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DELAWARE TECHNICAL & COMMUNITY COLLEGE

COLLEGEWIDE COURSE SYLLABUS

Campus:	Stanton
Department:	Mathematics/Physics
Course Number and Title:	MAT 015 - Elementary Algebra
Instructor Name:	**Telephone:** **E-mail:**
Prerequisites:	MAT 012 or required math scores on College Placement Test.
Corequisites:	None
Course Hours and Credits:	4:0:4
Course Description:	A review of elementary algebra, including operations on real numbers, simplification and evaluation of algebraic expressions, solving equations and inequalities, solving word problems, exponents, polynomials, factoring, graphing, simultaneous equations, radicals and algebraic fractions.
Materials:	A scientific calculator is suggested. Although the TI-83+ Graphic Calculator is recommended by the Mathematics/Physics Department for use in the degree level courses, it is not necessary for this course. Calculators with QWERTY keyboards are inappropriate for this course and will not be permitted in test situations.
Method of Instruction:	Lecture
Manuals:	None

CORE COURSE PERFORMANCE OBJECTIVES:

The student will be able to:

1. Perform basic operations on real numbers. (CCC 7).
2. Perform operations with algebraic expressions including applications. (CCC2, 7)
3. Perform basic operations with exponents and scientific notation. (CCC 7)
4. Perform basic operations and factoring of polynomials. (CCC 7)
5. Graph functions. (CCC 7)
6. Solve equations and inequalities including applications. (CCC 2,7)
7. Solve systems of simultaneous equations including applications. (CCC 2,7)
8. Perform operations on radicals and radical expressions. (CCC 7)
9. Perform basic operations on algebraic fractions. (CCC 7)

MEASURABLE PERFORMANCE OBJECTIVES

1. Perform basic operations on real numbers. (CCC 7).
- 1.1 Identify real numbers and properties of real numbers.
- 1.2 Perform the basic operations with signed numbers.
- 1.3 Find reciprocals of real numbers.
- 1.4 Find absolute value of a number.

2. Perform operations with algebraic expressions including applications. (CCC 2, 7)
- 2.1. Simplify expressions using order of operations.
- 2.2 Evaluate expressions.
- 2.3 Translate word phrases to numerical or algebraic expressions.

3. Perform basic operations with exponents and scientific notation. (CCC 7)
- 3.1 Simplify monomial expressions involving integral exponents.
- 3.2 Given a decimal number, write in scientific notation and vice versa.
- 3.3 Evaluate exponential expressions.

4. Perform basic operations and factoring of polynomials. (CCC 7)
- 4.1 Add, subtract, multiply, and divide monomial and/or polynomial expressions.
- 4.2 Factor the greatest common factor from a polynomial.
- 4.3 Factor difference of squares.
- 4.4 Factor trinomials.
- 4.5 Factor expressions containing four terms by grouping.

5. Graph functions. (CCC 7)

5.1 Graph a linear equation and linear inequality.
5.2 Find the slope of a line given two points or the equation of a line.
5.3 Graph solution set for equation and inequality on a number line.
5.4 Identify x and y intercepts.

6. Solve equations and inequalities including applications. (CCC 2,7)

6.1 Write the equation of a linear equation given appropriate information.
6.2 Solve first degree equations and inequalities in one unknown.
6.3 Solve applied problems using percent, geometry, averages, and formulas.
6.4 Solve quadratic equation by factoring.
6.5 Solve rational equations.

7. Solve systems of simultaneous equations including applications. (CCC 2,7)

7.1 Determine when lines are parallel or perpendicular.

8. Perform operations on radicals and radical expressions. (CCC 7)

8.1 Find rational square roots.
8.2 Solve applied problems using the Pythagorean Theorem.

9. Perform basic operations on algebraic fractions. (CCC 7)

9.1 Find all values for which a rational expression is undefined.
9.2 Write algebraic fractions in lowest terms.
9.3 Add, subtract, multiply, and divide algebraic fractions.

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.