M392C: Morse Theory

Professor: Dan Freed, RLM 9.162.

Lectures: Wednesdays 4:00–7:00, RLM 9.166.

Format of Class: This class is unusual—I will give half of the lectures and students will give the other half, or perhaps slightly less. Of course, each student needs to keep up on all the material, not just the chapter (s)he lectures on. There are also homework problems which are important.

Office Hours: Mondays 2:30–4:00, subject to change. This is a good time for me to meet with students who are lecturing the following Wednesday (two days hence) to answer mathematical questions and help them prepare. I am also happy to see other students at this time. You can try to catch me at other times as well.

Class Web site: `http://www.ma.utexas.edu/users/dafr/M392C`. Homeworks will be posted here, as will readings.

Text: We will begin with Milnor's classic *Morse Theory*. The book should be available in the bookstore. Nicolescu's more recent *An Invitation to Morse Theory* will also be used, at least as a reference.

Homework: I may post problem sets on the course website, but you can and should find plenty of problems of your own from the lectures and the text. I urge you to immediately form study groups and to discuss the problems and lectures together, as well as individually. But you should not hand in the homeworks—come to office hours to discuss.

Seminars: I encourage you to at least sample the weekly geometry seminars. The main Geometry Seminar is Thursdays at 3:30. Speakers are encouraged to be expository during the first part, and this usually makes that seminar more accessible. There is a regular Geometry and String Theory seminar on Wednesdays at 12:00. We may also have some Tuesday GADGET seminars at 12:30. You shouldn't expect to understand everything at a research seminar, or even in some cases to understand very much. But only by attending seminars will you learn about a field: its problems, techniques, style, priorities, personality and personalities, etc. I cannot urge you strongly enough to sample all of our many departmental seminars.