determination

The student will be graded on learning activities and assessment tasks (including development of visual representations in problem-solving). Grade determinates may include the following: daily assignments, including assignments involving use of study skills (i.e., making of unique study cards), and other methods of evaluation employed at the discretion of the instructor.