COURSE OUTLINE

Course: MAT 111, Algebra 2
Section #: 22735 (M/W 2:00 pm – 3:40 pm Shinnecock 215)
Instructor Mrs. Judith Williams
Office: Math office - Shinnecock 220; Phone: (631) 548-2628 (Leave a message)
Email: williaj@sunysuffolk.edu
Web Site: D2L or http://www2.sunysuffolk.edu/williaj
Office Hours: After class Mon/Wed; before class at request; Friday mornings
Prerequisite: SC or higher in MA07 or high school equivalent

OBJECTIVES: Upon successful completion of this course, students should be able to:

• solve the following types of equations: linear equations, quadratic equations, absolute-value equations, equations involving rational expressions, equations involving radicals, systems of two equations in two unknowns, systems of three equations in three unknowns;
• solve the following types of inequalities: linear inequalities, absolute-value inequalities, systems of linear inequalities in two variables;
• graph the following: lines, parabolas, linear inequalities in two variables;
• perform the elementary operations on the following: polynomials, rational expressions, complex numbers, and radicals;
• simplify algebraic expressions including: reducing to lowest terms; complex fractions; algebraically re-writing results using basic definitions, laws of exponents, distributive law, factoring, and other basic properties of real numbers; rationalizing the denominator;
• set up and solve word problems which apply linear equations, quadratic equations, equations involving rational expressions;
• interpret the basic relationships linking linear equations and linear inequalities in two variables, and parabolic equations to their graphs such as: solution sets, slope, parallel and perpendicular lines, forms of equations of lines, x-intercepts, y-intercepts, intersection of lines.

STUDENT REQUIREMENTS:

Attendance: College wide attendance policy/instructor’s policy: All students are expected to attend every lecture of each course for which they are registered. Students are responsible for all that transpires in class whether or not they are in attendance. The college defines excessive absence or lateness as missing more than one week of classes (3 lectures for a 4 credit class). In the event of excessive absence the instructor reserves the right to fail the student. If dropping the class for any reason, go to the registrar office and officially withdraw. Failure to do so will result in a grade of F. Students should arrive to class prepared with text book, notebook and calculator ready to work for the full time. Getting up and walking out is a disruption for other students in the class as well as the instructor. Students are required to behave in accordance with the student code of conduct as outlined in the student handbook. An atmosphere of mutual respect will be maintained at all times in the classroom. Any student who is disruptive or violates proper classroom decorum (as outlined in the student handbook) will be asked to leave. See Attendance Policy and Grading Procedures for more information on student requirements.

CALCULATOR: Any ordinary scientific calculator or graphing will be acceptable for use during class and on exams except for the TI92 or any other calculator that performs symbolic manipulation.
USE OF ANY OTHER ELECTRONIC DEVICE IS PROHIBITED. All cell phones, beepers, etc. will be OFF and properly stowed at all times during class. There will be no sharing of calculators.

Grading:
There will be at 4 tests, additional graded work consisting of quizzes, homework and class work and a final exam. The lowest of the 4 tests will be dropped provided you do not miss any exams. Final exams do not get dropped under any circumstances. There are no make up tests. The test you missed will be the one that is dropped. If you miss 2 exams a 0 will be averaged in for the second missed test. If you miss a test, e-mail me. Quizzes, graded homework and class work will be averaged together. The lowest two grades will be dropped if all assignments are turned in. If missing any assignments beyond that a grade of 0 will be assigned. It is important to do all homework. Homework should be done in your notebook. Any problems will be discussed at the beginning of the next class.

Exams ............................................................... 60%
Quizzes, homework, class work .............................. 20%
Final Examination ............................................. 20 %
Total ............................................................... 100%

The letter grade assigned will base on the following scale:
A 100% - 90%  B+ 89% - 85%  B 84% - 80%  C+ 79% - 75%
C 74% - 70%  D+ 69% - 65%  D 64% - 60%  F 59% - 0%

Note: If all work is handed in and you have taken all 4 tests and your average is an A you do not have to take the final exam. If you are missing a test you must take the final exam no matter what your average. If you do not show up for the final exam a 0 will be averaged in with your tests. If your final exam is your lowest test it will be averaged in with your lowest test score and that grade will be used to find the final average.

Academic Skills Center
Students should be aware of the Academic skills Center in Orient 234 (548-2594) where FREE tutoring and extra help is available. Make use of the help you can get there.

Class outline
Unit 1
BASIC PROPERTIES AND DEFINITIONS.
1.1 Fundamental Definitions and Notation.
1.2 The Real Numbers.
1.3 Properties of Real Numbers.
1.4 Arithmetic with Real Numbers.
EQUATIONS AND INEQUALITIES IN ONE VARIABLE.
2.1 Linear Equations in One Variable.
2.2 Formulas.
2.3 Applications.
2.4 Linear Inequalities in One Variable.
2.5 Equations with Absolute Value
Quiz 1
Quiz 2
2.6 Inequalities Involving Absolute Value
TEST 1
Unit 2
EQUATIONS AND INEQUALITIES IN TWO VARIABLES.
3.1 Paired Data and the Rectangular Coordinate System.
3.2 The Slope of a Line.
3.3 The Equation of a Line.
3.4 Linear Inequalities in Two Variables.
Quiz 3
3.5 Introduction to Functions.
3.6 Function Notation.
3.8 Variation.
SYSTEMS OF LINEAR EQUATIONS AND INEQUALITIES.
4.1 Systems of Linear Equations in Two Variables.
4.2 Systems of Linear Equations in Three Variables.
Quiz 4
4.5 Applications.
4.6 Systems of Linear Inequalities.
Test 2
Unit 3
EXPONENTS AND POLYNOMIALS.
5.1 Properties of Exponents. (Also 7.1)
5.2 Polynomials, Sums, and Differences.
Quiz 5
5.3 Multiplication of Polynomials.
5.4 The Greatest Common Factor and Factoring by Grouping.
5.5 Factoring Trinomials.
Quiz 6
5.6 Special Factoring.
5.7 Factoring: A General Review.
RATIONAL EXPRESSIONS AND RATIONAL FUNCTIONS.
6.1 Basic Properties and Reducing to Lower Terms.
6.2 Division of Polynomials and Difference Quotients.
6.3 Multiplication and Division of Rational Expressions.
Quiz 7
6.4 Addition and Subtraction of Rational Expressions.
6.5 Complex Fractions.
Test 3
Unit 4
QUADRATIC FUNCTIONS.
5.8 Solving Equations by Factoring.
6.6 Equations Involving Rational Expressions.
8.5 Graphing Parabolas
Quiz 8
8.1 Completing the Square.
8.2 The Quadratic Formula.
8.3 Additional Items Involving Solutions to Equations.
Quiz 9
8.4 Equations Quadratic in Form.
7.7 Complex Numbers (Introduce imaginary numbers)
Review of Quadratic equations graphically and solving.
Practical applications
Test 4

Unit 5 (Finish up the sections in the chapters on radicals and complex numbers)

RATIONAL EXPONENTS AND ROOTS.

- 7.1 Rational Exponents with variables
- 7.3 Simplified Form for Radicals.
- 7.4 Addition and Subtraction of Radical Expressions.
- 7.5 Multiplication and Division of Radical Expressions.
- 7.6 Equations with Radicals.
- 7.7 Complex Numbers.

Quiz 10 (Will not be dropped, will count as 2 quizzes)

Review for Final exam

Final exam