Syllabus for AP Calculus BC

Purpose

The purpose of this course is to provide students with a rigorous foundation in Differential and Integral Calculus focusing on concepts and applications of calculus of a single variable and to prepare students to take the AP Calculus BC Exam for possible college credit. This course is equivalent to the first two semesters of college-level calculus.

Teacher

- **Mr. Sugar** • Math Office: 4th Floor, Room 447 • Classroom: 4th Floor, Room 405
- E-mail: mathguy@mathguy.org • Telephone: 973-292-2000 x3695 (voice mail)

- Extra Help: Mr. Sugar is available during lunch and after school (except Mondays) in Rm. 405 and via e-mail and the mathguy blog. (www.mathguy.org, click on blog.)

Curriculum Content

This course covers concepts and applications in the following areas:

- Functions and Models
- Limits and Rates of Change
- Derivatives
- Applications of Derivatives
- Riemann Sums and Integrals
- Applications of Integrals, Differential Equations
- Parametric, Polar, and Vector Forms
- Sequences & Series, Taylor/Maclaurin Series

In addition, proficiency with the use of the graphing calculator as a tool is an integral part of the course. Students are encouraged to purchase their own calculators for use in this course, in other math and science courses at MHS, and in college. The recommended calculator is the Texas Instruments TI-89 family of calculators.

Success in calculus depends heavily on the student's skills and knowledge of geometry, trigonometry, and, especially, algebra as well as his or her ability to reason and solve problems logically. Timely completion of every homework assignment is essential.

Assessment and Grading Strategy

Assessment and grading is based on daily completion of homework and performance on quizzes, tests, projects, and exams. Each marking period grade counts 20% of the course grade. The midterm and final each count 10%. In determining each marking period grade, the lowest test grade is weighted as three-fourths of a test. Homework, quizzes, and project grades are included.

Homework:

- Timely completion of homework is essential to learning and will be checked often at the start of class. Daily homework scores are awarded as follows: 0 for little or no work, 1 for at least half completed, and 2 for completed. To earn a 1 or 2, homework must be in pencil with work for each problem shown neatly and legibly. Homework counts 15% of your grade.
- Homework is posted at http://www.mathguy.org. Click on calc bc.

Quizzes, Project, and Tests:

- Written tests are given at the completion of a major unit of material.
- Short, unannounced quizzes may be given to assess progress between tests. Each quiz counts as one-fifth of a test. Quizzes and tests must be done in pencil.
- Projects, for which students are given about one week to complete, count as a test.

Exams:

- A midterm exam, with questions like those on AP Calculus AB exams, and a final exam, with questions like those on AP Calculus BC exams, are given.