MAT 127: Calculus C, L02, Spring 2015  
Supplementary Midterm II Information

**Wednesday, 04/01, 8:45-10:15pm Frey 102 (for L02)**

Please arrive before 8:40pm. This exam is worth 25% of your final grade, so you do not want to be late starting it.

The exam will cover **Notes on ODEs** and **Sections 7.6-8.3**. Please review *Course Summary II* and make sure you can do all problem set exercises from these five sections and some other related problems from the notes and the textbook. Detailed solutions to a number of such problems are available on the supplementary L02 website (including as part of Practice Problems). For review purposes, please also do the 2010 Early Exam available on the supplementary L02 website; being able to deal with logs, exponentials, and fractions should be useful for Midterm II.

**Old exams** are available in the Homework section of the main MAT 127 website and at the top of the supplementary L02 website. They should not be viewed as sample exams, since they cover somewhat different material. For example, the exams from Fall 09 and Fall 10 do not contain problems involving second-order ODEs; such a problem may appear on your exam. Please look at the old first midterms for these problems.

Since **HW8** covers only Section 8.3, completing it before the deadline (which is before the exam) should help you prepare for the midterm. While HW9 concerns Section 8.4, which is not officially on the midterm, it covers essentially the same concepts and may help with the midterm as well. So, try to look at least at the WebAssign portion of HW9.

MLC will run a **review session** on Tuesday, 03/31, 5:30-6:50pm, in Library W4550. The lecture right before the midterm will be a Q&A review session; please feel free to e-mail me any questions you'd like to be discussed before noon on Wednesday. If there are no questions, I will continue with Section 8.4 or start 8.5.

**After Midterm II**

The last chance to withdraw from MAT 127 is Friday, April 3, before 4pm. The midterms will hopefully be graded on Thursday. Depending on your weighted total and the scores on the two midterms, you will need to decide quickly whether to remain in this course or withdraw to avoid an *F* on your transcript. In many cases, this will be clear. I will hold **additional OHs** on Friday, April 3, 10-12, in case you need advice on your standing in the class and your chances of passing this course.
Before Midterm II

The grades (points and letter) in MAT 127 have had a long history of dropping significantly from Midterm I to Midterm II. In Fall 09 and 10, drops of 15-25 points were typical, with a few gains of a few points and a number of 30-40 point drops. Most of the 30-40 points drops came from those who had scored in the A/A- range on the first midterm, but had then gotten a bit overly confident perhaps. Fortunately, such a huge drop from the A/A- range on the first midterm should still leave you with a realistic chance of passing this course (if you catch up before the final exam), but unfortunately with essentially no chance of getting an A/A- for the semester.

In contrast to Fall 09 and 10, the second order ODEs may appear on the second midterm this time. This topic is more technical, but much less abstract, than either Section 7.6 or Section 8.1-8.3. As long as you remember the three cases for the solutions of these equations and are careful with computations, such a problem should help with your exam score. This might be a good problem to start with on the midterm if you are having trouble concentrating.

Section 7.6 is pretty hard being heavily graphics and graphics of rather difficult kind, but at least it is more concrete than Sections 8.1-8.3. If you are asked to find the equilibrium (constant) solutions, make sure to take one condition for the vanishing of the derivative of each of the two functions.

Sections 8.1-8.3 often lead to confusion between sequences and series, the corresponding notions of convergence, and the corresponding convergence/divergence tests. The only way to void this is by doing lots of exercises from the textbook. The reason that the recent problem sets contained so many exercises is that most of them should take you very little time. If you have really mastered Sections 8.1-8.3, you should be able to tell whether most sequences and series in the exercises for these sections converge or diverge immediately and to formally justify your answer in 1-2 minutes (a few of the series there require computing partial sums, which takes a little bit of time). If you want to increase your chances of passing this course after a poor score on the first midterm or want a good grade after a strong score on the first midterm, you should do every exercise in these sections that asks to determine whether a sequence or a series converges (this excludes a few exercises, involving long statements or approximating sums of series); you can check your answers at OHS, in MLC, or with other students. Please also review Course Summary II and the short handout Convergence of Sequences vs. Series which compares them in five examples.

If you have any questions, please come to the office hours of any MAT 127 lecturer, MLC, a Residential Tutoring Center, and/or either of the review sessions.

Good luck on Midterm II!