

Math 5535 (Dynamical Systems and Chaos), Fall 2005

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Lectures: MWF 2:30 - 3:20, Vincent Hall 209
Office hours: MF 10:00 - 11:00

Texts:

S. Elaydi: Discrete chaos, Chapman Hall/CRC, 2000. (the course textbook)
R.C. Robinson: An introduction to dynamical systems: continuous and discrete, Pearson Education, 2004. (a helpful supplementary reading)
R.L. Devaney: An introduction to chaotic dynamical systems, 2nd ed, Oxford: Westview, 2003. (another text of interest)
B. Hasselblatt and A. Katok: A first course in dynamics: with a panorama of recent developments, Cambridge University Press, 2003. (another text of interest)

We will try to cover the whole Elaydi's book. Some extra topics (mainly from the Robinson's book) will be discussed. The main topics are: discrete dynamics in one and two dimensions, fixed points, periodic points, stability, bifurcations, fractals, stable manifold theorem, chaos, Julia sets.

Evaluation:

There will be three midterms and occasional quizzes.

Midterm 1 - Monday, October 3
Midterm 2 - Monday, November 7
Midterm 3 - Monday, December 5

All exams are closed books, closed notes and no calculators allowed.

Homeworks will be assigned each Friday, and due the following Friday at the beginning of class. No late assignment will be permitted. The solution of each exercise will be evaluated in the scale 0-5 points, taking into account the correctness, clarity and neatness of presentation. You may collaborate and discuss the problems with each other but should write up solutions independently.

The contribution of these items towards the final grade will be weighted as follows:

Homeworks: 30%
Quizzes: 10%
Midterms: 60%

Other:

Incompletes and make-up exams will almost never be given, and only for cases of extreme personal tragedy.

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<http://www1.umn.edu/regents/policies/academic/>