

## Course Syllabus

706 MATH 173 - 01  
Calculus I  
Dr. Goutziers  
Spring 2005

**Room:** Physical Science 106  
**Time:** MWRF 02:00 - 02:50 pm  
**Office:** Physical Science 112  
**Phones:** Office: (607) 436-3658  
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**Web Site:** employees.oneonta.edu/GoutziCJ  
**Office** **M 10:00 am W 11:00 am**  
**Hours:** **R 12:00 pm F 12:00 pm**  
**Textbook:** Calculus, *early transcendentals*

- *Author:* James Stewart
- *Edition:* Fifth
- *Publisher:* Brooks/Cole
- *Copyright:* 2003
- *ISBN:* 0-534-39321-7

**Symbolic** Maple, Release 9.5  
**Software:**

### **College Catalog Description:**

**MATH 173 Calculus I.** Math 173 and 174 constitute the first two-thirds of the standard 12-credit calculus sequence, 173-174-276. Topics include functions and their graphs, limits, differentiation, integration, derivatives and integrals of the elementary functions, polar coordinates, parametric equations, infinite series. (*LA, N, TQ*)

*Prerequisite:* 4 units high school math, or Math 105.

### **Course Goals and Objectives:**

Math 173 provides an introduction to the properties of functions of one variable. The goals of the course are to understand the fundamentals of differential calculus with respect to representations and operations, limits, derivatives, the chain rule, implicit differentiation, and the location of extrema. Historic references are made when appropriate.

To achieve the goals, students will, upon completion of the homework assignments, quizzes and exams,:

- 1) use a problem-solving approach to investigate and understand the mathematical content;
- 2) demonstrate an understanding of the principles and techniques of applying mathematics to other disciplines and to real world problems;
- 3) understand and apply numerical computational and estimation techniques and extend them to algebraic expressions;
- 4) use mathematical modeling to solve problems from fields such as natural sciences, social sciences, business and engineering;
- 5) use computer software and/or graphical calculators to explore and solve mathematical problems.

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**Course content:**

Mathematical modeling; inverse functions; exponential and logarithmic functions; inverse trigonometric functions; limits and continuity; derivatives, definition and rules for differentiation; related rates; linear approximations and differentials; l'Hospital's rule; Newton's method; curve sketching, extrema and inflection points, applications.

**Methods of Evaluation and Grading Policies:**

There will be three tests and three quizzes during the course of the semester. Tests and quizzes will be announced on my web site at least four days in advance. A comprehensive final exam is scheduled for Friday, May 13, 11:00 am - 1:30 pm, in Physical Science 106. Homework will be assigned daily and is due at the beginning of the next class meeting. Quizzes may be completed by groups of at most three students; homework, tests and final exams are an individual responsibility. All submitted homework should include a coversheet indicating the course, the date, the assignment number and the student's name. Homework assignments, including quiz and test announcements, and coversheets are published on my web site and updated daily. Homework grades depend on the percentage of assignments submitted.

|           |                      |
|-----------|----------------------|
| 00 - 50%  | no homework credit   |
| 51 - 80%  | half homework credit |
| 81 - 100% | full homework credit |

Submitted homework does not have to be perfect, but should show "reasonable attempt". Merely copying the problems does of course not constitute reasonable attempt.

Course grades are computed according to the following:

|                    |     |            |            |            |
|--------------------|-----|------------|------------|------------|
| <b>Tests:</b>      | 40% | 90 - 100 A | 77 - 80 B- | 64 - 67 D+ |
| <b>Quizzes:</b>    | 20% | 87 - 90 A- | 74 - 77 C+ | 60 - 64 D  |
| <b>Final Exam:</b> | 20% | 84 - 87 B+ | 70 - 74 C  | 57 - 60 D- |
| <b>Homework:</b>   | 20% | 80 - 84 B  | 67 - 60 C- | 0 - 57 E   |

**Attendance Policy:**

It is the student's obligation to take the quizzes, tests and the final exam at the scheduled times.

**Make-up Test/Quiz Policy:**

Make-ups will not be given. If a student misses a test/quiz, her/his grade for that test/quiz will be considered equal to her/his grade on the final exam.