Pre-Calculus – Fall 2010

67-108-001   M Tu W Th F   3:00 – 4:00 PM   Clow 13

Instructor: Rohini Muthuvel
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Office hours: M W F   10:20 – 11:20 AM
                         Tu Th   1:50 – 2:50 PM
                         Others by appointment
Text: Math 104, *College Algebra*, Third Edition by Barnett, Ziegler, Byleen, and Sobecki.
                 Math 106, Trigonometry**,** Third Edition by Barnett, Ziegler, Byleen, and Sobecki.

Calculator: A graphing calculator is required and used for homework, quizzes, and tests. Note: TI-89 and TI-92 are not allowed.
                  Bring your calculator to class every day.

Course Description: In this course, we will cover topics including functions, graphs, data analysis and modeling of real world problems, equations and inequalities, polynomial, rational functions, exponential and logarithmic functions, basic circular functions and their inverses, trigonometric identities and equations, triangle trigonometry, law of Sines and law of Cosines.
Students may not receive credit for both Mathematics 104 and 108.

Prerequisite: Mathematics 103 with grade of C or better or placement.

Description of Students Who Take the Course:
Mathematics 108 satisfies the University minimum general education mathematics requirement. It is intended for students whose programs require additional mathematics and science courses including Calculus.

General Goals and Objectives for the Course:
The goal of this course is to give students appreciation of mathematical tools they need in order to be successful in other mathematics and science courses. It focuses on problem solving, critical thinking and learning basic concepts in Algebra and Trigonometry.

Course Coverage:
Chapter 1: Functions, Graphs, and Models
       1.1: Using Graphing Calculators
       1.2: Functions
       1.3: Functions: Graphs and Properties
       1.4: Functions: Graphs and Transformations
       1.5: Operations on Functions; Composition
       1.6: Inverse Functions

Chapter 2: Modeling with Linear and Quadratic Functions
       2.1: Linear Functions
       2.2: Linear Equations and Models
       2.3: Quadratic Functions
       2.4: Complex Numbers
       2.5: Quadratic Equations and Models
       2.6: Additional Equation-Solving Techniques
       2.7: Solving Inequalities

Chapter 3: Polynomial and Rational Functions
       3.1: Polynomial Functions and Models
       3.2: Polynomial Division
       3.3: Real Zeros and Polynomial Inequalities
       3.4: Complex Zeros and Rational Zeros of Polynomials
       3.5: Rational Functions and Inequalities
       3.6: Variation and Modeling

Chapter 4: Exponential and Logarithmic Functions
       4.1: Exponential Functions
       4.2: Exponential Models
       4.3: Logarithmic Functions
       4.4: Logarithmic Models
       4.5: Exponential and Logarithmic Equations

Chapter 5: Trigonometric Functions
       5.1: Angles and Their Measure
       5.2: Trigonometric Functions: A Unit Circle Approach
       5.3: Solving Right Triangles
       5.4: Properties of Trigonometric Functions
       5.5: More General Trigonometric Functions
       5.6: Inverse Trigonometric Functions

Chapter 6: Trigonometric Identities and Conditional Equations
      6.1: Basic Identities and Their Use
      6.2: Sum, Difference, and Cofunction Identities
      6.3: Double-Angle and Half-Angle Identities
      6.4: Product-Sum and Sum-Product Identities
      6.5: Trigonometric Equations

Chapter 7: Additional Topics in Trigonometry
      7.1: Law of Sines
      7.2: Law of Cosines

Exam: There will be 5 exams each worth 100 points. The 5th exam will be a **comprehensive final exam**. Make-ups for missed exams will be available only in **very special circumstances**. You must call **before the scheduled exam in order for a make-up to be considered.**

Test dates
                Exam 1: September 28th
                Exam 2: October 19th
                Exam 3: November 9th
                Exam 4: December 3rd
                Final exam: December 17th

Quizzes: There will be many short quizzes (about 5 minutes long) at the beginning of many class periods. These will be worth 5 points each. **Quizzes must be taken at the time they are scheduled in class**, i.e., quizzes cannot be taken early or made up at a later time.

Homework: Homework will be assigned for each section. These problems will not be collected for grading but used for discussion.

Attendance: Attendance will be taken in each class. If absent, it is your responsibility to obtain the missed lecture notes and to do the assignment.

Grading: Exams (5)   80% (16% each)
            Quizzes   15%
            Attendance   5%

[91 , 100]	A	[82 , 86)	B	[70 , 75)	C	[55, 60)	D^-
[89 , 91)	A^-	[79 , 82)	B^-	[65 , 70)	D^+	Below 55	F
[86, 89)	B^+	[75, 79)	C^+	[60, 65)	D		

Remarks: If you have any problems, please feel free to see me during my office hours or make an appointment.
Tutors are available free of charge in Swart 113.

Cell phones should be turned off during class period.