

Course Syllabus

787: MATH 276 – 01
Calculus III
Dr. Goutziers
Spring 2006

Room: Physical Science 106
Time: MWRF 10:00 - 10:50 am
Office: Physical Science 112
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Web Site: employees.oneonta.edu/GoutziCJ
Office **M 09:00 am W 11:00 am**
Hours: **R 12:00 pm F 02:00 pm**
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 276 Calculus III. Math 276 constitutes the last third of the standard 12-credit calculus sequence, 173-174-276. Topics include functions of two or more variables, partial derivatives, multiple integrals. (*LA, N, TQ*) *Prerequisite:* MATH 174.

Course Goals and Objectives:

MATH 276 provides an introduction to the functions of several variables using vector space calculus. The goals of the course are to understand the fundamentals of vector space calculus with respect to representations and operations, vector functions and their derivatives and integrals, directional derivatives, gradients, tangent planes and the Chain rule, multiple integrals, line and surface integrals with Green's and Stoke's theorems. Historic references will be made when 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 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:

Dot and cross products, equations of lines and planes, quadric surfaces, vector functions and space curves, arclength and curvature in 3-space, cylindrical and spherical coordinates, limits of functions of several variables, partial derivatives, tangent planes, differentials, gradients, directional derivatives, extrema, the Lagrange Multiplier Method, double and triple integrals, line integrals, Green's Theorem, surface integrals, Stoke's Theorem and the Divergence Theorem.

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 12, 8:00 - 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, 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:

Tests:	40%	90 - 100 A	77 - 80 B-	64 - 67 D+
Quizzes:	20%	87 - 90 A-	74 - 77 C+	60 - 64 D
Final Exam:	20%	84 - 87 B+	70 - 74 C	57 - 60 D-
Homework:	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.