Name of Course: College Algebra and Trigonometry I  
Catalog Number: MAT124  
Section: 22740/300  
Prerequisite: C or better in MAT111  
Course Instructor: Associate Professor C. Kulis  
Telephone: 548-3582 or 548-2628 (secretary)  
E-mail: kulisc@sunysuffolk.edu  
Office Hours: Monday 9:00-9:30am; 12:15-1:30 pm  
Tuesday 1:15-2:00 pm  
Wednesday 9:00-9:30 am; 12:30-1:30 pm  
Thursday 1:15-2:15 pm  
Shinnecock Bldg., room 221

Course Philosophy:
A presentation of advanced algebraic concepts and right triangle trigonometry for the student with MAT124 or Sequential II competency who plans on taking subsequent required courses in the Business, Health Careers, Science, or Mathematics curricula. Topics will include techniques for solving algebraic statements, graphs and applications of rational, exponential, and logarithmic functions and polynomials with rational zeros, right triangle trigonometry, and applications using the Pythagorean Theorem and standard reference angles.

College-wide attendance policy: Each student is expected to attend every class session for which he or she is registered. The student is responsible for all that transpires in class whether he or she is in attendance or not. The College defines excessive absence or lateness as more than the equivalent of one week of class meetings during the semester.

Attendance policy: Three unexcused absences may lead to withdrawal from the course. Students who wish to withdraw must do so officially (via the registrar) by the official withdrawal date (Monday, March 22nd) set in the academic calendar. A student who wishes to withdraw after midterm will receive a W if he or she is passing and an F if failing. It is the student’s responsibility to acquire class notes and assignments when a class is missed.

Classroom Civility: The classroom experience is a shared one. Class sizes are relatively large and the potential for distraction is significant for both your peers and me. In order to reduce this from occurring, the following guidelines are given:

a) Arrive on time and do not prepare to leave until the class is dismissed.
b) You are not to work (read, write, text message, collaborate, etc.) on
material that is not directly relevant to the ongoing class activity. If you are caught texting, you will be asked to leave the classroom for the day. It will be counted as an absence.

c) Cell phones are to be turned off prior to entering class. I consider a ringing cell phone a distraction. Should your cell phone go off during class, you will be asked to leave the classroom for the day. It will be counted as an absence. Misuse of cell phones, such as calls or texting during a test, will be considered academic dishonesty. It may carry serious penalty including but not limited to course failure or dismissal from the college.

d) Leaving class prior to dismissal will count as an absence unless you are attending to personal hygiene or you have spoken with me prior to class starting.

e) Sleeping in class is unacceptable.

f) Conversations with your peers are not to occur unless they are part of the designated discussion activity. Respect what I and your fellow students have to say. All questions are important.

Student requirements: During each class session I will introduce new topics and review previous topics. I expect a great deal of participation on the part of all students. Homework will be given for every class. The homework will cover new topics covered in class. You must plan adequate time outside of class to work on homework and see me or go to the Academic Skills Center (O234) for extra help.

Grading policy: There will be five exams (85%) and a cumulative final (15%). There will be no makeup exams. Arrangements must be made in advance for unusual circumstances. I will drop the lowest grade on a test. An absence from a test will be considered the lowest grade. An absence from a second test will require me to give a zero as one of your grades.

Calculator policy: The use of a TI83, TI84, or TI86 graphing calculator is recommended.

Required textbook: Precalculus, 5th edition
Michael Sullivan, Michael Sullivan III
Prentice Hall

Topic Outline

Topic 1: Graphs
- Distance Formula
- Midpoint Formula
- Tests for Symmetry
- Equation of a Circle
- Solving Quadratic Equations
Linear Inequalities
Equations of Lines

**Topic 2:** Functions and their Graphs
- Function Notation
- Domain and Range of a Function
- Operations on Functions
- Even and Odd Functions

**TEST 1**
- Increasing or Decreasing Functions
- Local Maxima and Minima
- Library of Functions
- Graphing Functions Using Transformations

**Topic 3:** Quadratic and Polynomial Functions
- Graphing Quadratic Functions
- Vertex and Axis of Symmetry
- Power Functions
- Analyzing the Graph of a Polynomial Function

**TEST 2**
**Topic 4:** Rational Functions
- Analyzing the Graph of a Rational Function
- Remainder Theorem
- Factor Theorem
- Rational Zeros Theorem
- Intermediate Value Theorem
- Complex Zeros
- Conjugate Pairs Theorem

**TEST 3**
**Topic 5:** Exponential and Logarithmic Functions
- One-to-one and Inverse Functions
- Evaluating Exponential Functions
- Graphing Exponential Functions
- Number $e$
- Solving Exponential Equations
- Evaluating Logarithmic Functions
- Graphing Logarithmic Functions
- Solving Logarithmic Equations
- Properties of Logarithms
- Compound Interest
TEST 4

**Topic 6:** Trigonometric Functions
- Angles and their Measures
- Converting from Degrees to Radians
- Converting from Radians to Degrees
- Exact Values of Trigonometric Functions of 45°, 30°, 60°
- Domain and Range of Trigonometric Functions
- Period of Trigonometric Functions
- Graphs of Sine, Cosine, and Tangent Functions
- Amplitude and Period of Sinusoidal Functions
- Application of Right Triangle Trigonometry

TEST 5

Final