Spring 2018 Math 63CM: Modern Mathematics: Continuous Methods

This is proof-based course on ordinary differential equations. Students are expected to have completed 61CM and 62CM; otherwise, you are encouraged to talk to the instructor before the end of Week 1.

Course webpage
http://web.stanford.edu/~jluk/math63CMspring18/index.html

Instructor
Jonathan Luk, jluk@stanford.edu

Teaching assistant
Jens Reinhold, jreinh@stanford.edu

Prerequisites
Math 61CM and 62CM.

Lectures
M-Th 9:30-10:20am, 380-380D. On Friday, there is a TA section at the same time and location.¹

Office Hours
Tu, Th 5-6:30 pm with Jens Reinhold at 380-380G, M 10:30am-12:30pm, W 1-2pm with Jonathan Luk at 380-382Z, or by appointment.

Textbook
Simon Brendle, Ordinary differential equations.

Topics of the course
Topics include linear systems of differential equations and necessary tools from linear algebra, stability and asymptotic properties of solutions to linear systems, existence and uniqueness theorems for nonlinear differential equations, behavior of solutions near an equilibrium point, and Sturm-Liouville theory.

¹There will be a slight change in weeks 9 and 10. On Week 9, there will be two TA sections; while on week 10, there will only be lectures.
Homework assignments

• There will be eight homework assignments. Assignments can be found on the course website (at least) one week before it is due.

• Homeworks are due weekly during lecture on Mondays. The first homework will be due on Monday on Week 3, 4/16.

• You may (and are in fact encouraged to) discuss the homework problems with others in the class, but you must write up your own solution.

• The final score for the homework assignments will be calculated as the average of the seven best homework scores, each with equal weight. In other words, the lowest homework score will be dropped.

Examinations

• There will be two midterm examinations in total, one on Tuesday, 4/24/2017 and one on Tuesday, 5/22/2017. Both midterm exams will be at 6:30-7:30pm, 380-380Y.

• There will be one final examination at 7-9pm on Friday, 6/8/2017, at a location to be determined.

• If you have OAE accommodations, please let the instructor know immediately, and no later than the end of week 1.

• Makeup midterm examinations are only available to students with a clash with other classes or in exceptional situation with prior approval by the instructor. If this applies to you, you should contact the instructor immediately, and no later than the end of week 1.

• The final examination is officially scheduled by the registrar’s office and under no circumstances can it be varied.

Grading policy

The grade will be based on the homework assignments (25%), the midterm exams (40% total, 20% each) and the final exam (35%).