Math 3592H   Honors Mathematics I   Fall Semester 2017

Instructor: Peter Webb
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Course Site: http://www.math.umn.edu/~webb
Office Hours: 11:15-1:00 MWF or by appointment.
TA: Ryan Matzke, 557 Vincent Hall, 624-5047, matzk053@umn.edu
Text: J.H. Hubbard and B.B. Hubbard. Vector Calculus, Linear Algebra, and
                       Differential Forms, 5th edition.

Course Content

In this course we introduce the elements of linear algebra, and then use it to study differentiation where there are several variables, as well as some other things. We will only cover the topics in linear algebra done in a first course and really at some time in the future you should study it further, since it is a very important and useful topic. I expect that you will already have studied differential and integral calculus of functions of one variable. You may have done multivariable calculus before, but this course is likely to be different in a couple of ways. One is that we use linear algebra as a language, so that the derivative at a point is a linear map, and the chain rule has to do with a composite of linear maps. The other difference is that we will be reading and writing proofs. This is usually the aspect of the class that people find most difficult. I expect to cover Chapters 1and 2 of the book. We may also study some topics which are not well covered in this book, namely sequences, series, series of functions of one variable, particularly power series. Next semester we will go on to study integration in the context of several variables and the spectacular integration theorems of Green, Gauss and Stokes, which are fundamental in physics.

Course Assessment

There will be three full-period mid-term exams, to be held on **Thursday October 5, Thursday November 9** and **Thursday December 7**. The final exam is one of the 'common finals' and will be held at the official time, which is **12:00-3:00 Friday December 15**. The final exam will probably not be held in our usual classroom.
You will also have homework and quizzes organized by the TA in recitations.
Your final grade will be made up of homework and quizzes 20%, mid-term exams 15% each, final exam 35%.

Homework

Assignments will usually be handed out on Monday or Wednesday. Some of the problems are to be handed in on Thursdays of the following week at the beginning of your recitation period (8-10 days after it is assigned). Late homework will receive a very reduced grade (no credit for problems already solved in class). If it is handed in after the assignment has been graded, there will be no credit given. The first homework will be due on Thursday September 14.

Quizzes

There will be a short quiz at the beginning of most of the Thursday recitation periods covering homework due that day. The first quiz will be on Thursday September 14.

Absence from exams
Missing a midterm is permitted only for the most compelling reasons. Except in extraordinary situations, you should obtain permission from the **professor** to miss an exam in advance; otherwise you will be awarded a 0. If you are excused from taking a midterm, your course grade might be determined by giving extra weight to the final exam. I will give make up exams only for reasons sanctioned by the university, including university sponsored activities and documented illness. Students missing the final exam will fail the course unless they have a very good reason, in which case see Incompletes below. Don't bother to obtain permission to miss a quiz: your lowest quiz score will be dropped.

Attendance
Students are expected to attend all lectures and recitations. Attendance may be checked and included in the grade line.

Expectations of written work
In a number of cases in the homework problems and the questions in the exams you will not get full credit if you simply write down the correct answer. To get full credit you will need to write an explanation of how you got your answer. Where explanations need to be given, these should be written out in sentences i.e. with verbs, capital letters at the beginning, periods at the end, etc. and not in an abbreviated form.
I encourage you to form study groups. However everything to be handed in must be written up in your own words. If two students hand in identical assignments, they will both receive no credit.

Computers and Calculators
You are not required to have a calculator. Computers may not be used on quizzes and exams. Calculators may be allowed on some quizzes and exams, and we will discuss this.

Incompletes
These will only be given in exceptional circumstances. A student must have satisfactorily completed all but a small portion of the work in the course, have a compelling reason for the incomplete, and must make prior arrangements with the **professor** for how the incomplete will be removed, well before the end of the quarter.

Academic Dishonesty
Academic dishonesty in any portion of the academic work for a course shall be grounds for awarding a grade of F or N for the entire course.

Credits and Workload Expectations
For undergraduate courses, one credit is defined as equivalent to an average of three hours of learning effort per week (over a full semester) necessary for an average student to achieve an average grade in the course. For example, a student taking a three credit course that meets for three hours a week should expect to spend an additional six hours a week on course work outside the classroom.

Date of this version of the schedule: 9/3/2017