

## Course Syllabus

833 MATH 174 - 02  
Calculus II  
Dr. Goutziers  
Fall 2006

**Room:** Physical Science 106  
**Time:** MWRF 08:00 - 08:50 am  
**Office:** Physical Science 112  
**Phones:** Office: (607) 436-3658  
Department Office: (607) 436-3708  
**E-Mail:** GoutziCJ@oneonta.edu  
**Web Site:** employees.oneonta.edu/GoutziCJ  
**Office** **M 09:00 am W 12:00 pm**  
**Hours:** **R 11:00 am F 11:00 am**  
**Textbook:** Calculus, *early transcendentals*

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

**Symbolic** Maple, Release 10  
**Software:**

### **College Catalog Description:**

**MATH 174 Calculus II.** 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 elementary functions, polar coordinates, parametric equations, infinite series. (*LA, N, TQ*) *Prerequisite:* MATH 173

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

MATH 174 continues the introduction to the calculus of one variable. The course has two primary goals: (1) to analyze integrability with techniques of integration, representation of functions through infinite series, polar coordinates and parametric equations; (2) to demonstrate an understanding for the application of the derivative and the integral in exponential growth and decay problems, calculating surface area and arc length, and approximation techniques for the values of definite integrals. Historical references will be made where appropriate.

To achieve these goals, students will, upon completion of 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 computations and extend them to algebraic expressions;
4. use mathematical modeling to solve problems from fields such as the natural sciences, social sciences, business, and engineering;

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5. use computer software and/or graphing calculators to explore and solve mathematical problems.
6. understand the historical development of calculus and the contributions of Newton, Leibniz, and others.

***Course content:***

Definition of the definite integral; the fundamental theorem of calculus; techniques of integration including integration by parts, trigonometric substitutions, partial fraction decomposition, approximate integration and improper integrals; applications of integration including arclength and area of a surface of revolution; parametric equations and polar coordinates; sequences and series, convergence criteria including the integral test, comparison tests, absolute convergence and the ratio and root tests; Taylor series.

***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, December 15, 08:00 am – 10:30 am, 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, 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.