Course Outline for MAT124 (Precalculus Mathematics)  
Course number 93777

Instructor: William Matros  
Phone: 631-288-5672  
E-mail: wmatros@optonline.net

Textbook: Precalculus (Enhanced with Graphing Utilities)  
5th Edition  
Sullivan/Sullivan

Grading: Short Quizzes, Tests, and Assignments (65% of grade)  
Final Examination (35% of grade)

FINAL GRADE is determined according to the guidelines of the  
Suffolk County Community College Handbook

Attendance: All students are expected to attend every session of the course. If  
more than 3 classes are missed, the student will be dropped from the  
course.

Course Philosophy: MAT124 presents mathematical ideas and concepts in a spiraled  
approach. Assignments will be given in a database format with constant  
review of previous material. If the new material is hard to master, then  
successful completion of old material will still reinforce concepts from the  
course material.

Course Objectives: Students will be able to:

I. Define a function and be able to perform the algebra and geometry  
of functions

II. Demonstrate an understanding of domain, range, symmetric  
functions, composite functions, inverse functions, and circular  
functions.

III. Sketch graphs of quadratic functions and understand the meaning  
of real and complex zeros of such functions

IV. Comprehend the fundamental theorem of algebra and be able to  
solve polynomial equations by finding the roots.

V. Sketch graphs of polynomial functions

VI. Sketch graphs of rational functions
VII. Sketch graphs of exponential and logarithmic functions

VIII. Solve exponential and logarithmic equations

IX. Sketch the trig functions and their inverses

X. Verify trigonometric identities

XI Solve trigonometric equations, solve triangles, and compute area of triangle

XII. Complete computations with complex numbers in both rectangular and trig form, including the use of DeMoivre’s Theorem

XIII. Analyze, compare, and graph polar functions

XIV. Solve problems using both linear and non-linear systems of equations and inequalities

XV. Work with arithmetic and geometric sequences and series (optional)

XVI. Work with mathematical induction (optional)

XVII Develop proficiency with a graphing calculator for both computations and graphing of functions

Requirements: Students are responsible for all assignments given (a printed database of assignments will be provided.)

Quizzes will be given with high frequency.

If there are enough quizzes then the lowest grade might be dropped. A missed quiz will therefore be considered the drop grade.

Calculator: The TI 83+ or TI 84 is recommended and will be used throughout the class (graphing functions, polar coordinates, calculations, sequences and series) Students will demonstrate proficiency with the technology. In addition students wishing to demonstrate knowledge of EXCEL may complete some assignments using Excel.

Withdrawals: Any student wishing to withdraw from the course must process a withdrawal form through the Registrar by the mid-semester withdrawal date as given in the college catalog.
Course Outline: Chapters to be covered

Chapter 1: Graphs
Chapter 2: Functions and their graphs
Chapter 3: Linear and Quadratic Functions
Chapter 4: Polynomial and Rational Functions
Chapter 5: Exponential and Logarithmic Functions
Chapter 6: Trigonometric Functions
Chapter 7: Analytic Trigonometry
Chapter 8: Applications of trigonometric functions
Chapter 9: Polar Coordinates; Vectors
Chapter 10: Analytic Geometry
Chapter 11: Systems of equations and inequalities

HAVE A GREAT SEMESTER!