# Basic Arithmetic MAT 082 Course Information

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## Textbook Information

**Title:** Developmental Mathematics, Basic Mathematics, and Algebra, 4rd edition  
**Author:** Lial, Hornsby, McGinnis, Salzman, Hestwood  
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**Catalog Description:** Development of arithmetic skills as a foundation for other mathematics courses, stressing number and awareness and arithmetic processes.

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Measurable Student Learning Outcomes

1. **(Application Level)** Perform basic operations of addition, subtraction, multiplication and division using whole numbers, fractions, and decimals.

2. **(Application Level)** Apply the rules of ratios, proportions and percents to solve word problems.

3. **(Comprehension Level)** Estimate solutions to problems using a variety of methods.

4. **(Application Level)** Apply methods of unit conversion in and between the metric and American systems to solve problems.

5. **(Application Level)** Demonstrate appropriate order of operations.

6. **(Analysis Level)** Calculate the measures of central tendency (mean, median, mode).

7. **(Analysis Level)** Apply different problem solving strategies to application problems.

Internal Standards

1. Without the use of a calculator, apply appropriate rules to add, subtract, multiply and divide two given numbers.

2a. Express numerical quantities as a ratio.

2b. Use the concept of proportion to solve for the missing quantity in an equation.

2c. Apply the concepts of percent to find the amount, base or percent in a given problem.

2d. Use the appropriate formula to solve a simple interest problem.

3. Apply different estimation techniques (front-end estimation, rounding by 5) to check the accuracy of answers.

4a. Use conversion factors to convert units of measurement within the American system (i.e., inches to feet).

4b. Use conversion factors to convert units of measurement within the metric system (i.e., liters to milliliters).

4c. Use conversion factors to convert units of measurement from one system to another (i.e., yards to meters).

5. Use order of operations to fully simplify a multi-operation expression without the use of a calculator.

6. Evaluate the mean, median and mode of a data set.

7. Utilize different techniques to solve application problems, including, but not limited to, solving a simpler problem, the four-step method, story translation and backwards substitution.