

DELAWARE TECHNICAL & COMMUNITY COLLEGE
COLLEGEWIDE COURSE SYLLABUS

Campus:	Stanton	
Department:	Mathematics/Physics	
Course Number and Title:	MAT 075 - Intermediate Algebra	
Instructor Name:	Telephone:	E-mail:
Prerequisites:	MAT 015 or required math scores on College Placement Test.	
Co-requisites:	None	
Course Hours and Credits:	4:0:4	
Course Description:	A course for students with some proficiency in algebraic techniques who need further preparation for higher level courses. Topics include solving and graphing linear equations and inequalities, functions, systems of linear equations, quadratic and radical equations.	
Required Text:	Lial, Hornsby, and McGinnis, <u>Introductory and Intermediate Algebra</u> , Third Edition, Addison Wesley Longman, Inc, Reading, MA, 2006.	
Materials:	The Mathematics/Physics Department suggests the use of a TI-83+ Graphic Calculator. Lecture demonstrations and instruction will include the use of the TI-83+. Calculators with QWERTY keyboards are inappropriate for this course and will not be permitted in test situations.	
Method of Instruction:	Lecture or Telecourse	
Manuals:	None	

CORE COURSE PERFORMANCE OBJECTIVES:

The student will be able to:

1. Apply the principles of algebra to solve linear equations and inequalities. (CCC 2, 7)
2. Graph and derive linear equations by the slope-intercept and point-slope methods. (CCC 7)
3. Simplify algebraic expressions with integral and rational exponents. (CCC 7)
4. Solve quadratic equations using the zero factor property, square root property, and the quadratic formula. (CCC 7)
5. Simplify expressions and solve equations involving radicals. (CCC 7)

MEASURABLE PERFORMANCE OBJECTIVES

- 1. Apply the principles of algebra to solve linear equations and inequalities. (CCC 2, 7)**
 - 1.1 Operate on real numbers using the proper order of operations.
 - 1.2 Solve linear equations.
 - 1.3 Solve a system of two linear equations graphically and algebraically.
 - 1.4 Solve linear inequalities stating solution in interval form and graphing solution on a number line.
 - 1.5 Solve appropriate application problems.
- 2. Graph and derive linear equations by the slope-intercept and point-slope methods. (CCC 2, 7)**
 - 2.1 Calculate the slope of a line given either two points on the line or an equation of the line.
 - 2.2 Graph a line by using a t-table or ordered pairs and by using slope and a point on the line.
 - 2.3 Find the equation of a line given two points or given one point and the slope.
 - 2.4 Determine, without graphing, whether two lines are parallel, perpendicular, or neither.
 - 2.5 Identify and evaluate functions.
 - 2.6 Find the domain and the range of functions.
 - 2.7 Solve problems involving direct, inverse, joint, and combined variation.

- 3. Simplify algebraic expressions with integral and rational exponents. (CCC 7)**
 - 3.1 Use properties of integral and rational exponents to simplify and evaluate monomials.
 - 3.2 Perform the four operations of arithmetic on polynomials, including synthetic division.
 - 3.3 Convert between decimal and scientific notation.
 - 3.4 Simplify rational expressions and complex fractions.
 - 3.5 Add, subtract, multiply, and divide rational expressions.
 - 3.6 Solve equations involving rational expressions.

- 4. Solve quadratic equations using the zero factor property, square root property, and the quadratic formula. (CCC 2, 7)**
 - 4.1 Factor polynomials.
 - 4.2 Solve quadratic equations by factoring, square root property, or quadratic formula.
 - 4.3 Solve appropriate application problems.

- 5. Simplify expressions and solve equations involving radicals. (CCC 7)**
 - 5.1 Simplify radical expressions.
 - 5.2 Convert fractional exponents to radical form and vice-versa.
 - 5.3 Perform the basic operations with radical expressions.
 - 5.4 Solve equations containing radical expressions.

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.