

## **MTH 241 Analytic Geometry/Calculus III**

Winter/Spring 2006

University of Detroit Mercy

Department of Mathematics and Computer Science

Lecture: Tuesdays/Thursdays, 6:40pm-8:20pm, Room E224

Prerequisite: MTH 142 (Calculus II)

Instructor: Dr. Abhijit Dasgupta

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Blackboard Website: <http://knowledge.udmercy.edu/>

Office Hours: MW 1:00-1:50pm, TR 4:10-5:00pm, and anytime my office door is open.

Or, email, call, or talk to me in person to schedule an appointment.

### **Textbook**

*Calculus, 7th Edition* (Multivariable version OK), by Anton and others, John Wiley and Sons, 2002.

### **Course Description**

Plane curves, polar coordinates, vectors in two and three dimensions, analytic geometry in the three dimensions; vector valued functions; partial derivatives; multiple integrals; vector fields and line integrals, surface integrals; Green's, divergence, and Stoke's theorems (statement only).

### **Course Outcomes**

After taking this course, students will be able to:

1. Be proficient in vectorial 3d analytic geometry of curves, planes, and other surfaces.
2. Solve problems which use functions from  $\mathbb{R}$  to  $\mathbb{R}^3$ , in particular particle motions in space.
3. Develop skills in manipulating real functions of several variables (from  $\mathbb{R}^3$  to  $\mathbb{R}$ ) and their derivatives.
4. Apply above techniques to real life optimization problems (multivariable maxima and minima).
5. Work with double and triple integrals over general regions in the plane and space.
6. Work with line integrals, conservative and other fields, grad, div, and curl.

### **Important Dates**

Feb 3 Last Day to Drop a Course Without a W

Feb 28 Midterm Grades

Mar 6-11 Mid-Winter/Spring Break

Mar 31 Last Day to Withdraw From Class

Apr 27 Final Exam starting at 11:00am

## **Final Exam**

The final exam will be on Tuesday, April 25, 7:30pm-9:20pm. Note that the exam time is different from that of the lecture. It will be a comprehensive (cumulative) exam, and is mandatory for determining your overall grade. The final exam score cannot be replaced by any of the test scores.

## **Grading Policy**

3 Midterm Tests: 60% (20% each)

Final Exam: 30%

Class Participation, Problems, Quizzes: 10%

No make up exams will be given. However, if the final exam score is higher than the lowest test score, then the lowest test score gets replaced by the final score. A missed test counts as the lowest test score.

Grading Scale: A: 90 or above B: 75-89 C: 60-74 D: 50-59

Letter grades may be appended with a '+' or a '-' if the score is close to the boundary of the next (adjacent) higher or lower letter grade score range.

## **Tentative Schedule** (subject to change)

<i>Week</i>	<i>Date</i>	<i>Material/Activities</i>	<i>Date</i>	<i>Material/Activities</i>
1	Jan 10	Chapter 12	Jan 12	Chapter 12
2	Jan 17	Chapter 12	Jan 19	Chapter 12
3	Jan 24	Chapter 13	Jan 26	Chapter 13
4	Jan 31	Test 1	Feb 2	Chapter 13
5	Feb 7	Chapter 13	Feb 9	Chapter 13
6	Feb 14	Chapter 14	Feb 16	Chapter 14
7	Feb 21	Chapter 14	Feb 23	Chapter 14
8	Feb 28	Chapter 14	Mar 2	Chapter 15
9	Mar 7	Spring Break	Mar 9	Spring Break
10	Mar 14	Test 2	Mar 16	Chapter 15
11	Mar 21	Chapter 15	Mar 23	Chapter 15
12	Mar 28	Chapter 15	Mar 30	Chapter 16
13	Apr 4	Chapter 16	Apr 6	Chapter 16
14	Apr 11	Chapter 16	Apr 13	Chapter 16
15	Apr 18	Test 3	Apr 20	Final Review
16	Apr 25	Final Examination (Cumulative) 7:30pm-9:20pm		

## **More Important Information**

1. Working out the homework assignments will be the most important thing for learning this course.
2. Login to <http://knowledge.udmercy.edu/> and frequently check the Course Documents link for homework assignments, solutions to problems and tests, and any other updates and handouts.
3. You are encouraged to ask questions in class, and outside class!
4. Everything in this course description is subject to change.

**Academic Integrity**

Students are expected to conform to a high standard of honesty and integrity in this course. Any kind of cheating or unfair means to perform in this course (or permitting or helping someone to do so) will result in an automatic zero score for that assignment or test. In addition, the student will be reported to the proper university authority for appropriate action. (See the University Catalog and the Engineering and Science Student Handbook for details.)