Course Overview: The main goal of this course is to introduce the basic theory of quadratic forms over fields. For this we will need the theory of linear algebra, so one focus of this course will be advanced topics in linear algebra: non-singularity, diagonalization, direct sums, tensor products, etc. Given this, we will actually start the course with some of the classical results (back to Pythagoras!) from the theory of integral quadratic forms.

Textbook: There is no assigned textbook for this class. We will create our own class notes as we go through the semester (see below). The topics we cover will come from many sources. I am happy to discuss these sources with you if you like. One book we will follow from time to time is Lam’s Introduction to Quadratic Forms over Fields, but it is not necessary for you to purchase this book.

Prerequisites: The prerequisites for this course are minimal. Every student should have a solid understanding of undergraduate linear algebra and every student should have had a first course in abstract algebra (Math 422). The background of the students in the class will determine the pace of the class.

Homework: Responsibilities of the students include:

1. Attendance.

2. Note Taking. Everyday in class one student will be the designated note-taker. That student is responsible for TeX-ing up that days notes, as well as flushing out any details that are not done during class (a template for the LaTeX file is available on the webpage). In addition, that student will be responsible for TeX-ing up any homework problems and solutions assigned during that day. I would advise that day’s note-taker to collaborate with the other students so that the optimal (and correct!) solution is presented in the notes. All notes will be edited by me and returned to the student for corrections. Please submit a paper copy of the notes to me no later than 1 week after the day the notes were taken. At the end of the course we should have a great set of notes for the class.

3. Homework. Homework will be assigned daily and collected weekly. Not all problems will be graded. You are encouraged to work together on the homework problems. However, please do not use the web on your homework. If you need help with a problem, ask me or a fellow classmate for a hint.
**Grades:** Grades will be based on quality of notes taken and homework grades.

**Extra class period:** Before the semester begins we will try to schedule an extra hour during the week in which everyone in the class can meet. We will use this hour to both discuss homework problems and have class lectures which will replace regularly scheduled classes that need to be cancelled.

**Important dates:**
- September 20   Last day to drop/add via CyberBear. This is also the last day for students to select the audit grade option.
- November 1    Deadline for students to drop/add a course, change sections, change grading option or change credit in a variable credit course. After this date, changes can be made only by petition.
- December 13  Last day to petition to drop/add, etc.
- December 15  (Wed) Final exam scheduled (1:10 - 3:10 PM).

**Academic Honesty:** All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.

**Student Conduct Code:** All students need to be familiar with the Student Conduct Code. You can find it in the “A to Z Index on the UM home page.

**Disability Support:** It is the policy of this instructor, that any student with a disability receive fair and equal treatment in this course. If you have a documented disability that requires academic adjustments or accommodations, please speak with me. All discussions will remain confidential.