I. OVERVIEW
The following information will appear in the 2009 - 2010 catalog

MATH-10 Introduction to Math 4 Units

Advisory: Before enrolling in this course, students are strongly advised to Qualification by MJC Assessment Process

Module 1: A review of the four arithmetic operations as they apply to whole numbers, common fractions, and decimal fractions. Includes the concepts of percents. Module 2: A variety of selected applications from arithmetic, pre-algebra, and geometry. Field trips are not required. Course is not applicable to the associate degree.

II. LEARNING CONTEXT
Given the following learning context, the student who satisfactorily completes this course should be able to achieve the goals specified in Section III, Desired Learning:

A. COURSE CONTENT

1. Required Content:

   a. Reading and writing whole numbers, decimals, and fractions
   b. Operations with whole numbers
   c. Operations with fractions
   d. Operations with decimals
   e. Operations with percents
   f. Applications:

      i. Number bases
         a. Decimal numbers
         b. Non-decimal numbers
      ii. Formulas
         a. Perimeter
         b. Area
         c. Volume
      iii. Word problems
         a. Unit factors
         b. Dimensional analysis
c. Conversions

iv. Scientific notation
   a. Large numbers
   b. Small numbers

v. Percents

vi. Simple Closed Curves
   a. Plotting points
   b. Graphing simple closed curves
   c. Finding the area of a simple closed curve

B. ENROLLMENT RESTRICTIONS

1. Advisories

   Before enrolling in this course, students are strongly advised to Qualification by MJC Assessment Process

C. HOURS AND UNITS

<table>
<thead>
<tr>
<th>INST METHOD</th>
<th>TERM HOURS</th>
<th>UNITS</th>
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</thead>
<tbody>
<tr>
<td>Lect</td>
<td>72.00</td>
<td>4.00</td>
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<tr>
<td>Lab</td>
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<tr>
<td>Disc</td>
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D. METHODS OF INSTRUCTION (TYPICAL)

   Instructors of the course might conduct the course using the following method:

   1. Lecture and discussion to present topics
   2. Demonstrations of mathematical techniques, applications, and problem-solving strategies by both instructor and students
   3. Applications of techniques to specific problems in homework and/or in-class exercises
   4. Homework assignments and/or in-class exercises require students to analyze a given problem, select an appropriate procedure to solve the problem, apply the procedure, and evaluate the adequacy of both the result of the procedure and the procedure itself.

E. ASSIGNMENTS (TYPICAL)

1. EVIDENCE OF APPROPRIATE WORKLOAD FOR COURSE UNITS

   Time spent on coursework in addition to hours of instruction (lecture hours)
In part I of the course students are expected to spend two to three hours a day watching the daily lecture, doing the daily hw, and the Review test for each of 18 lessons. Three quizzes are given at the end of the 6th, 13th, and 18th lessons. A one hour midterm is given in the 8th week covering the material in the computational review.

In part II of the course students do a weekly unit in which they are expected to spend two to three hours each day viewing the lectures and working on the problems in each unit. A one hour unit test is given each week at the end of the unit. A two hour comprehensive final is then given on the application units in part I.

2. **EVIDENCE OF CRITICAL THINKING**
*Assignments require the appropriate level of critical thinking*

Typical assignments for part I.

1. Write the composite number 1728 as a product of primes.
2. Use prime factoring to reduce the fraction 48/72.
3. Find the LCD using prime factoring and add 13/48 and 11/56.
4. Write 1,728 in expanded notation using powers of ten.
5. Write 17.28 in expanded notation using powers of ten.

Typical assignments for part II.

1. Find the volume of a sphere with a radius of 5 cm.
2. Use dimensional analysis to find out how many feet you will travel in one second when traveling at 60 miles per hour.
3. Write 3214 base 5 in expanding notation using exponents.
4. Write 754,000,000,000 in scientific notation.
5. Find the Base if R=25% and P=$100.

F. **TEXTS AND OTHER READINGS (TYPICAL)**


III. **DESIRED LEARNING**

A. **COURSE GOAL**

*As a result of satisfactory completion of this course, the student should be prepared to:*

Add, subtract, multiply, and divide whole numbers, fractions, and decimals. They should also be prepared to take Math 20.

B. **STUDENT LEARNING GOALS**

*Mastery of the following learning goals will enable the student to achieve the overall course goal.*

1. **Required Learning Goals**

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

a. add, subtract, multiply, and divide with whole numbers, fractions, and decimals.

b. apply the skills listed in Objective A to problems in areas of application listed below under Content.
IV. METHODS OF ASSESSMENT (TYPICAL)

A. FORMATIVE ASSESSMENT

1. Quizzes
2. Tests given at regular intervals

B. SUMMATIVE ASSESSMENT

1. Final examination
2. Midterm examination