

MATH 497B An Introduction to Dynamical Systems Fall 2014

Lectures: Monday, Wednesday, Friday 11:15 a.m. - 12:05 p.m. in 113 McAllister

Recitations: Thursday 11:15 a.m. - 12:05 p.m. in 113 McAllister

Course web page: www.personal.psu.edu/vxs137/MASS14/497B.html

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Office hours: T 9-10 a.m., R 2:20-3:20 p.m.
and by appointment

Text (optional): B. Hasselblatt and A. Katok. *A First Course in Dynamics with Panorama of Recent Developments*. ISBN: 978-0-5215-8750-1.

Course description: This course is a part of the MASS Program.

The theory of dynamical systems is a modern branch of mathematics. Its main objective is to analyze long-term behavior of systems that evolve over time. In this course, we will introduce the fundamental concepts and tools of dynamics and discuss an array of examples with gradual increase in complexity. The topics will include contractions, linear maps, differential equations, recurrence, equidistribution, hyperbolic systems, symbolic systems and coding, fractals, entropy, and chaos.

Attendance: You are expected to attend every class.

Homework: Homework assignments will be given on a weekly basis and collected on Fridays. The solutions of homework problems must be neatly and clearly written and logically structured.

Exams and Project: There will be a two-hour written Midterm Exam on October 8. The oral Final Exam will take place on December 12, 15, or 17. It will include the presentation of your course project. Course projects will be assigned in the first half of October.

Grading: The course grade will be based on your performance on the midterm exam, the final exam, homework and the project.

Academic Integrity: All Penn State Policies regarding ethics and honorable behavior apply to this course. They can be found at <http://science.psu.edu/current-students/Integrity/Policy.html>

Students with disabilities: Penn State welcomes students with disabilities into the University's educational programs. Every Penn State campus has an office for students with disabilities. The Office for Disability Services (ODS) web site provides contact information for every Penn State campus: <http://equity.psu.edu/ods/dcl>. For further information, please visit the Office for Disability Services web site: <http://equity.psu.edu/ods>.