

DELAWARE TECHNICAL & COMMUNITY COLLEGE
COLLEGEWIDE COURSE SYLLABUS

Campus:	Stanton	
Department:	Mathematics/Physics	
Course Number and Title:	MAT 201 -- Mathematics for Teachers I	
Instructor Name:	Telephone:	E-mail:
Prerequisites:	MAT 015 or required math score on College Placement Test.	
Corequisites:	None	
Course Hours and Credits:	4:0:4	
Course Description:	This course is designed to provide prospective teachers with the knowledge and skills necessary to effectively communicate mathematical concepts. Topics include techniques of problem solving, set theory, number theory, the real number system, elementary algebra, and an introduction to geometry.	
Materials:	Each student is required to have an electronic calculator capable of scientific calculations. Calculators with QWERTY keyboards are inappropriate for this course and will not be permitted in test situations.	
Methods of Instruction:	Lecture or Online	
Manuals:	None	

CORE COURSE PERFORMANCE OBJECTIVES

The student will be able to:

1. Demonstrate the ability to teach techniques of problem solving. (CCC 1, 3, 7)
2. Use principles of set theory to solve problems. (CCC 2, 7)
3. Use principles of number theory to solve problems. (CCC 2, 7)
4. Perform operations using the real number system. (CCC 7)
5. Solve problems using elementary algebra. (CCC 2, 7)
6. Define basic geometric terms. (CCC 1, 2)

MEASURABLE PERFORMANCE OBJECTIVES

- 1. Demonstrate the ability to teach techniques of problem solving. (CCC1, 3, 7)**
 - 1.1 Apply logic to solve problems.
 - 1.2 Apply algorithms for estimation of addition, subtraction, multiplication, and division of whole numbers.
- 2. Use principles of set theory to solve problems. (CCC 2, 7)**
 - 2.1 Describe sets, using appropriate set notations.
 - 2.2 Perform set operations and identify their properties.
 - 2.3 Identify functions and relationships of sets.
- 3. Use principles of number theory to solve problems. (CCC 2, 7)**
 - 3.1 Become familiar with the history, development, and theory of number systems.
 - 3.2 Perform basic operations of addition, subtraction, multiplication, and division of whole numbers.
 - 3.3 Use the commutative, associative, identity, distributive, and closure properties on real numbers.
 - 3.4 Perform operations using clock and modular arithmetic.
 - 3.5 Understand the historical background of rational numbers.
 - 3.6 Understand the different contextual uses for fractions.
- 4. Perform operations using the real number system. (CCC 7)**
 - 4.1 Apply divisibility rules for numbers.
 - 4.2 Identify prime and composite numbers and use them to perform prime factorization.
 - 4.3 Find the greatest common factor and the least common multiple of a set of numbers.
 - 4.4 Compute in other bases.
 - 4.5 Perform basic operations of addition, subtraction, multiplication, and division of decimals.

- 4.6 Convert decimals into percentages and fractions.
 - 4.7 Compute interest rates using simple and compound interest methods.
 - 4.8 Be able to graphically display fractions, decimals and percentages.
 - 4.9 Compute using basic operations of addition, subtraction, multiplication, and division of fractions within application problems.
 - 4.10 Compute using ratios and proportions.
- 5. Solve problems using elementary algebra. (CCC 2, 7)**
- 5.1 Compute using the basic operations of addition, subtraction, multiplication, and division over the set of real numbers.
 - 5.2 Apply the order of operations in arithmetic and algebraic expressions
 - 5.3 Comprehend and apply the principles of linear graphing, linear inequalities and systems of equations.
- 6. Define basic geometric terms. (CCC 1, 2)**
- 6.1 Identify, describe and classify different types of triangles and quadrilaterals.

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.