

**DELAWARE TECHNICAL & COMMUNITY COLLEGE**  
**COLLEGEWIDE COURSE SYLLABUS**

**Campus:** Stanton

**Department:** Mathematics/Physics

**Course Number and Title:** MAT 120 - Math For The Behavioral Sciences

**Instructor Name:**                      **Telephone:**                      **E-mail:**

**Prerequisites:** MAT 012 or required math score on College Placement Test

**Corequisites:** None

**Course Hours and Credits:** 3:0:3

**Course Description:** This course presents an arithmetic review of practical mathematics, ratios and proportions, percentages, basic algebraic principles, introductory statistical concepts, and word problem applications.

**Materials:** Electronic calculator

**Method of Instruction:** Lecture

**Manuals:** None

## CORE COURSE PERFORMANCE OBJECTIVES

The student will be able to:

1. Interpret set theory and its applications to the real world. (CCC 1, 2, 7)
2. Perform basic operations with real numbers. (CCC 7)
3. Solve problems using algebra. (CCC 2, 7)
4. Apply ratio, proportions, percents and simple and compound interest to solve problems in business. (CCC 2, 7)
5. Compute, analyze and interpret data. (CCC 2, 6, 7)

## MEASUREABLE PERFORMANCE OBJECTIVES

- 1. Interpret set theory and its applications to the real world. (CCC 1, 2, 7)**
  - 1.1 Solve problems by applying inductive reasoning.
  - 1.2 Solve problems by applying deductive reasoning.
  - 1.3 Recognize a developing pattern.
  - 1.4 Answer questions by reading a given graph.
  - 1.5 Describe a given set by all three forms.
  - 1.6 Draw a Venn diagram for a given set.
  - 1.7 List the subsets of a given set.
  - 1.8 Perform set operations on one or more given sets.
  - 1.9 Analyze the results of given surveys.
  - 1.10 Given a number, identify which set(s) to which it belongs.
- 2. Perform basic operations with real numbers. (CCC 7)**
  - 2.1 Determine the prime factorization of a given number.
  - 2.2 Determine the lowest common multiple or greatest common factor of a set of numbers in order to solve application problems.
  - 2.3 Use the order of operations to evaluate problems containing real numbers.
  - 2.4 Solve application problems involving real numbers.
  - 2.5 Express a given number in any form.
- 3. Solve problems using algebra. (CCC 2, 7)**
  - 3.1 Solve a given linear equation.
  - 3.2 Solve application problems involving proportions or linear equations.
  - 3.3 Solve linear inequalities by graphing.
  - 3.4 Apply rules of exponents to the simplification of expressions involving integral exponents.
- 4. Apply ratio, proportions, percents and simple and compound interest to solve problems in business. (CCC 2, 7)**
  - 4.1 Calculate the measures of central tendency, dispersion, position.
  - 4.2 Determine the simple or compound interest for a given principle.

- 4.3 Calculate the interest for a closed-end or open-ended credit account.
- 4.4 Calculate a monthly mortgage payment.

**5. Compute, analyze and interpret data. (CCC 2, 6, 7)**

- 5.1 Determine all possible results for a given task.
- 5.2 Determine the number of permutations and/or combinations for a given set of data.
- 5.3 Determine the probability that an event will occur.
- 5.4 Determine the odds in favor of or against an event happening.
- 5.5 Construct a frequency distribution for a given set of data.
- 5.6 Display a given set of data graphically.
- 5.7 Determine the position of a piece of data on the standard normal curve.

**EVALUATION CRITERIA**

Students will demonstrate proficiency on all Measurable Performance Objectives at least to the 75% level. The grade will be determined using the College Grading System:

92 - 100	A
83 - 91	B
75 - 82	C
0 - 74	R

**Students should refer to the Student Handbook for information on Academic Standing Policy, Academic Honesty Policy, Students Rights and Responsibilities and other policies relevant to their academic progress.**