

Math 312
Differential Equations and Dynamical Systems
SPRING 2005

Instructor: Dr. Jae-Hyook Lee, Cupples I (108C), 5-6866, email: jhlee@math.wustl.edu

Time and Location: M-W-F- 3:00 - 4:00 PM Cupples I 215

Office Hours: Monday, Wednesday 4:00 - 5:00 PM

Textbook: *Differential Equations, Dynamical Systems, and an Introduction to Chaos* by Robert L. Devaney, Morris Hirsch, Stephen Smale

Material: The main concerns of this course are dynamical aspect of ordinary differential equations and the relations between dynamical systems and many fields outside pure mathematics.

This course will cover linear systems, Picard's existence and uniqueness theorem, the phase plane, Poincare-Bendixon theory, stationary points, attractors and repellers, graphical methods, and Physical applications, including chaos.

Fundamental knowledge of differential equations and linear algebra is prerequisite, but most of it will be reviewed in class for those who are not familiar with it.

Grading: There will be weekly assignments, two midterm exams and a final. They will count toward the grade as follows.

Assignments	40%
Midterms	30%
Final	30%.

Exams and Homework: The midterm exams will be on Friday, February 25 and Friday, April 8. The final exam is on Thursday, May 5 from 6:00 PM to 8:00 P.M. A written homework assignment will be due every Monday during the semester and no late homework is acceptable.