

MA 490/590 DYNAMICAL SYSTEMS Spring 2008

MW 11:00 a.m. - 12:15 p.m. in ILB 335

Instructor: Dr. Victoria Sadovskaya. You may call me Victoria.
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Office hours: MW 2-4 p.m., or by appointment
Course homepage: www.southalabama.edu/mathstat/personal_pages/sadovska/490/490.html

Objectives: The goal of this course is to present the fundamental concepts and tools that dynamics uses to describe complex long-term behavior in systems that evolve in time. The students will be exposed to an array of examples with gradual increase in complexity. They will gain understanding and working knowledge of topological and statistical techniques. The course will also emphasize applications of dynamics in mathematics and natural sciences.

Text: *A First Course in Dynamics* by B. Hasselblatt and A. Katok.
ISBN 0-521-58750-6.

Coverage: We will cover most of Chapters 1-8 of the text. The topics include contractions, linear maps, differential equations, recurrence, equidistribution, hyperbolic systems, symbolic systems and coding, fractals, entropy, and chaos.

Prerequisites: MA 227, 237, 238, and 334, or permission of the instructor.

Attendance: You are expected to attend every class and participate in discussions. Please notify me in advance if you have to miss a class. You are responsible for finding out what you missed on the days when you were unable to attend. *Class attendance and participation will be considered in determining borderline grades.*

Homework: A homework assignment will be given each Wednesday, it will be due the following Wednesday. *No late homework will be accepted* unless you are unable to finish an assignment on time because of an illness or a family emergency.

Standards of written work: The solutions must be neatly and clearly written and logically structured. You may use without justification the statements established in class, the results of previous homework assignments, and the statements in the book (only from the sections already covered). You may discuss homework problems with me and with other students, but the final write-up must be your own.

Exams: There will be a midterm exam and a cumulative final exam. The date of the midterm will be announced in class and posted on the course homepage at least one week in advance. The final exam will be on Wednesday, April 30, 10:30 a.m - 12:30 p.m. If you are unable to attend an exam you should notify me promptly: before the exam if possible, and otherwise before the next class.

Final grade computation: Your final score will be calculated as follows:

Homework:	60%
Midterm Exam:	15%
Final Exam:	25%

Your letter grade will be determined according to the following scale:

A:	at least 85%
B:	at least 75%
C:	at least 65%
D:	at least 55%
F:	below 55%

Notification of course grades: Final grades will be available on PAWS when posted.

Dropping: The last day to drop from a course is Friday, April 4. Please speak with me before making a final decision to drop the class.

Academic accommodations: If you have a specific disability that qualifies you for academic accommodations, please notify me and provide certification from the Office of Special Student Services. It is located in the Student Center, Room 270, Phone 460-7212.

Note: *The requirements and the policies may be modified as circumstances dictate. Such changes will be announced in class and posted on the course homepage.*