

College of Staten Island, City University of New York (CUNY)

Math 229 (Section 6990): Fall 2011 Syllabus

Calculus Computer Lab

Instructor: **Joseph Maher**

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Office hours: M 1:25-3:20, Thu 3:35-4:25

Course location: MW 3:35-4:25 1S-108

Textbook: NA, *Matlab projects available from department website*, NA edition, NA ISBN:

Grading policy: 50% Matlab project
25% Midterm
25% Final

You must pass the exams to pass this course.

Additional info:

Disability policy: Qualified students with disabilities will be provided reasonable academic accommodations if determined eligible by the Office for Disability Services. Prior to granting disability accommodations in this course, the instructor must receive written verification of student's eligibility from the Office of Disability Services, which is located in 1P-101. It is the student's responsibility to initiate contact with the Office for Disability Services staff and to follow the established procedures for having the accommodation notice sent to the instructor.

Integrity policy: CUNY's Academic Integrity Policy is available online at <http://www.cuny.edu/about/info/policies/academic-integrity.pdf>

The College of Staten Island
Department of Mathematics
MTH 229 Calculus Computer Laboratory
Course Outline

The main objective of this course is to reinforce calculus concepts and explore the application of calculus to solving problems by making use of a series of computer projects. The student will be first introduced to mathematical software. In particular, MATLAB software will be used in this course. MATLAB has capabilities for both numerical and symbolic calculations. It can also create graphical output so that the results can be visualized more readily.

The following projects are integrated with the material covered in courses MTH 230 *Calculus I with Pre-Calculus* and MTH231 *Analytical Geometry and Calculus I*. Therefore, full appreciation of these projects requires a solid understanding of the course material.

1. Using MATLAB as a Calculator
2. Plotting Graphs in MATLAB
3. More on Graphing with MATLAB
4. Graphical Solutions to Equations
5. Investigating Limits in MATLAB
6. Approximate First and Second Derivatives
7. Critical and Inflection Points
8. Newtons' Method
9. Optimization
10. Definite Integrals and Riemann Sums

Examinations: There will be a midterm and a final examination.

Optional Materials:

Software: MATLAB is installed in several of the campus computer labs. However, if you wish to work from home, you can purchase the MATLAB Student Version Release 14 with Service Pack 3 (Includes MATLAB 7.1, Simulink 6.3, and key functions of the Symbolic Math Toolbox) at the student bookstore or online at <http://www.mathworks.com/academia>

Text: Online documentation can be found at

<http://www.mathworks.com/access/helpdesk/help/techdoc/matlab.shtml>

ROLE IN CURRICULUM

MTH 229 is a required laboratory for MTH 230 and MTH 231. It provides students experience with MATLAB, which is used in subsequent mathematics courses.

LEARNING GOALS AND ASSESSMENT PLAN

Learning Goal	Assessment
Solve and manipulate calculus-related expressions using MATLAB.	NA
Analyze and produce calculus-related graphs using MATLAB.	NA
Solve calculus-related applied problems using MATLAB	NA
	NA

When assessment activities are done, the results will be summarized in memorandum form and filed with the department chairperson for record keeping purposes.

Information obtained from assessment will be used to assess and self-reflect on the success of the course and to make any necessary changes to improve teaching and learning effectiveness.

Undergraduate Catalog Course Description

College of Staten Island

Course prefix:	MTH
Course number:	229
Course title:	Calculus Computer Laboratory
Subject	Mathematics
Minimum credits:	1.0
Maximum credits:	1.0
Hours per week:	2.0
Course description:	Computer projects to reinforce calculus concepts from numerical and graphical points of view will be presented. Suitable mathematical software will be utilized. Problem solving techniques using the computer will be discussed. The students will be assigned a number of projects to be completed individually or in small groups.
Prerequisite:	MTH 230 or MTH 231 or MTH 235.
Comments:	2 laboratory hours.