MATH 3400: MULTIVARIABLE CALCULUS

UVa–Wise. Department of Mathematics and Computer Science. Spring 2014.

BASIC INFORMATION

Class meetings: Monday, Wednesday, and Friday, 11:00–11:50, in Darden 122.

Instructor: Dr. Matthew Harvey

Office: Darden Hall 235

Office phone: 276-376-4571

Office hours:

 • Monday 9:00–11:00
 • Tuesday 9:30–11:00, 12:30–1:30
 • Wednesday 9:00-11:00
 • Thursday 9:30–11:00, 12:30–1:30
 • Friday 9:00-11:00

Email: msh3e@uvawise.edu

Web: www.mcs.uvawise.edu/msh3e/

COURSE DESCRIPTION

The prerequisite for this course is successful completion of both Math 3060 and Math 3130 with a grade of C or better or permission of the instructor.

In this class, we will study how to extend the tools of calculus, the limit, the derivative, and the integral, beyond functions of one variable. For instance, how can we calculate the equation of a tangent line to a curve in three-dimensional space? How can we find the volume of a region between two surfaces? How can we find the average value of a function on a curved surface? The specific topics that we will cover are

 • cylindrical and spherical coordinates
 • limits and derivatives of functions of several variables
 • parametrized curves
 • vector fields
 • max/min of functions of several variables
 • multiple integrals
 • line integrals
 • surface integrals
 • Green's, Stokes', and Gauss's Theorems

The textbook for this course is *Vector Calculus*, 4th ed., by Susan Colley. We will quickly review the first chapter of that book, and then work out way through most of the material in chapters 2–7.

THE EVERYDAY CLASS

Your presence in class is expected. In class, you are expected to pay attention and contribute. At the very least, you must not be a distraction to your fellow classmates. Please turn off electronic devices, including cell phones, MP3 players, and the like. Disruptive behavior will not be tolerated. If I feel that you are a distraction to the rest of the class, I will ask you to leave.

GRADES

Homework will be assigned and collected approximately once a week. You are allowed to collaborate with classmates on the homework, but you must turn in your own work. Collaboration means working together to solve the problems– copying will not be accepted. Your work should be neat, well-organized, and stapled. Answers should be clear and well-reasoned. We may also have some in-class quizzes.

During the semester there will be three in-class tests. These are tentatively scheduled for the weeks of February 10, March 3, and April 14, although the exact dates are still to be decided (see the attached schedule).

A typical test will consist of between 10 and 15 short answer questions.

- No make-up exams will be given unless you can present a valid documented excuse. In this case, you will either take a make-up exam or be given a grade based on other assignments, whichever I feel is more appropriate.
- Your final exam grade may be used to replace you lowest test grade.
- At the end of the semester you will have a comprehensive final exam.
- Course grades will be assigned according to these percentages:
    homework and quizzes: 20%
    tests: 60%
    final exam: 20%

If you need course adaptations or academic adjustments because of a documented disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please make an appointment to talk with me as soon as possible.

CHEATING

Cheating will not be tolerated. Any student caught cheating will receive a zero on the assignment, will be reported to the Honor Court, and if found guilty may receive an F for the course.