

Prepared by the Department of Mathematics
Date of Departmental Approval: May 1, 2006
Date approved by Curriculum and Programs: January 29, 2007

Effective: Fall 2007

1. **Course Number:** MAT010
Course Title: Fundamentals of Arithmetic
2. **Description:** A mastery-based course in basic arithmetic operations and techniques designed to provide a thorough coverage of whole number arithmetic, fractions, and decimals. Applications are used extensively to develop problem-solving techniques. The course focuses on basic computational skills, study skills, and background needed to succeed in subsequent courses. Students use the language of arithmetic to understand basic arithmetic vocabulary and to read/write simple quantitative statements.
3. **Student Learning Outcomes (instructional objectives: intellectual skills):**
Upon successful completion of this course, students are able to do the following:
 - perform addition, subtraction, multiplication and division with whole numbers, fractions, mixed numbers, and decimals.
 - evaluate applied whole number, fraction, decimal, and percent word problems.
 - evaluate ratio, rates and proportions.
 - evaluate percent notation.
 - convert between whole numbers, fractions, decimals, and percents.
 - perform order of operations.
 - apply rounding and estimation.
 - evaluate exponents.
 - define math vocabulary.
 - apply study skills.
 - solve application problems.
4. **Credits:** 3 non-degree credits
5. **Satisfies General Education Requirement:** No
6. **Prerequisite(s):** None. Recommendation by basic skills assessment score.
7. **Semester(s) Offered:** Fall, Spring, Summer
8. **Suggested General Guidelines for Evaluation:** Regular unit tests given on a "mastery basis". The mastery approach has as its goal the student's mastery of course material at the 80% level. Limited retesting is available to achieve this. The mastery approach provides for personalized interventions and advising to help students achieve the mastery level. Minimums of 80% on each unit test and 70% minimum on the final exams are required to pass. Grading yields a Pass/Fail or letter grade of B⁻ or higher. Students who remain active in the course through to its conclusion, but fail to achieve the required level of proficiency, may at the instructor's discretion, be eligible for the "R" grade.
9. **General Topical Outline (Optional):**
MAT010 Fundamentals of Arithmetic
 - I. Whole Numbers
 - A. Addition
 - B. Subtraction
 - C. Multiplication
 - D. Division
 - E. Exponents
 - F. Order of operations

- G. Rounding and Estimation
- H. Applied Problems

II. Decimal Notation

- A. Addition
- B. Subtraction
- C. Multiplication
- D. Division
- E. Exponents
- F. Order of operations
- G. Rounding and Estimation
- H. Applied Problems

III. Fraction Notation

- A. Addition
- B. Subtraction
- C. Multiplication
- D. Division
- E. Exponents
- F. Order of operations
- G. Rounding and Estimation
- H. Applied Problems

IV. Ratio, Rates and Proportions

- A. Concept of Rates, Ratios and Proportions
- B. Solving Proportions
- C. Application of Proportions
- D. Understanding Percents
- E. Converting between Whole Numbers, Decimals and Percents
- F. Applied Problems